CRITICAL THINKING  
批判性思维



ROBERT H. ENNIS





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思考



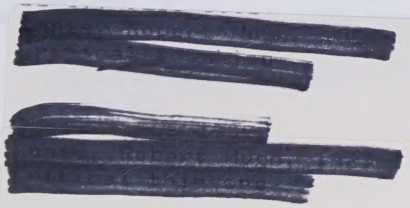
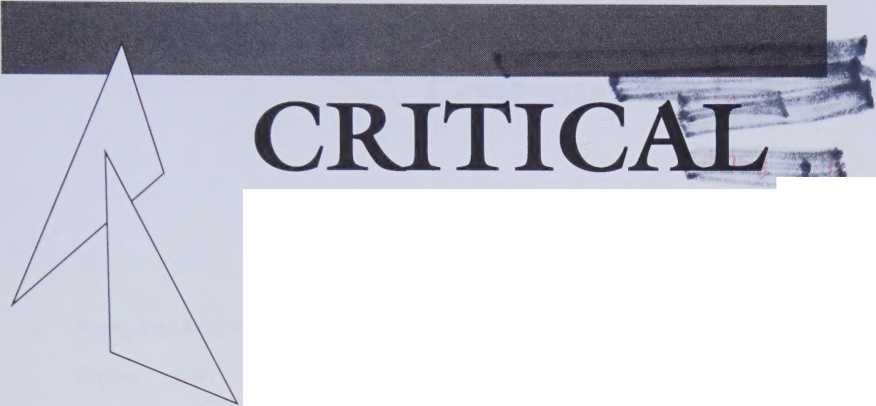
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**ROBERT H. ENNIS**

University of Illinois

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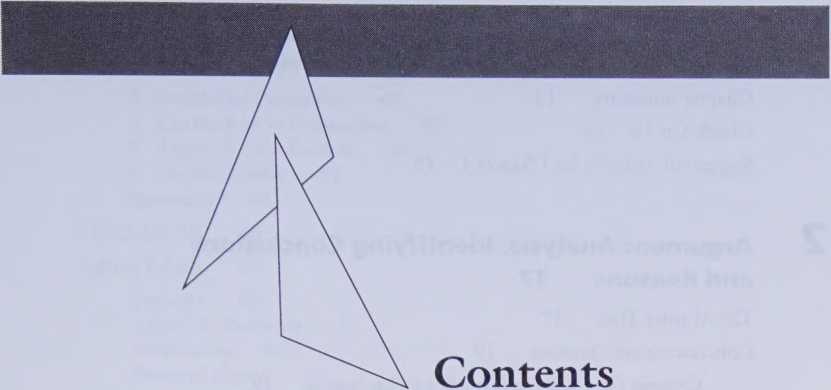
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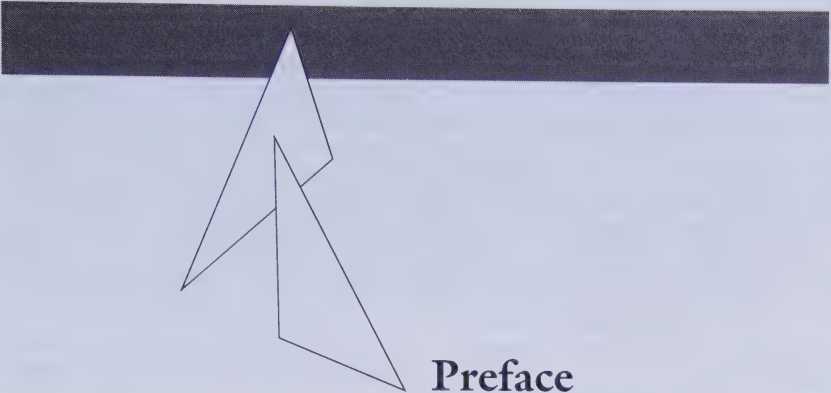
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Critical thinking is a process, the goal of which is to make reasonable decisions about what to believe and what to do. Because we all are continually making such decisions, critical thinking is important to us in personal and vocational, as well as civic, aspects of our lives. Some of these decisions are about whether to believe someone else, or to act in accord with that person’s recommendations. For example, an editorial in a newspaper urges that a particular candidate is the best choice for the presidency, and that we should vote for that candidate. We have a decision to make. A friend informs us that taking vitamin E and potassium is an effective way to prevent muscle cramps in the legs. Is the friend right? An author alleges that the Soviet Union was seeking world domination in the period 1945-1990. Is this author correct?  
批判性思维是一个过程，其目标是对于要相信什么和要做什么做出合理的决策。因为我们都在不断地做出这样的决策，批判性思维对于我们的个人、职业以及公民生活中都非常重要。其中一些决策是关于是否相信他人或者按照他人的建议行动。例如，一份报纸的社论敦促我们选择某个候选人作为总统的最佳选择，并且我们应该为该候选人投票。我们需要做出一个决策。一位朋友告诉我们，摄入维生素E和钾是预防腿部肌肉痉挛的有效方法。朋友是对的吗？一位作者声称苏联在1945年至1990年期间追求世界统治。这位作者正确吗？

­sions can call for more creativity. For example, we might want to decide what path to follow at some crucial point in our lives, when the paths are not clearly laid out. Then we must at least to some extent develop the possibilities as well as choose among them. Not all decisions are so significant, but if they matter at all, and we want to make the best decision, then critical thinking is important.These decisions call for some creativity in our critical thinking, but other decisions can call for more creativity. For example, we might want to decide what path to follow at some crucial point in our lives, when the paths are not clearly laid out. Then we must at least to some extent develop the possibilities as well as choose among them. Not all decisions are so significant, but if they matter at all, and we want to make the best decision, then critical thinking is important.  
这些决策需要我们在批判性思维中发挥一些创造力，但其他决策可能需要更多的创造力。例如，当我们的生活中的道路没有明确规划时，我们可能想要决定要选择哪条道路。那么我们至少要在某种程度上发展各种可能性，并在其中进行选择。并非所有的决策都那么重要，但如果它们有任何意义，并且我们想要做出最好的决策，那么批判性思维就很重要。

­duct of their everyday public lives, then the democracy in which they live is threat­ened. Given current conditions, once democracy is lost, it will be very difficult to recover. This is because modern technology (TVs, computers, etc.) makes available superbly efficient techniques for monitoring and controlling people’s activities and thoughts. Unfortunately, these techniques are readily available for use by any totali­tarian government. So the reestablishment of democracy, if lost throughout the world, would, I fear, be unlikely. Assuming that democracy should be encouraged and preserved, we then have an additional responsibility. We have a public responsi­bility to try to make reasonable civic decisions—that is, to try to think critically in civic matters, and to help others do so as well.Critical thinking is also important to the survival of a democratic way of life. If the people in a democracy do not make reasonable decisions in voting and the conduct of their everyday public lives, then the democracy in which they live is threatened. Given current conditions, once democracy is lost, it will be very difficult to recover. This is because modern technology (TVs, computers, etc.) makes available superbly efficient techniques for monitoring and controlling people’s activities and thoughts. Unfortunately, these techniques are readily available for use by any totalitarian government. So the reestablishment of democracy, if lost throughout the world, would, I fear, be unlikely. Assuming that democracy should be encouraged and preserved, we then have an additional responsibility. We have a public responsibility to try to make reasonable civic decisions—that is, to try to think critically in civic matters, and to help others do so as well.  
批判性思维对民主生活的生存也很重要。如果民主国家的人民在投票和日常公共生活中不能做出合理的决策，那么他们所生活的民主制度将受到威胁。鉴于当前的情况，一旦失去民主，将很难恢复。这是因为现代技术（电视、计算机等）提供了监控和控制人们活动和思想的高效技术。不幸的是，这些技术对任何极权政府都是可用的。因此，如果全世界失去了民主，我担心重新建立民主将是不太可能的。假设我们应该鼓励和保护民主，那么我们还有额外的责任。我们有公共责任努力做出合理的公民决策，也就是在公民事务中进行批判性思考，并帮助他人这样做。

Critical Thinking Dispositions and Abilities  
批判性思维倾向和能力

­natives. But underlying the development of the abilities to do these things are certain important critical thinking dispositions, which are combinations of attitudes and inclinations. You might also call them Most of the discussion in this book is about how to think critically. This includes observing, making judgments, planning experiments, and developing ideas and alternatives. But underlying the development of the abilities to do these things are certain important critical thinking dispositions, which are combinations of attitudes and inclinations. You might also call them virtues. One is the disposition to care about “getting it right” or, more broadly, to care about coming up with the best, most unbiased answer that you feasibly can in the circumstances. Even if you develop all sorts of high-powered skills and abilities, if you do not care about this, then your prowess will probably be wasted.  
这本书中的大部分讨论都是关于如何进行批判性思考。这包括观察、做出判断、计划实验以及发展想法和替代方案。但在培养这些能力的过程中，有一些重要的批判性思维倾向，它们是态度和倾向的结合。你也可以称之为美德。其中之一是关心做到正确或者更广泛地说，关心在特定情况下尽可能得出最好、最无偏见的答案。即使你培养了各种高超的技能和能力，如果你不关心这一点，那么你的才华可能会被浪费。

Another is the disposition to care to be honest and clear about what is written, thought, and said. If you do not care about getting things clear, then your thinking might well be unfocused and confused, leading nowhere.  
另一个是关心诚实和清晰地表达所写、所想和所说的倾向。**如果你不在意搞清楚事情，那么你的思维很可能是不集中和混乱的，导致无所适从。**

A third is the disposition to care about the worth and dignity of every person. If you do not have this care, then you might well be a dangerous person, even if you might otherwise be a good critical thinker.  
第三个是关心每个人的价值和尊严的倾向。如果你没有这种关心，那么即使你可能是一个很好的批判性思考者，你也可能是一个危险的人。

I mention these three basic dispositions because it is so easy to neglect them. They are elaborated in Chapters 1 and 14. I hope that you agree on their importance.  
我提到这三个基本倾向是因为很容易忽视它们。它们在第1章和第14章中有详细阐述。希望你同意它们的重要性。

Although everybody is already at least somewhat proficient at critical thinking, the material here should help you to improve your abilities, to be reflective about them, and to develop your critical thinking dispositions. When facing a real situation, you must combine these abilities and dispositions, although they are often discussed separately in this book. There will be a number of opportunities to practice. But you must bear a major responsibility for the actual combining of these interdependent aspects of critical thinking in real situations, taking everything into account—no easy task. Nobody can do it for you, although your instructor and I can help.  
虽然每个人都已经至少在某种程度上熟练掌握了批判性思维，但这里的材料应该帮助你提高你的能力，对它们进行反思，并发展你的批判性思维倾向。当面对一个真实的情况时，你必须结合这些能力和倾向，尽管它们在本书中通常是分开讨论的。将会有很多机会来实践。但在真实情况下，你必须承担起将这些相互依存的批判性思维方面综合起来的重要责任，考虑到一切——这并不容易。没有人可以替你做到这一点，尽管你的导师和我可以提供帮助。

A Brief Summary  
简要总结

­sion, and presentation of your views orally and in writing. There is much emphasis on writing, as well as deciding what to believe or do.After an introductory chapter, which sets the scene, this book deals with argument analysis, credibility of sources, observation, deduction, assumption identification, induction, value judging, definition, verbal clarity and consistency, fallacies, discussion, and presentation of your views orally and in writing. There is much emphasis on writing, as well as deciding what to believe or do.  
在一个介绍性的章节之后，这本书涉及到**论证分析、信息来源的可信度、观察、推理、假设辨识、归纳、价值判断、定义、语言清晰度和一致性、谬误、讨论以及口头和书面表达观点的呈现**。对写作有很大的强调，同时也包括决定要相信或做什么。

The sections dealing with either-or reasoning, types of assumptions, causation, relativism, and equivocation (the latter parts of Chapters 6, 7, 9, 11, and 13) are somewhat more difficult than the other materials. They are marked with a plus sign (+). If time is short, these parts might be omitted, although depth of treatment of critical thinking abilities and principles will consequently be reduced.  
处理二选一推理、假设类型、因果关系、相对主义和模棱两可的部分（第6、7、9、11和13章的后半部分）比其他材料稍微困难一些。它们用加号（+）标记。如果时间不够，可以省略这些部分，尽管批判性思维能力和原则的深度处理将相应减少。

At the end of the book, there is a glossary of key terms in critical thinking. Many of these terms are used in different and often technical senses in other fields, and some terms, such as argument are used in a limited sense in the field of critical thinking. If in doubt, check the glossary and the part of the text in which the term is discussed. The extensive index provides leads for investigating a concept.   
在书的末尾，有一个关键思维术语的词汇表。其中许多术语在其他领域中以不同且常常是技术性的意义使用，而一些术语，如argument，在批判性思维领域中则有限制性的意义。如果有疑问，请查阅词汇表和讨论该术语的文本部分。详尽的索引提供了研究概念的线索。

Using This Book  
使用本书

Practice  
练习

It is important to apply what you learn in a variety of situations, and to do it often. Real situations are often preferable to hypothetical ones because real situations seem more important to people and because they introduce the complexities that hypothetical situations tend to hide. However, practice in hypothetical situations is also helpful because it can give insight into particular aspects of critical thinking and allow you to focus on one thing to facilitate understanding and competence. In any case, much practice is required.  
在各种情况下应用所学的知识并经常这样做是很重要的。真实的情况通常比假设的情况更重要，因为真实的情况对人们来说似乎更重要，并且因为真实的情况引入了假设情况往往隐藏的复杂性。然而，在假设情况下进行实践也是有帮助的，因为它可以洞察批判性思维的特定方面，并使您专注于一件事情以促进理解和能力。无论如何，需要进行大量的实践。­

Both kinds of practice (with real and hypothetical examples) can be found in doing the Check-Up items throughout the book. Do a large number of these items, the more the better, because the application to particular cases does not, for most people, flow automatically from the reading. You improve with practice.  
这本书中的检查项目中包含了真实和假设的例子，可以找到两种类型的练习。做大量的这些项目，数量越多越好，因为对于大多数人来说，从阅读中自动地应用到具体情况是不容易的。通过练习可以提高自己的水平。

Another Project, Writing a Position Paper  
另一个项目，撰写立场文件

I strongly recommend that you also try to apply the principles and insights in this book to another project, as you are reading and coming to understand this book. This other project could be any significant activity in your daily life in which you have to decide what to do or believe, and need to set forth reasons for your decision. One good activity when this book is used as a text for a course in critical thinking is to write a position paper on an issue of interest to you. (A position paper is one in which you take a position and defend it.) After writing a draft, you should revise it, revise it again, and revise it some more—in the light of comments from a friend or associate, and from your instructor.  
我强烈建议您在阅读和理解本书的过程中，尝试将其中的原则和洞见应用到另一个项目中。这个项目可以是您日常生活中的任何重要活动，在这个活动中，您需要决定做什么或相信什么，并且需要提出决策的理由。当这本书被用作批判性思维课程的教材时，一个很好的活动是就您感兴趣的问题撰写一个立场文件（立场文件是您表明立场并为其辩护的文件）。在写完初稿后，您应该进行修订，再次修订，并根据朋友、同事和您的导师的意见进行进一步修订。

This paper should include a statement of your thesis, reasons in support of your thesis, the definitions of key terms where needed, subheadings, and a summary. It should pay due attention to the credibility of sources, reliability of observations, the strength of your inferences, counterarguments to your thesis, and word meanings. It should be documented where appropriate, and should be based on as good a grasp of the relevant facts, principles, and insights as you can muster. More details follow in Chapter 1 and periodically throughout the book.  
本文应包括您的论点陈述、支持论点的理由、必要时的关键术语定义、副标题和摘要。应充分注意信息来源的可信度、观察结果的可靠性、推理的强度、对论点的反驳以及词语含义。应适当提供文献引用，并基于您对相关事实、原则和见解的充分理解。更多详细信息请参阅第1章和本书的各个部分。

Order of Study  
学习顺序

Those of you whose learning style calls first for a broad look at critical thinking (combined with application to examples) might well profit from starting out by reading the last chapter (Chapter 14). For this procedure to do the most good, you should, with a friend, practice using the variety of questions of clarification and challenge and the variety of responses and strategies suggested in that chapter. On the other hand, if you learn best by a step-by-step approach to a subject, and are confused by encountering a wide array of concepts with which you are not familiar, you might find it best to start with Chapter 1, proceeding in order.   
那些学习风格首先需要广泛了解批判性思维（结合实例应用）的人，可能会从阅读最后一章（第14章）开始受益。为了使这个过程发挥最大的作用，你应该和一个朋友一起练习使用该章节中建议的澄清和挑战问题的各种方式以及各种回应和策略。另一方面，如果你更适合通过逐步学习一门学科，并且对遇到的许多不熟悉的概念感到困惑，那么最好从第1章开始按顺序进行。­bined ­tering a wide

Significant Features of This Book  
本书的重要特点

Another way for you to see what this book is about is to consider some of the significant features that I shall discuss next. You have already encountered some.  
你了解这本书内容的另一种方式是考虑我接下来将讨论的一些重要特点。你已经遇到了一些。­

Flexibility  
灵活性

The book can be used in a variety of ways. You can omit the more difficult parts, as indicated earlier, for an easier-to-grasp approach to critical thinking. You can include an emphasis on writing, as I think most people should. You can do a number of the more difficult items in the Check-Ups that periodically appear, if you are so inclined. You can select and emphasize areas of special interest. Possibilities include verbal questioning and probing, definition and conceptual clarity, the application of general principles of critical thinking in your special field, the nature of causality and causal relations, the accommodation of deductive logic to natural language, and the dilemmas provided by overemphasizing the relativistic insight that there are often many different, equally good ways to do something. More will occur to you as you proceed.  
这本书可以以多种方式使用。您可以省略较难的部分，如前所述，以更容易理解的方式进行批判性思维。您可以强调写作，因为我认为大多数人都应该这样做。***如果您有兴趣，可以在定期出现的检查中完成一些较难的项目***。您可以选择和强调特别感兴趣的领域。可能包括口头提问和探究、定义和概念的清晰度、在您的专业领域中应用批判性思维的一般原则、因果关系的性质和因果关系、将演绎逻辑适应自然语言、以及过分强调相对主义洞察力所提供的困境，即通常有许多不同但同样好的方法来做某事。随着您的进展，您还会想到更多可能性。­

There is also flexibility in the ordering of your reading and engaging these materials. You can do some skipping around, or you can proceed methodically. You can start at the beginning, or you can read the last chapter first.  
阅读和参与这些材料的顺序也是灵活的。你可以跳过一些内容，或者按部就班地进行。你可以从头开始，也可以先阅读最后一章。

­tion to examples. You must do this.One area in which there is no flexibility is the need for practice in the application to examples. You must do this.  
在一个没有灵活性的领域，需要在应用到例子中进行实践。你必须这样做。

FRISCO: A General Guide to Critical Thinking  
FRISCO: 临床思维的一般指南

In order to provide a reminder of the big ideas, I have developed an acronym, FRISCO, which stands for Focus, Reasons, Inference, Situation, Clarity, and Overview. The ideas represented by these letters provide a useful checklist, whether you are judging an already stated idea, or trying to develop a new one. If you thoughtfully consider all the ideas represented by FRISCO, you will have considered most of the major concerns in making a decision in that situation. Although it is impractical to methodically and consciously consider all of these ideas for every decision, it is often useful to do so. Furthermore, practice in doing so will sensitize you so that you will automatically notice problems and strengths without the explicit consideration of all of the FRISCO ideas.  
为了提供对重要观点的提醒，我开发了一个缩略词FRISCO，它代表着焦点（Focus）、原因（Reasons）、推理（Inference）、情境（Situation）、清晰度（Clarity）和概览（Overview）。这些字母所代表的观点提供了一个有用的检查清单，无论您是在评判一个已经陈述的观点，还是在尝试发展一个新观点。如果您仔细考虑FRISCO所代表的所有观点，您将考虑到在该情况下做出决策时的大部分重要问题。尽管对于每个决策系统地和有意识地考虑所有这些观点是不切实际的，但这样做通常是有用的。此外，通过这样做的实践，您将变得敏感，以至于您将自动注意到问题和优势，而无需明确考虑FRISCO的所有观点。

Writing, Discussing, and Presenting  
写作、讨论和演示

Because much of the critical thinking that we do is in the context of interacting with others in writing, discussing, or presenting, I have emphasized these three activities. Writing has been especially emphasized because much of the writing we need to do calls for critical thinking. A memo suggesting and defending a solution to a problem, for example, calls for critical thinking, as does a note to a friend suggesting and defending an interpretation of the friend's reaction to some event.   
因为我们所做的大部分批判性思维都是在与他人的书面互动、讨论或演示的情境中进行的，所以我强调了这三个活动。特别强调写作，因为我们需要进行的大部分写作都需要批判性思维。例如，建议并为问题辩护的备忘录需要批判性思维，给朋友写一封建议并为其对某个事件的反应进行解释的便条也需要批判性思维。

Credibility of Sources  
来源的可信度

Much of what we believe comes from other people and books. Some of these are not reliable sources for the topic (for example, the football player who endorses a breakfast cereal). Therefore, it is well to raise the question of the credibility of a source. This concern has been increasingly recognized recently among those interested in critical thinking, and is included in this book.  
我们所相信的很多东西都来自他人和书籍。其中一些并不是关于该主题的可靠来源（例如，代言早餐麦片的足球运动员）。因此，提出对来源的可信度的问题是很重要的。这个问题最近在对批判性思维感兴趣的人中得到了越来越多的认可，并被包含在这本书中。­fast cereal). Therefore, it is well to raise the question of the credibility

A Large Number of Examples  
大量的例子

Because the improvement of one’s critical thinking requires considerable practice, this book provides a large number of examples on which to practice. Some are simplified in order to introduce and provide focus; some are rich in the complexities of real life. But practice with examples is needed. Many opportunities are provided here.  
由于提高批判性思维需要大量的实践，本书提供了大量的实例供练习。其中一些是简化的，以引入和提供重点；一些则充满了现实生活的复杂性。但是需要通过实例进行练习。这里提供了许多机会。­plified in order to introduce and provide focus; some are rich in the complexities of real life. But practice with examples is needed. Many opportunities

Feedback  
反馈

­ed responses enable you to get immediate feedback, and give you some responsibili­ty in evaluating your own work, because you must decide about the significance of the difference, if any, between your work and the suggested resources. Furthermore, they enable your instructor to assign more of the open-ended kinds of I have provided suggested responses to most of the Check-Up items. These suggested responses enable you to get immediate feedback, and give you some responsibility in evaluating your own work, because you must decide about the significance of the difference, if any, between your work and the suggested resources. Furthermore, they enable your instructor to assign more of the open-ended kinds of tasks than would be possible if your instructor were doing all the evaluating of your work. You are thus able to receive a greater amount of supervised practice on challenging tasks.  
我已经为大部分检查项目提供了建议的回答。这些建议的回答可以让您立即获得反馈，并让您在评估自己的工作时承担一些责任，因为您必须决定您的工作与建议资源之间的差异（如果有的话）的重要性。此外，它们使您的教师能够分配更多开放性任务，而如果您的教师要评估您的工作，这将是不可能的。因此，您能够在具有挑战性的任务上接受更多的监督性实践。

Challenge  
挑战

Not all items have a suggested response. You are on your own on some. But be sure that someone else gets a chance to react to what you do.  
并非所有项目都有建议的回应。在某些情况下，你需要自己解决问题。但请确保给其他人一个机会来对你的行动做出反应。

Independent Study  
独立研究

­instructor. Several features make this possible: It contains extended discussions—This book can be used for independent study in which you are the instructor—a selfinstructor. Several features make this possible: It contains extended discussions—with examples—of the critical thinking topics considered. There are many examples for practice. And there are suggested answers to most of the review items provided in the Check-Ups. Do these items, and check the suggested answers until the items in a particular section are busywork. Then go on to another section. Be sure to have a practical project, such as a position paper, to which you can apply your critical thinking insights, abilities, and dispositions.  
这本书可以用于独立学习，您是教师，也是自我教师。有几个特点使这成为可能：它包含了对所考虑的批判性思维主题的深入讨论和示例。有许多练习的例子。并且对于在检查中提供的大多数复习项目都有建议的答案。完成这些项目，并检查建议的答案，直到某个特定部分的项目变得繁琐。然后继续下一个部分。一定要有一个实际的项目，比如一个立场文件，您可以应用您的批判性思维洞察力、能力和倾向。­ticular section are busywork. Then go on to another section. Be sure to have a prac­tical project, such as a position paper, to which you can apply your critical thinking insights, abilities, and dispositions.

Basis: A Coherent Overall Conception of Critical Thinking  
基础：批判性思维的一致整体构想

The content of this book is based on a conception of critical thinking that I have developed over the years. It has been subjected to criticism by others, and has been improved as a result. The most recent published version of this overall conception of critical thinking appeared in *Teaching Philosophy,* if you care to examine it.[[1]](#footnote-1)

An Extended Real and Important Example

Much of the discussion of various aspects of critical thinking is tied to an experience I had as a juror in a murder trial. One thing that struck me then was the relevance of all aspects of critical thinking to making the decisions the jury had to make. Not only were all aspects relevant, but they were interdependent. In considering this extended example, you will be able to see this applicability and interdependence.  
这本书的内容是基于我多年来发展起来的批判性思维观念。它经过了他人的批评，并因此得到了改进。如果你有兴趣，可以在《教学哲学》中找到最近发表的关于批判性思维的整体观念。 关于批判性思维各个方面的讨论大部分与我在一次谋杀审判中作为陪审团成员的经历有关。当时让我印象深刻的一件事是批判性思维的各个方面对陪审团所做决策的相关性。不仅所有方面都相关，而且它们之间是相互依存的。通过考虑这个延伸的例子，你将能够看到这种适用性和相互依存性。

Like all examples, the jury example is to some extent unique, even for a murder trial. Little or none of the lives of most people is spent being a juror in a murder trial. But the time that is so spent is quite significant. And the situation is an interesting one, raising many general issues that reach way beyond the trial. I hope that you will be able to see how many of the decisions you commonly face are very similar to those the jury had to make, and thus how significant features of the example apply to your own situation. For example, every day you have to decide whether someone is a credible source on a topic. You have to identify an assumption made by a friend, partner, or associate. You need to ask probing questions and to clarify what someone is saying. We jurors had to do all these things. There are many other similarities.  
像所有的例子一样，陪审团的例子在某种程度上是独特的，即使是在一场谋杀审判中也是如此。大多数人的生活中很少或根本没有时间担任谋杀审判的陪审员。但是所花费的时间是相当重要的。而且这种情况是有趣的，引发了许多超越审判范围的一般问题。我希望你能够看到，你通常面临的许多决策与陪审团所做的决策非常相似，以及这个例子的重要特征如何适用于你自己的情况。例如，每天你都需要决定某人是否是某个话题上的可信来源。你需要找出朋友、伴侣或同事所做的假设。你需要提出深入的问题并澄清某人的说法。我们陪审员必须做所有这些事情。还有许多其他相似之处。­uation. For example, every day you have to decide whether someone is a credible

Natural Language  
自然语言

To the extent feasible, everyday language has been used and technical terms have been kept to a minimum. In particular, where deductive logic is discussed, I have tried to adapt the basic ideas oflogic to our natural language, instead of the reverse, as is often done (with such words as *some, if,* and *or).[[2]](#footnote-2)*

Fallacies

There are a large number of terms (such as circular argument) that are used to identify fallacious thinking. Knowing them can be helpful because they can save time in communicating with those people who know them, and because they are reminders of common errors that people make. They are dangerous, though. They can easily be used superficially, and can intimidate people who do not know them. Furthermore, in some cases, a fallacy term can apply even though the thinking is not fallacious. An example is appeal to authority. Often, appeals to authority are perfectly appropriate. Much of what we know is from authorities. When we cite a source in a research paper, we are appealing to an authority, and are often justified in doing so.  
尽量使用日常语言，尽量减少技术术语。特别是在讨论演绎逻辑时，我试图将逻辑的基本思想适应我们的自然语言，而不是反过来，这样常常被做到（使用一些诸如某些，如果，和或等词语）[3]。谬误有很多术语（如循环论证），用于识别错误思维。了解它们可以帮助我们与那些了解这些术语的人进行更高效的交流，并提醒我们常见的错误。然而，它们也是危险的。它们很容易被肤浅地使用，并且可能会让不了解它们的人感到恐惧。此外，在某些情况下，尽管思维并不错误，但谬误术语仍然可以适用。一个例子是权威诉求。通常，对权威的诉求是完全合适的。我们所知道的很多都来自权威。当我们在研究论文中引用来源时，我们就是在诉诸权威，并且通常是有正当理由的。­tify fallacious thinking. Knowing them can be helpful because they can save time in communicating with those people who know them, and because they are reminders

The treatment of these terms in this book is in accord with what I have just said about them. Beware of fallacy labels and use them with discretion.  
这本书中对这些术语的处理与我刚才所说的一致。小心谬误标签，并谨慎使用它们。

Definition  
定义

­tion, and content. All labels for definitions, such as The system for categorizing and discussing definitions presented here makes sense of what otherwise seems to be a morass. Definitions have three dimensions: form, function, and content. All labels for definitions, such as persuasive definition, fit into this structure in a way that makes sense, facilitates clarity, and helps avoid equivocation.   
这里提供的用于分类和讨论定义的系统使得原本混乱不堪的内容变得有条理。定义有三个维度：形式、功能和内容。所有用于定义的标签，比如说说服性定义，都以一种有意义的方式融入到这个结构中，有助于清晰表达，并避免歧义。

Assumption Identification  
假设识别

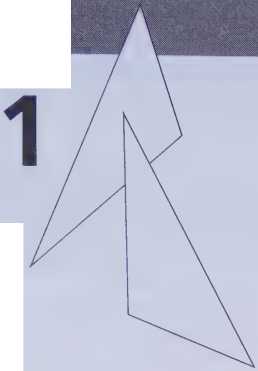
­cation system. But most treatments are theoretically Identifying assumptions is a standard goal in critical thinking at all levels of our education system. But most treatments are theoretically and practically confusing. The treatment presented here is based on an approach I developed a number of years ago.[footnoteRef:4] It has been subjected to scrutiny by many colleagues and has received their approval.  
识别假设是我们教育系统各个层次的批判性思维的标准目标。但是大多数处理方式在理论和实践上都令人困惑。这里介绍的处理方式是基于我多年前开发的一种方法。[4] 它经过了许多同事的审查，并得到了他们的批准。[[3]](#footnote-3)

Application to Specific Subject Matter Concerns  
特定主题事项申请

This book provides a general approach to critical thinking. In each field of operation or study, there are additional things to consider. But I have found that the ideas contained here are widely applicable in all subject matter areas with which I am familiar. Of course, the ideas are not a substitute for being well-informed in an area. That is necessary as well, as are many other things, such as self-confidence. There are many necessary ingredients to successful operation in life. Critical thinking is one of them.  
这本书提供了一种普遍的批判性思维方法。在每个操作或研究领域中，都有其他需要考虑的事情。但我发现这里所包含的观点在我熟悉的所有学科领域都是广泛适用的。当然，这些观点并不能替代对某个领域的充分了解。这也是必要的，还有许多其他因素，比如自信心。成功生活中有许多必要的要素。批判性思维就是其中之一。­tained here are widely applicable in all subject matter areas with which

­ple for their help in formulating, writing, and producing this book: Ted Bolen, Anthony Calcara, Helen Ennis, Sean Ennis, Susan Finsen, Ray Langley, James Macmillan, Richard Morrow, Stephen Norris, Carol Peschke, William Rapaport, Antonio Rodriguez, Ilene Sanford, Michael Scriven, Anita Silvers, Thomas Tomko, Frances Wagner, Bruce Warner, and my many unnamed wonderful and thoughtful critical thinking students over the years.I wish you success in critical thinking, and ask you to join me in thanking these people for their help in formulating, writing, and producing this book: Ted Bolen, Anthony Calcara, Helen Ennis, Sean Ennis, Susan Finsen, Ray Langley, James Macmillan, Richard Morrow, Stephen Norris, Carol Peschke, William Rapaport, Antonio Rodriguez, Ilene Sanford, Michael Scriven, Anita Silvers, Thomas Tomko, Frances Wagner, Bruce Warner, and my many unnamed wonderful and thoughtful critical thinking students over the years.  
祝愿你在批判性思维方面取得成功，并请你与我一起感谢以下人员对本书的制定、撰写和制作所提供的帮助：Ted Bolen、Anthony Calcara、Helen Ennis、Sean Ennis、Susan Finsen、Ray Langley、James Macmillan、Richard Morrow、Stephen Norris、Carol Peschke、William Rapaport、Antonio Rodriguez、Ilene Sanford、Michael Scriven、Anita Silvers、Thomas Tomko、Frances Wagner、Bruce Warner以及这些年来许多未具名的出色而深思熟虑的批判性思维学生们。

ROBERT H. ENNIS



**CHAPTER**

Introduction: Decision and Argument  
介绍：决策与论证

How can you decide what to believe and what to do?  
你如何决定相信什么和做什么？

Should you believe everything you hear and read? Should you even believe everything you read in your local newspaper? Obviously not. Which of the things that you hear and read should you believe? Do you have a guess, or a theory, or an idea about something? Should you believe it? How can you investigate to find out? In short, how can you decide what to believe?  
你应该相信你听到和阅读到的一切吗？甚至你在当地报纸上阅读到的一切都应该相信吗？显然不是。你应该相信你听到和阅读到的哪些事情？你有猜测、理论或者对某事的想法吗？你应该相信它吗？你如何进行调查来找出真相？简而言之，你如何决定相信什么？

Suppose you are trying to decide how to vote, what kind of orange juice to buy (if at all), whether to see a doctor, or whether to take a class. How can you decide what to do?  
假设你正在决定如何投票，是否购买橙汁（如果购买的话），是否去看医生，或者是否上课。你该如何决定要做什么？

The primary purpose of this book is to help you decide in a reasonable way what to believe and what to do. Sometimes decisions are easy. Sometimes they are difficult. Sometimes you have no way to decide with any confidence, and you just have to do the best you can. Fortunately, there are guidelines that are helpful in making decisions.  
这本书的主要目的是帮助您以合理的方式决定要相信什么，要做什么。有时候决策很容易，有时候很困难。有时候您无法有任何信心地做出决策，只能尽力而为。幸运的是，有一些指导原则可以帮助您做出决策。

This book is going to help you learn to use some of the most important of these guidelines. Do not expect the guidelines to do the whole job for you. In decisions about what to believe and do, you also need reliable information and understanding of the topic or field of study. Then, after considering all these things, you must make a reasonable judgment. The guidelines and the facts do not automatically produce an answer.  
这本书将帮助您学习使用其中一些最重要的准则。不要指望准则能为您完成全部工作。在决定要相信和做什么时，您还需要可靠的信息和对该主题或研究领域的理解。然后，在考虑所有这些因素之后，您必须做出合理的判断。准则和事实并不会自动产生答案。

Other people are often involved. You engage in discussions with them in order to gather information, ideas, and understanding for your own decisions. You ask questions. Sometimes you engage in discussions with others simply to persuade them about something. Sometimes you need to present your ideas to others so that they can make good decisions. These things are not easy to do well. This book attempts to advise you about these ways of interacting with other people. Again, these are only guidelines. The rest is up to you.  
其他人经常参与其中。你与他们进行讨论，以便收集信息、想法和理解，为自己的决策做准备。你会提问。有时你与他人进行讨论只是为了说服他们某件事情。有时你需要向他人提出自己的想法，以便他们能做出明智的决策。这些事情并不容易做到好。本书试图为你提供关于与他人互动的方法的建议。再次强调，这些只是指导方针。其余的取决于你自己。

­You depend on your beliefs, whether you are deciding what to do or deciding what to believe. Decisions about belief, then, are fundamental. A key feature in deci sions about belief is often an argument. You will be examining others’ arguments and developing your own. So let us start by looking at arguments.  
你依赖于你的信念，无论是决定做什么还是决定相信什么。关于信念的决策是基础性的。在关于信念的决策中，一个关键特征通常是一个论证。你将会审查他人的论证并发展你自己的。所以让我们从论证开始。

Argument  
争论

Basically, an argument is an attempt to prove or establish a conclusion. It has two major parts: a conclusion and the reason or reasons offered in support of the conclusion. The general idea is that if the conclusion of an argument is well-supported by good reasons, you should probably believe it. An argument in this sense is not a hostile disagreement (although it could be part of one).  
基本上，一个论证是试图证明或建立一个结论的尝试。它有两个主要部分：一个结论和支持该结论的理由或原因。总的想法是，如果一个论证的结论得到了良好理由的支持，你应该可能相信它。在这个意义上，一个论证并不是敌对的争论（尽管它可能是其中的一部分）。­clusion. The general idea is that if the conclusion of an argument is well-supported

­one The conclusion in an argument is the part that the arguer is trying to get someone to believe. A word of warning: By conclusion I do not mean the ending of a story or set of events. The conclusion is whatever someone is trying to prove or establish.  
在一个论点中，结论是辩论者试图让某人相信的部分。警告一句：所谓结论，并不是指一个故事或一系列事件的结尾。结论是指某人试图证明或建立的内容。

If there is no conclusion, there is no argument. Similarly, if there is no reason given, there is no argument.  
如果没有结论，就没有争论。同样地，如果没有给出理由，就没有争论。

The following is an argument in this logical sense of the word:  
以下是在逻辑意义上的一个论证。

*My client is innocent of the charge of murder because she was defending herself against an attack.  
我的客户对谋杀指控是无辜的，因为她是在自卫时进行的防卫。*

This is an argument because there is a conclusion (italicized here) and a reason offered in support of the conclusion. The following similar passage is basically the same argument, with the reason and conclusion in opposite order:  
这是一个争论，因为有一个结论（在这里用斜体标出）和一个支持结论的理由。下面的类似段落基本上是相同的争论，只是理由和结论的顺序相反。

She was defending herself against an attack, so my client is innocent of the charge of murder.  
她正在为自己进行辩护，所以我的客户对谋杀指控是无罪的。

Again, there is a conclusion and a reason offered in support of the conclusion. The order of the reasons(s) and conclusion does not matter.  
再次，有一个结论和一个支持该结论的理由。理由（们）和结论的顺序无关紧要。

The following is not an argument in this logical sense:  
以下不是逻辑意义上的论证。

You are a fool.  
你是个傻瓜。

I’m not.  
我不是。

You are.  
你是。

Each of the speakers is offering a conclusion (“You are a fool” and “I’m not”), but there is no argument here (in the logical sense of argument} because there are no reasons offered.  
每个发言者都提出了一个结论（你是个傻瓜，而我不是），但这里没有论证（从逻辑上讲的论证），因为没有提供任何理由。

Check-Ups  
体检

­lems. They will help you to review and check your understanding. It is very important that you do these and check your answers against the suggested answers at the end of the chapter. If your answers disagree with the suggested ones, think twice before you decide that yours is wrong; there can often be more than one reasonable answerSo that you can get feedback and practice, there will be frequent questions and problems. They will help you to review and check your understanding. It is very important that you do these and check your answers against the suggested answers at the end of the chapter. If your answers disagree with the suggested ones, think twice before you decide that yours is wrong; there can often be more than one reasonable answer to a question. If one of your answers is different from the one suggested, then either try to satisfy yourself that yours really is all right or try to figure out why it is not.  
为了让你能够获得反馈和练习，会有频繁的问题和问题。它们将帮助你复习和检查你的理解。非常重要的是，你要做这些，并将你的答案与章节末尾的建议答案进行对照。如果你的答案与建议的答案不一致，在你认定自己的答案错误之前，请三思；一个问题往往可以有多个合理的答案。如果你的答案与建议的答案不同，要么试着让自己相信你的答案是正确的，要么试着找出为什么它不是正确的。

Sometimes the check-up and practice items involve controversial issues. I do not necessarily agree (or disagree) with the opinions or arguments in the examples in this book.  
有时候检查和练习项目涉及有争议的问题。我不一定同意（或不同意）这本书中的例子中的观点或论点。

Some of the check-up items are true-false. Generally, these serve as a broad review of the main points. If the statement is false, you will also be asked to revise the statement to make it true. Wherever possible, do this in an interesting way that shows that you understand what is wrong. Try to avoid just inserting the word not or some similar device. For example, the first one reads as follows:  
一些检查项目是真假题。通常，这些题目作为对主要要点的广泛复习。如果陈述是错误的，您还将被要求修改陈述以使其变为正确。在可能的情况下，请以一种有趣的方式进行修改，以显示您理解了何处出错。尽量避免只是插入“不”或类似的词。例如，第一个题目的内容如下：

1:1 As defined here, an argument is a hostile disagreement.  
1:1 根据这里的定义，争论是一种敌对的不同意。

This is false, but should not be changed to read as follows:  
这是错误的，但不应该被改为以下内容：

1:1 As defined here, an argument is not a hostile disagreement.  
1:1 根据此处定义，一个论点并不是敌对的争论。

A change like this does not give a strong enough indication of understanding. Rather, it should be changed to read something like the following:  
这样的改变并不能明确地表明理解。相反，应该改为类似以下的内容：

1:1 As defined here, an argument is an attempt to prove or establish a conclusion.  
1:1 根据此处的定义，论证是试图证明或建立一个结论的尝试。

This sort of revision more clearly shows that you understand.  
这种修订更清楚地表明你理解了。

Do not give in to the temptation to look up the suggested answer before you try to figure it out. Try it first, then look it up. Also, resist the temptation to abandon your own answer automatically when it is different from the one given. Make sure that you know a good reason before you change your answer. Yours might be just as good as the suggested answer—perhaps better.  
不要在尝试弄清楚之前就被查看建议答案的诱惑所左右。先自己尝试一下，然后再查看答案。同时，要抵制当你的答案与给出的答案不同时自动放弃自己答案的诱惑。确保在改变答案之前有一个充分的理由。你的答案可能和建议的答案一样好，甚至更好。­

In some cases, answers are not supplied. This is to help you think independently while still giving vou the help you can get from seeing the acceptable answers that are supplied.  
在某些情况下，没有提供答案。这是为了帮助您独立思考，同时仍然能从提供的可接受答案中获得帮助。

Often, the last item in a series is more difficult, sometimes asking you to think ahead—to go beyond the material already presented; for example, see Item 1:13 in the first set of check-up items. These items are intended to challenge you and to help you think critically about thinking critically!  
通常，系列中的最后一项更加困难，有时需要你提前思考——超越已经呈现的材料；例如，参见第一组检查项目中的项目1:13。这些项目旨在挑战你，帮助你批判性地思考批判性思维！

Check-Up 1A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

1:1 As defined here, an argument is a hostile disagreement.  
1:1 根据这里的定义，争论是一种敌对的不同意。

1:2 The main purpose of this book is to help you decide reasonably what to believe and do.  
本书的主要目的是帮助您合理地决定要相信和做什么。

­sions about what to believe and do.1:3 This book gives some advice for interacting with other people on decisions about what to believe and do.   
这本书提供了一些建议，用于与他人互动并做出关于信仰和行为的决策。

1:4 If a person follows the guidelines offered in this book exactly as they are written, that person does not need to attend to the irksome details in the situation calling for the thinking.  
如果一个人完全按照本书中提供的准则去行事，那么他就不需要关注引发思考的繁琐细节。

1:5 Something can be both an argument in the logical sense and part of a dispute.  
1:5 有些东西既可以是逻辑意义上的论据，也可以是争议的一部分。

Short Answer  
简答题

For each of the following, write A if it is an argument (in the logical sense of the word argument). Write N if it is not. Do not try to judge whether an argument is a good one. Just decide whether each item is an argument at all. If you need to add a word of explanation, do so.  
对于以下每个问题，如果它是一个论证（从逻辑意义上来说），请写A。如果不是，请写N。不要试图判断一个论证是否好。只需决定每个项目是否是一个论证。如果需要添加解释，请这样做。

1:6 Mayor Martin will not be reelected because she has raised taxes.  
1:6 马丁市长将不会连任，因为她提高了税收。

1:7 Because zoning interferes with freedom, it is unjust.  
1:7 因为分区干涉了自由，所以是不公正的。

1:8 It is absolutely clear that the future holds more promise than the past.  
1:8 未来比过去有更多的希望。

1:9 Although the sun is shining now, it will be raining before nightfall.  
虽然太阳现在正照耀，但夜幕降临之前会下雨。

1:10 Whenever the streets are wet, they are slippery, so you should drive carefully.  
每当街道潮湿时，它们都很滑，所以你应该小心驾驶。

1:11 “Turn down the volume, please.” “Why should I?” “Don’t argue with me!”  
请把音量调低。为什么要调低？不要和我争论！

1:12 The streets are wet. Therefore, they are slippery.  
1:12 街道是湿的。因此，它们是滑的。

1:13 Whenever the streets are wet, they are slippery.  
每当街道湿润时，它们就会变得滑溜。

Six Basic Elements in Critical Thinking: The FRISCO Approach  
批判性思维中的六个基本要素：FRISCO方法

It helps to have a mental checklist for critical thinking. The one recommended here has six basic elements: Focus, Reasons, Inference, Situation, Clarity, and Overview. The first letters of these words make the easy-to-remember acronym FRISCO.  
有一个关键思维的心智清单会很有帮助。这里推荐的清单有六个基本要素：焦点、理由、推理、情境、清晰度和概览。这些单词的首字母组成了易于记忆的缩写词FRISCO。

Sometimes you will go through these elements in order when thinking critically, but often you will skip around—and back and forth. In any case, you can use these six elements as a checklist to make sure that you have done the most important things. Generally, you should start by working on the focus and end with an overview, but you should do these two things at other times, too. Often, you should remind yourself of and reconsider the focus at points in your thinking other than the beginning. Furthermore, you should continually do the reviewing called for in the overview step. In later chapters, I shall say more about each of these elements, but my purpose here is just to give you an introduction to FRISCO, using a very short argument as an example.  
有时候在批判性思维时，你会按顺序经历这些要素，但通常你会跳来跳去，来回穿梭。无论如何，你可以使用这六个要素作为清单，确保你已经完成了最重要的事情。一般来说，你应该从关注点开始，并以概述结束，但你也应该在其他时间做这两件事。通常情况下，你应该在思考的过程中的某些时刻提醒自己并重新考虑关注点。此外，你应该不断进行概述步骤中所要求的复习。在后面的章节中，我会更详细地介绍这些要素，但我在这里的目的只是给你一个对FRISCO的介绍，以一个非常简短的论证作为例子。­ning. Furthermore, you should continually do the reviewing called for in the overview step. In later chapters, I shall say more about each of these elements, but my purpose here is just to give you an introduction to FRISCO, using a very short argument as an example.

Focus  
聚焦

The first thing to do in approaching any situation is to figure out the main point, issue, question, or problem. Without knowing this (the focus), you will waste much of your time. Ask yourself such questions as “What is going on here?,” “What really matters here?,” “What is this all about?,” “What is this person trying to prove?,” and “What am I trying to prove?”—to make sure that you know what to focus on. Sometimes there are several features on which to focus. Be ready for that.  
处理任何情况的第一件事是找出主要观点、问题、疑问或难题。如果不知道这一点（重点），你将浪费很多时间。问问自己这样的问题：这里发生了什么？这里真正重要的是什么？这一切是关于什么的？这个人试图证明什么？我试图证明什么？- 确保你知道要关注什么。有时候可能有几个要关注的特点。对此要有准备。

In an argument, the focus is ordinarily the conclusion. Consider the following argument, given earlier as an example:  
在一个争论中，重点通常是结论。考虑以下争论，之前作为一个例子给出：

­self against attack.My client is innocent of the charge of murder because she was defending herself against attack.  
我的客户对谋杀指控是无辜的，因为她是在自卫时进行的防御。

The conclusion—and the focus—is “My client is innocent of the charge of murder.” This is the conclusion because this is the point that the speaker (the defense attorney in a murder trial) was trying to get the jury to believe. Unless you know where the argument is going, it is difficult to see how the pieces fit together and to decide whether, or how much, some part matters. So it is generally wise to try to identify the conclusion right away. (You will see that identifying the conclusion can sometimes be difficult^ although it might seem easy now.)

When you are offering an argument, make sure that you know and can state your conclusion. It is usually a good idea to begin your presentation by stating your conclusion.  
结论——以及重点——是我的客户无罪。这是结论，因为这是演讲者（一名在谋杀审判中担任辩护律师的人）试图让陪审团相信的观点。除非你知道论点的发展方向，否则很难看出各个部分如何相互关联，以及某个部分的重要性如何。因此，通常最好立即尝试确定结论。（你会发现，有时候确定结论可能会很困难，尽管现在可能看起来很容易。）当你提出一个论证时，确保你知道并能陈述你的结论。通常最好在演讲开始时陈述你的结论。

Reasons  
原因

­ment we have been considering, there is only one reason given: “She was defending herself against attack.” It alone is offered in direct support of the conclusion.You should also try to get a fairly good idea of the reason or reasons. You must know the reason(s) offered in support of a conclusion and decide whether the reasons are acceptable before you can make a final judgment about an argument. In the argument we have been considering, there is only one reason given: “She was defending herself against attack.” It alone is offered in direct support of the conclusion.  
你还应该努力了解原因或原因的大致情况。在你对一个论点做出最终判断之前，你必须了解支持结论的原因，并决定这些原因是否可接受。在我们所考虑的论证中，只提供了一个原因：她是在自卫。它是直接支持结论的唯一原因。

­sons. When you are making a decision, you should look for reasons for and against deciding in a certain way (pro and con reasons). Sometimes, when you are investi­gating something or doing an experiment, you are looking for evidence, and the evi­dence will become a reason or reasons for your conclusion. (You still must judge whether to accept the reasons because they are a basis for making a decision.) Lastly, when you are reviewing your own argument, you should identify and judge the acceptability of your reasons. All of these activities of argument formulation come under this second element, Reasons.When you are formulating your own argument, you must offer your own reasons. When you are making a decision, you should look for reasons for and against deciding in a certain way (pro and con reasons). Sometimes, when you are investigating something or doing an experiment, you are looking for evidence, and the evidence will become a reason or reasons for your conclusion. (You still must judge whether to accept the reasons because they are a basis for making a decision.) Lastly, when you are reviewing your own argument, you should identify and judge the acceptability of your reasons. All of these activities of argument formulation come under this second element, Reasons.  
当你制定自己的论点时，你必须提供自己的理由。当你做决定时，你应该寻找支持和反对以某种方式做出决定的理由（正反理由）。有时候，当你调查某事或进行实验时，你在寻找证据，而这些证据将成为你结论的理由（或理由）。（你仍然必须判断是否接受这些理由，因为它们是做出决定的基础。）最后，当你审查自己的论点时，你应该确定和评判你的理由的可接受性。所有这些论证制定的活动都属于第二个要素，理由。

Chapter 2, which deals with argument analysis, is concerned with identifying the reasons other people have and seeing their role in a total argument. Chapters 3 and 4, which deal with the credibility of sources and with observation, are concerned with deciding whether two major types of reasons are acceptable.  
第二章主要讨论论证分析，关注于识别他人的理由并了解其在整个论证中的作用。第三章和第四章主要涉及来源的可信度和观察，关注于判断两种主要类型的理由是否可接受。

­ney, was not true and we decided that the argument was not a good one. But realize that the fact that an argument is bad does not prove the conclusion to be false. She might have been innocent for other reasons, even though she was not defending her­self against attack. In fact, for other reasons, the jury did find her not guilty of murder.I was on the jury that had to judge the reason “She was defending herself against attack.” Most of the jurors believed that this reason, as offered by the defense attorney, was not true and we decided that the argument was not a good one. But realize that the fact that an argument is bad does not prove the conclusion to be false. She might have been innocent for other reasons, even though she was not defending herself against attack. In fact, for other reasons, the jury did find her not guilty of murder.   
我曾经是一个陪审团成员，需要判断她为自卫而辩护的理由。大多数陪审员认为，辩护律师提出的这个理由是不真实的，我们决定这个论点不成立。但请注意，一个论点不好并不意味着结论是错误的。她可能因为其他原因是无辜的，即使她没有为自卫辩护。事实上，出于其他原因，陪审团确实判她无罪。

Inference  
推理

­clusion? This is a different question from the question under Suppose that the reason were true. Would it have been sufficient to establish the conclusion? This is a different question from the question under R, “Is the reason acceptable?” The question under the Zin FRISCO is whether the reason, if it is acceptable, would support the conclusion, and how strongly. In the jury situation, it seemed to me that the reason, even though it was not acceptable, would have been sufficient; that is, that the inference is a good one. To say that an inference is a good one is to say that the step from the reason(s) to the conclusion is a reasonable one; in other words, that it is one we are entitled to make. In still other words, the reasoning (though not necessarily the reason) is acceptable.  
假设原因是真的。这是否足以证明结论？这是一个不同的问题，与R下的问题不同，原因是否可接受？Zin FRISCO下的问题是，如果原因可接受，它是否支持结论，以及支持程度如何。在陪审团的情况下，我觉得即使原因不可接受，它也足够；也就是说，推理是正确的。说一个推理是正确的，就是说从原因到结论的步骤是合理的；换句话说，我们有权做出这样的推理。换句话说，推理（虽然不一定是原因）是可接受的。­able?” The question under the Zin

­sons). We must do both. We must judge whether the reason(s) are acceptable and we must also judge whether the reason(s) would be sufficient to establish the con­clusion if the reason(s) are acceptable (that is, we also have to judge the inference). I have said this in different ways because it is a difficult distinction until you see it.Judging the inference is different from judging the acceptability of the reasons). We must do both. We must judge whether the reason(s) are acceptable and we must also judge whether the reason(s) would be sufficient to establish the conclusion if the reason(s) are acceptable (that is, we also have to judge the inference). I have said this in different ways because it is a difficult distinction until you see it.  
判断推理与判断理由的可接受性是不同的。我们必须同时进行。我们必须判断理由是否可接受，同时也必须判断如果理由可接受，它们是否足以支持结论（也就是我们还必须判断推理）。我以不同的方式表达了这一点，因为在看到它之前，这是一个困难的区分。

­native to this conclusion?” Applied to our sample argument, the thinking might go like this: “Suppose that it is true that she was defending herself against an attack. An alter­native to the conclusion is that she was still guilty. Is this plausible, given that we accept the reason?” I thought not, but it was still important to consider that alterna­tive. It would be plausible, by the way, if the attack were merely a verbal attack. Often, good alternatives go unnoticed if we do not make an effort to find them.Although we shall be looking in more detail at the process of judging different kinds of inferences, one good general question to ask is this: “Is there a plausible alternative to this conclusion?” Applied to our sample argument, the thinking might go like this: “Suppose that it is true that she was defending herself against an attack. An alternative to the conclusion is that she was still guilty. Is this plausible, given that we accept the reason?” I thought not, but it was still important to consider that alternative. It would be plausible, by the way, if the attack were merely a verbal attack. Often, good alternatives go unnoticed if we do not make an effort to find them.  
虽然我们将更详细地研究不同推理类型的判断过程，但一个好的总体问题是：是否存在一个合理的替代结论？应用于我们的样本论证，思考可能是这样的：假设她是在自卫中，那么另一个结论是她仍然有罪。考虑到我们接受的理由，这个替代结论是否合理？我认为不合理，但考虑到这个替代方案仍然很重要。顺便说一句，如果攻击只是口头攻击，那么这个替代方案是合理的。通常，如果我们不努力去寻找，好的替代方案往往会被忽视。

­egy. One of the jurors concluded that the defendant was guilty because it was agreed that it had not been proved beyond a reasonable doubt that she was innocent. But an alternative conclusion was that neither her guilt nor her innocence had been proven beyond a reasonable doubt. It was very helpful to point out this fact to that juror.Because the alternative I suggested is so obvious, the strategy of looking for alternatives might not seem especially helpful in this argument. But there was another argument in that situation where looking for alternatives was a very important strategy. One of the jurors concluded that the defendant was guilty because it was agreed that it had not been proved beyond a reasonable doubt that she was innocent. But an alternative conclusion was that neither her guilt nor her innocence had been proven beyond a reasonable doubt. It was very helpful to point out this fact to that juror.  
因为我提出的替代方案太明显了，所以在这个论点中寻找替代方案的策略似乎并不特别有帮助。但在那种情况下，寻找替代方案是一种非常重要的策略。其中一位陪审员得出结论，被告有罪，因为大家一致认为没有证据能够证明她的无罪。但另一种可能的结论是，无论她有罪还是无罪，都没有被证明超出合理怀疑的范围。向那位陪审员指出这个事实非常有帮助。

­cation and appraisal of such assumptions is part of the process of judging an inference because inferences usually depend on unstated assumptions. Identifying unstated assumptions is discussed in Chapter 7.Look at this juror’s comment in a different way: through the identification of an unstated assumption. The juror apparently was assuming that a defendant is guilty unless proven innocent. He was wrong about this, and we told him so. The identification and appraisal of such assumptions is part of the process of judging an inference because inferences usually depend on unstated assumptions. Identifying unstated assumptions is discussed in Chapter 7.  
以一种不同的方式看待这位陪审员的评论：通过识别一个未明示的假设。这位陪审员显然假设被告有罪，除非被证明无罪。他对此是错误的，我们告诉了他。识别和评估这样的假设是判断推理过程的一部分，因为推理通常依赖于未明示的假设。识别未明示的假设在第7章中有讨论。

Unfortunately, the word inference has a confusing feature. It is ambiguous. That is, it has more than one meaning. Sometimes the word inference is used to mean conclusion, so that the conclusion of an argument would then be an inference. In our example, the proposition “My client is innocent of the charge of murder” is an inference in the conclusion sense of the word inference. Usually, however, the word inference is used as I am using it here: to refer to the step in going from the reason(s) to the conclusion. In this book, the word is used in the “step” sense (the reasoning sense) rather than the “conclusion” sense.   
不幸的是，推理这个词有一个令人困惑的特点。它是模棱两可的。也就是说，它有多个意思。有时候，推理这个词被用来表示结论，因此一个论证的结论就是一个推理。在我们的例子中，命题“我的客户对谋杀指控是无辜的”是推理这个词的结论意义上的一个推理。然而，通常情况下，推理这个词被用作我在这里使用的方式：指的是从理由到结论的步骤。在这本书中，这个词是以步骤意义（推理意义）而不是结论意义来使用的。*­clusion,*­ence in the conclusion sense of the word *­ence*

­ing distinctions in order to avoid confusion. That is, I drew a process-product dis­tinction between two senses of the word Incidentally, I have just exemplified an important critical thinking ability: drawing distinctions in order to avoid confusion. That is, I drew a process-product distinction between two senses of the word inference: inference as a process (the “step” sense) and inference as a product (the “conclusion” sense). Process-product distinctions are often helpful, but the more general point is that drawing distinctions can often help to clear up confusions and disagreements.  
顺便说一下，我刚刚举例说明了一种重要的批判性思维能力：通过区分来避免混淆。也就是说，我在“推论”这个词的两个意义上进行了过程-产品的区分：推论作为一个过程（步骤的意义）和推论作为一个产物（结论的意义）。过程-产品的区分通常是有帮助的，但更一般的观点是，通过区分往往可以帮助澄清混淆和分歧。­tions are often helpful, but the more general point is that drawing distinctions can

In judging inferences, we take into account the other parts of FRISCO. The Focus is important because it is the product of the inference. The Reasons are important because the inference starts with them. The Situation is important because it determines a number of important factors to consider in judging an inference. As you will see, the trial situation had a bearing on the kind of inferences one can make. You will also see that the meaning of the words used (particularly the word attack) has a bearing on the inference that can be made. All of this illustrates the interdependence of the parts of FRISCO.  
在判断推理时，我们考虑FRISCO的其他部分。焦点很重要，因为它是推理的产物。原因很重要，因为推理始于它们。情境很重要，因为它决定了在判断推理时需要考虑的许多重要因素。正如您将看到的，审判情境对人们可以做出的推理类型产生了影响。您还将看到，所使用的词语的含义（特别是攻击这个词）对可以做出的推理产生了影响。所有这些都说明了FRISCO各部分之间的相互依赖关系。­tant because the inference starts with them. The Situation is important because it determines a number of important factors to consider in judging an inference. As you will see, the trial situation had

Situation  
情况

When thinking is focused on belief and decision, it takes place in some broad situation that gives it significance and provides some of the rules. The situation includes the people involved and their purposes, histories, allegiances, knowledge, emotions, prejudices, group memberships, and interests. It includes the physical environment and the social environment, which in turn includes families, governments, institutions, religions, employment, clubs, and neighborhoods. These things are relevant not only to the significance of the thinking activity and some of the rules that guide it, but also to the meaning of what the thinker is doing or judging.  
当思考集中在信念和决策上时，它发生在某种广泛的情境中，这给予它重要性并提供一些规则。情境包括参与其中的人们及其目的、历史、忠诚、知识、情感、偏见、群体成员资格和利益。它还包括物理环境和社会环境，而社会环境又包括家庭、政府、机构、宗教、就业、俱乐部和社区。这些事物不仅与思考活动的重要性和一些指导它的规则有关，还与思考者所做或判断的意义有关。­­

A crucial feature of the courtroom situation was that the burden of proof was on the State, not the defense attorney. The State had to prove its case beyond a reasonable doubt. The defense attorney had to show only that his case was a reasonable possibility. That was all that he needed in order to show that the State had not proven its case beyond a reasonable doubt.  
法庭情况的一个关键特征是，举证责任在国家而不是辩护律师身上。国家必须以超出合理怀疑的证据证明自己的案件。辩护律师只需证明他的案件是一个合理的可能性。这就是他所需要的，以显示国家未能超出合理怀疑地证明自己的案件。­

The jurors in that situation needed to realize this difference. At first, some were tempted to hold the defense attorney to the same standard as the State’s attorney. An example was the juror who wanted to conclude that the defendant was guilty because the defense attorney had failed to prove beyond a reasonable doubt that she was innocent. We had to point out to him the crucial feature of the situation: The burden of proof was on the State. It was important for us to be aware of this feature of the situation.  
在那种情况下，陪审团需要意识到这个区别。起初，一些人倾向于将辩护律师与国家检察官置于同一标准下。一个例子是陪审团成员，他想得出被告有罪的结论，因为辩护律师未能证明被告无罪的事实超出合理怀疑的范围。我们不得不向他指出这个情况的关键特征：证明责任在国家。我们需要意识到这个情况的重要特征。­

Clarity  
清晰

When you write and speak, it is important to be clear in what you say. If others are not clear, try to get them to be clear. Make sure that you understand what they are saying.  
当你写作和说话时，清晰表达非常重要。如果别人不清楚，尽量让他们表达清楚。确保你理解他们在说什么。

Let us go back to the argument I was considering earlier. The defense attorney’s conclusion (“My client is innocent of the charge of murder”) and reason (“She was defending herself against attack”) seemed clear to me in that situation. But in judging the inference from the reason to the conclusion, it was important to know what he meant by the word attack. If he had meant the word broadly, so that verbal abuse counted as an attack, then I believe that the inference would not have been a good one. That is, the reason, if true, would not have been enough to establish the conclusion. Why should defending herself against verbal abuse justify the killing?  
让我们回到我之前考虑的论点。辩护律师的结论（我的客户对谋杀指控是无辜的）和理由（她是在自卫）在那种情况下对我来说似乎很明确。但是在判断从理由到结论的推论时，了解他对攻击一词的含义非常重要。如果他广义地理解这个词，以至于言语侮辱也算作攻击，那么我认为这个推论就不成立。也就是说，如果理由是真实的，那么它并不足以证明结论。为什么自卫对抗言语侮辱就能够合理化杀人呢？­­clusion. Why should defending herself against verbal abuse justify the killing?

On the other hand, if by the word attack he meant attempted physical violence, then the inference from reason to conclusion seems to be more plausible. So it is important to be clear about what he meant by the word if we are to judge fairly the inference from reason to conclusion, as well as to judge fairly the acceptability of the reason. In short, it is important to be clear about the meaning of terms and the way in which you and others are using them.  
另一方面，如果他所说的攻击是指企图使用肢体暴力，那么从理性到结论的推论似乎更有道理。因此，如果我们要公正地评判从理性到结论的推论，以及理性的可接受性，就很重要明确他所说的攻击是什么意思。简而言之，明确术语的含义以及你和他人使用这些术语的方式是很重要的。

­uct senses of the word I have just drawn a distinction between physical and verbal violence in order to avoid possible confusion. Earlier, I drew a distinction between the process and product senses of the word inference. Drawing distinctions that avoid confusion is an important feature of the C in FRISCO.  
我刚刚区分了身体和言语上的暴力，以避免可能的混淆。之前，我区分了推理这个词的过程和产物意义。避免混淆的区分是FRISCO中的一个重要特征。

A good clarity slogan is “Say what you mean, mean what you say, and try to get others to do so as well.” Four good questions to use in implementing this slogan are these: “What do you mean?,” “Will that confuse people who use the word(s) in a different way?,” “Can you give me an example?,” and “Can you give me a case that comes close, but is not an example?” More such questions are considered in Chapter 14. I urge you to be always ready to use these questions. You will find me asking and answering questions like these throughout the book. Can you remember a case that I have already offered that comes close, but is not an example?  
一个好的明确口号是说你想说的，做你说的，并试图让他人也这样做。实施这个口号的四个好问题是：你是什么意思？那会不会让使用这个词（词组）的人感到困惑？你能给我一个例子吗？你能给我一个接近但不是例子的案例吗？在第14章中还考虑了更多这样的问题。我敦促你随时准备使用这些问题。你会发现我在整本书中都会问和回答这些问题。你还记得我已经提供过一个接近但不是例子的案例吗？­ferent way?,” “Can you give me an example?,” and “Can you give me a case that comes close, but is not an example?” More such questions are considered in Chapter 14. I urge you to be always ready to use these questions. You will find me asking and answering questions like these throughout the book. Can you remember a case that I have already offered that comes close, but is not an example?

Overview  
概述

­uously as you go along. Monitor your own thinking. Even though you have made a judgment about the inference at the inference phase, you do it again here as part of checking everything.The sixth element in critical thinking, overview, calls for you to check what you have discovered, decided, considered, learned, and inferred. Put it all together and see whether it all still makes sense. This should be done not only at the end, but continuously as you go along. Monitor your own thinking. Even though you have made a judgment about the inference at the inference phase, you do it again here as part of checking everything.  
批判性思维的第六个要素，概述，要求你检查你所发现、决定、考虑、学习和推断的内容。将它们整合起来，看看是否仍然合理。这不仅需要在最后进行，而且需要在整个过程中持续进行。监控自己的思维。即使你已经对推断阶段的推断做出了判断，你也需要在这里再次进行检查。

The First Five Elements: FRISC  
第一五个元素：FRISC

­dent in my discussion of the defense attorney’s argument: The strength of the infer­ence depended on what the defense attorney was talking about when he used the word As I review the defense attorney’s argument in the Overview phase, I check each of the other five elements, the Focus, the Reason (and its acceptability), the Inference (and its acceptability), the Situation, and the Clarity of meaning of the terms and the attorney’s use of them. But note some ways in which these elements are interdependent in my discussion of the defense attorney’s argument: The strength of the inference depended on what the defense attorney was talking about when he used the word attack (I depends on C). The real focus depended on the situation (that is, ascertaining the focus depended on what we knew to be the defense attorney’s interest in that situation. F depends on S.) Whether the reason should be believed depends on what he meant by attack (R depends on C). Determining the actual inference depends on the nature of the reason (I depends on R). I could go on, but you get the idea. The important thing to see is that it is necessary to review and put all these interdependent things together by stepping back to overview your thinking.   
在概述阶段中，当我审查辩护律师的论点时，我会检查其他五个要素，即焦点、理由（及其可接受性）、推理（及其可接受性）、情境以及术语的意义和律师对其使用的清晰度。但请注意，在我讨论辩护律师的论点时，这些要素是如何相互依存的：推理的强度取决于辩护律师在使用攻击这个词时所指的是什么（I取决于C）。真正的焦点取决于情境（也就是说，确定焦点取决于我们所知道的辩护律师在那种情况下的兴趣。F取决于S）。理由是否应该被相信取决于他对攻击的意思（R取决于C）。确定实际推理取决于理由的性质（I取决于R）。我可以继续下去，但你明白我的意思。重要的是要看到，通过回顾并将所有这些相互依存的事物放在一起，以俯瞰你的思考是必要的。­est in that situation. F depends on S.) Whether the reason should be believed depends on what he meant by

Critical Thinking Dispositions  
批判性思维倾向

­ical thinkers are disposed to do the following:Another key feature of the overview is to make sure that you have been exemplifying the critical thinking dispositions mentioned in the Preface. In more detail, ideal critical thinkers are disposed to do the following:  
概述的另一个关键特点是确保您已经示范了前言中提到的批判性思维倾向。更详细地说，理想的批判性思维者倾向于做以下事情：

1. Care that their beliefs are true and that their decisions arc justified; that is, care to “get it right” to the extent possible, or at least care to do the best they can. This includes the interrelated dispositions to do the following:  
   关心他们的信念是否真实，他们的决定是否合理；也就是说，关心尽可能正确地做到，或者至少关心尽力而为。这包括以下相互关联的倾向：
2. Seek alternatives (hypotheses, explanations, conclusions, plans, sources), and be open to them.  
   寻求替代方案（假设、解释、结论、计划、来源），并对其持开放态度。
3. Endorse a position to the extent that, but only to the extent that, it is justified by the information available.  
   在信息可得之范围内，支持一个立场，但仅限于该立场是合理的。
4. Be well-informed.  
   了解清楚。
5. Seriously consider points of view other than their own.  
   认真考虑除自己之外的观点。
6. Represent a position honestly (theirs as well as others’). This includes the dispositions to do the following:  
   真实地代表一个立场（他们自己以及其他人的立场）。这包括以下倾向：
7. ­Be clear about the intended meaning of what is said, written, or otherwise communicated, seeking as much precision as the situation requires.  
   对所说、所写或以其他方式传达的意思要明确，根据情况需要追求尽可能准确的表达。

**B Determine, and maintain focus on, the conclusion or question.  
确定并保持对结论或问题的关注。**

1. Seek and offer reasons.  
   寻找并提供理由。
2. Take into account the total situation.  
   考虑整体情况。
3. Be reflectively aware of their own basic beliefs.  
   反思自己的基本信念。
4. ­Care about the dignity and worth of every person. This includes the dispositions to do the following:  
   关心每个人的尊严和价值。这包括以下行为倾向：
5. Discover and listen to others’ views and reasons.  
   发现并倾听他人的观点和原因。
6. Take into account others’ feelings and level of understanding, avoiding intimidating or confusing others with their critical thinking prowess.  
   考虑他人的感受和理解水平，避免用自己的批判性思维能力来威胁或困惑他人。­ing
7. Be concerned about others’ welfare.1  
   关心他人的福祉。

Actually, these dispositions are embedded in FRISCO, but it sometimes helps to make them more explicit. For example, the disposition to try to be well-informed

1. A few interpretive comments: Several of the dispositions (1 D, 2 E, and 3 A) contribute to being well-informed (1 C) but are separate dispositions in their own right. The expressed concern with true belief accepts the view that our concepts and vocabulary are constructed by us, but also that (to oversimplify somewhat) the relationships among the referents of our concepts and terms are not constructed by us. We can have true or false beliefs about these. The disposition (#3) to care about the dignity and worth of every person is not required of critical thinking by definition, but in order that it be humane. I call it a correlative disposition, by which I mean that, although this disposition is not part of the definition of critical thinking, it is desirable for all critical thinkers to have it, and the lack of it makes the critical thinking less valuable, or perhaps of no value at all.   
实际上，这些倾向已经内嵌在FRISCO中，但有时将它们更明确地表达出来会有所帮助。例如，试图了解情况的倾向1。一些解释性评论：其中几个倾向（1 D、2 E和3 A）有助于了解情况（1 C），但它们也是独立的倾向。对真实信念的关注接受了我们的概念和词汇是由我们构建的这一观点，但也认为（略微简化）我们概念和术语所指对象之间的关系并非由我们构建。我们可以对此持有真实或错误的信念。关心每个人的尊严和价值的倾向（＃3）并非定义上要求批判性思维具备的，但为了使其人道。我称之为相关倾向，我的意思是，尽管这种倾向不是批判性思维的定义的一部分，但对于所有批判性思维者来说，拥有这种倾向是可取的，而缺乏这种倾向会使批判性思维变得不那么有价值，或者可能毫无价值。­simplify somewhat) the relationships among the referents of ­­cal thinking less valuable, or perhaps of no value at all.

is needed for the evaluation of the reasons. The disposition to be open-minded and to seriously consider other points of view than one’s own is needed for judging the inference. However, a few of the dispositions are explicit in FRISCO. The disposition to be clear about the meaning of the words is explicitly stated under the C. The disposition to determine and maintain the focus is explicitly stated under the F In any case, make sure in the Overview that you are exemplifying these dispositions.  
用于评估原因的需要。在判断推论时，需要保持开放的心态并认真考虑其他观点。然而，在FRISCO中，有一些态度是明确的。在C下明确说明了对词义的清晰态度。在F下明确说明了确定和保持焦点的态度。无论如何，在概述中确保你在示范这些态度。­position

Writing a Position Paper Using  
使用撰写立场文件

Critical Thinking  
批判性思维

As you work your way through this book, there is a danger that you will understand the separate parts without being able to put them together and apply them to your own life. One way to help deal with this danger is for you to write a short position paper and revise it as you proceed through the book, making use of any new insights you acquire. Doing so will also give you an opportunity to use what you learn in an area that matters to you.  
当你阅读本书时，有一个危险，即你可能会理解其中的各个部分，但却无法将它们整合起来并应用到自己的生活中。解决这个危险的一种方法是你写一篇简短的立场论文，并在阅读本书的过程中进行修订，利用你所获得的任何新见解。这样做也将给你一个机会，在一个对你来说重要的领域运用你所学到的知识。

A position paper is an essay in which you state and defend a thesis by giving an argument. It is often called an argumentative essay. A thesis is an assertion consisting of a subject and predicate. It is the conclusion (the F in FRISCO). Your defense of the thesis should consist of reasons that are relevant to and support the conclusion. It should acknowledge, and respond to, opposing points of view and weaknesses in your argument. Furthermore, it should be sensitive to word meanings and should avoid verbal confusion and be well-organized. Lastly, it should evidence such critical thinking dispositions as sensitivity to the feelings and thoughts of others (especially your audience).  
立场文件是一篇论文，你在其中陈述并捍卫一个论点。它通常被称为辩论性论文。论点是由主语和谓语组成的断言。它是结论（FRISCO中的F）。你对论点的辩护应该包括与结论相关且支持结论的理由。它应该承认并回应对立观点以及你的论证中的弱点。此外，它应该对词义敏感，避免语言混淆，并且组织良好。最后，它应该表现出对他人感受和思想的敏感（尤其是你的观众），以展示批判性思维的倾向。

Organization  
组织

­ing a restatement of your thesis and a summary of your reasons. In a paper of any length, it is often helpful to the reader to provide headings (perhaps one for each major reason) and sometimes subheadings. Ordinarily, the reasons make up the longest part of the paper.Although there are many possible ways to organize a position paper, the simplest and usually most effective way in practical situations is to state your thesis early in the paper, sketch out your plan for the rest of the paper, give your reasons (and often your reasons for your reasons, if appropriate), and summarize your position, providing a restatement of your thesis and a summary of your reasons. In a paper of any length, it is often helpful to the reader to provide headings (perhaps one for each major reason) and sometimes subheadings. Ordinarily, the reasons make up the longest part of the paper.  
尽管有许多可能的方式来组织一篇立场论文，但在实际情况下，最简单且通常最有效的方式是在论文的早期阐述你的论点，概述你在论文中的计划，给出你的理由（如果合适的话，通常还包括你的理由的理由），并总结你的立场，提供对你的论点的重新陈述和理由的总结。在任何长度的论文中，为读者提供标题（也许是每个主要理由一个标题）和有时是副标题通常是有帮助的。通常，理由部分构成论文的最长部分。

­ments are there. Some people might feel that it is an imposition on their creativity and aesthetic sensibility to be forced into this mold. No doubt that is true in some circumstances, but if you cannot follow this approach effectively, then you probably cannot be effective in other approaches, such as leaving it up to your reader to figure out what your conclusion is.This simple approach is conducive to clarity and ensures that the major elements are there. Some people might feel that it is an imposition on their creativity and aesthetic sensibility to be forced into this mold. No doubt that is true in some circumstances, but if you cannot follow this approach effectively, then you probably cannot be effective in other approaches, such as leaving it up to your reader to figure out what your conclusion is.  
这种简单的方法有助于清晰，并确保主要要素存在。有些人可能会觉得被迫按照这种模式进行创作对他们的创造力和审美感受是一种限制。毫无疑问，在某些情况下这是真实的，但如果你不能有效地遵循这种方法，那么你可能在其他方法上也无法有效，比如让读者自己去理解你的结论。

­tation to a committee, a letter to the editor, an attempt to get an organization to take a stand, and an answer to an examination question that asks you to defend anEveryday practical situations in which this approach is useful include a presentation to a committee, a letter to the editor, an attempt to get an organization to take a stand, and an answer to an examination question that asks you to defend an approach or point of view. Although here I am talking about written arguments, this approach is also useful in such verbal situations as open meetings devoted to the discussion of controversial proposals and motions. I have seen so many confusing and thereby ineffective attempts to defend a position that I urge this simple basic approach for most practical situations. Just examine the letters to the editor of your local newspaper to find examples of confusion that could have been avoided. Making this routine habitual is especially useful in situations when you are under pressure because it frees your mind to think about the issues and what others are saying.  
每天实际情况中，这种方法很有用，包括向委员会做报告、给编辑写信、试图让一个组织采取立场，以及回答要求你为一种方法或观点辩护的考试题。虽然我在这里谈的是书面论证，但这种方法在开放会议上讨论有争议的提案和动议等口头情况中也很有用。我见过很多令人困惑、因此无效的为一个立场辩护的尝试，我建议在大多数实际情况下采用这种简单基本的方法。只需查看当地报纸的读者来信，就能找到可以避免的混乱的例子。将这种例行习惯化对于在压力下的情况尤其有用，因为它使你的思维能够关注问题和他人的观点。­cussion of controversial proposals and motions. I have seen so

Good organization for most people does not come automatically. Generally, I first write down as fast as I can the ideas I want to get across—in any order. Then I examine them to see what patterns among them might be found or constructed. Next, I develop a few major categories that together go somewhere and can be sequenced naturally. Then I try to fit the assorted ideas into one of the major categories and write down the result in the form of an outline. There is much trial and error about this. I try something, see how it goes, revise it, and try again. The result never is perfect, but some organization plans flow more smoothly and make more sense than others. Ultimately, you must select one and use it, subject to modification.  
大多数人来说，良好的组织并非自动而来。通常，我会尽快将我想要传达的思想按任意顺序写下来。然后我会检查它们，看看它们之间是否存在或可以构建的模式。接下来，我会制定几个主要类别，这些类别一起构成一个有序的整体。然后我会尝试将各种思想放入其中一个主要类别，并以大纲的形式写下结果。这其中会有很多试错。我尝试一些方法，看看效果如何，进行修改，然后再试。结果永远不会完美，但有些组织计划会更流畅，更有意义。最终，你必须选择一个并使用它，可以进行修改。­gories and write down the result in the form of an outline. There is much trial and error about this. I try something, see how it goes, revise it, and try again. The result never is perfect, but some organization plans flow more smoothly and make more sense than others. Ultimately, you must select one and use it, subject to modification.

Revision  
修订

Very few people write a good position paper on the first draft. Expect to revise and revise and revise your work if it is to be good. I often revise papers twenty times or more before they are published. You are reading at least the twentieth revision of this chapter.  
很少有人在第一稿上写出一篇好的立场文件。如果要写好，就要期望进行修订、修订和再修订。在它们被发表之前，我经常要对论文进行二十次或更多次的修订。你正在阅读的是至少第二十次修订的本章。

­son, defends a reason, states or responds to an opposing position, clarifies meaning, or offers background information to make the situation (S) clear.When you revise, ask yourself the following question about each sentence: Is this sentence relevant to my thesis? If the answer is negative, discard the sentence. Relevance is a broad criterion, however. A sentence can be relevant if it states a reason, defends a reason, states or responds to an opposing position, clarifies meaning, or offers background information to make the situation (S) clear.  
当你进行修订时，请问自己以下关于每个句子的问题：这个句子与我的论文相关吗？如果答案是否定的，请舍弃这个句子。然而，相关性是一个广泛的标准。如果一个句子陈述了一个原因、为一个原因辩护、陈述或回应了一个相反的立场、澄清了意义，或者提供了背景信息来使情况清晰，那么这个句子就是相关的。

Apply FRISCO to each draft. It is also a good idea to get opinions from your friends or associates. Ask one or more of them to apply FRISCO to your work.  
对每一份草稿都应用FRISCO。从你的朋友或同事那里征求意见也是个好主意。请其中一位或多位朋友将FRISCO应用到你的作品中。

Citations  
引用

­cussed in Chapter 3). More specifically, it is dangerous to cite someone as an author­ity for a proposition when other people equally qualified hold the opposite position.If you have cited sources, be sure that you know why you have done so and that your purpose is legitimate. Some legitimate purposes include giving credit for an idea you have expressed, proving that a person really said what you claim the person said (often needed when you are challenging what someone has said), and appealing to a legitimate authority to establish one of your reasons or subreasons. A danger is to act as if you are citing someone as an authority who does not meet the criteria for credibility (discussed in Chapter 3). More specifically, it is dangerous to cite someone as an authority for a proposition when other people equally qualified hold the opposite position.  
如果你引用了来源，请确保你知道为什么这样做，并且你的目的是合法的。一些合法的目的包括为你所表达的观点给予信用，证明某人确实说过你所声称的话（通常在你质疑某人所说的内容时需要），以及向一个合法的权威求助来证明你的理由或子理由之一。一个危险是假装将某人引用为一个不符合可信度标准的权威（在第三章中讨论）。更具体地说，当其他同样有资格的人持相反立场时，将某人引用为一个命题的权威是危险的。

Audience  
观众

When you write a position paper—and, in general, when you express yourself—keep your intended audience in mind. Focusing on your intended audience should help you decide what information you can assume in your paper and need not state, what terms need definition, and whether you need to provide citations. For example, a letter to an editor, or virtually anything to go in a local newspaper, does not need citations. On the other hand, a position paper for your local board of education or city council needs citations. Write for your audience.  
当你写一篇立场文件时，总体来说，当你表达自己的观点时，请牢记你的目标读者。关注你的目标读者应该有助于你决定在论文中可以假定的信息和不需要陈述的信息，需要定义的术语以及是否需要提供引用。例如，给编辑的信件或几乎任何要发表在当地报纸上的东西都不需要引用。另一方面，给你所在的教育委员会或市议会的立场文件需要引用。根据你的读者写作。­ter ­

A Checklist  
清单

Here is a nineteen-item checklist to use to ensure that the principal considerations in a position paper are satisfied. An affirmative answer to each question is desirable. You might want to adjust the checklist to your own situation.  
这是一个包含19个项目的清单，用于确保立场文件中的主要考虑因素得到满足。对每个问题都给出肯定的答案是可取的。您可能希望根据自己的情况调整清单。

1. Is there a thesis?  
   有论文吗？
2. Is the thesis clear enough for the situation?  
   论文对于这种情况是否足够清晰？
3. Is the thesis stated at the beginning of the paper (usually desirable)?  
   论文的论点是否在文章开头提出（通常是可取的）？
4. Is there a title?  
   有标题吗？
5. Does the paper adequately address the intended audience with respect to level of sophistication, assumed background knowledge, use of citations, definition of terms, etc.? (Also, have you made clear who is the intended audience and what is the intended medium of communication so that your commentator will have a basis for helpful comments?)
6. Is the paper sensitive to political and social contexts?  
   这篇论文是否充分考虑到目标读者的知识水平、背景知识、引用使用、术语定义等方面？（同时，您是否明确了目标读者和沟通媒介，以便评论者能够提供有益的评论基础？）这篇论文是否对政治和社会背景敏感？
7. Are the reasons identifiable?  
   可以确定原因吗？
8. Are the reasons acceptable?  
   这些原因可以接受吗？
9. Do the reasons support the thesis to the degree claimed?  
   这些原因是否支持论点所声称的程度？
10. Are opposing points of view adequately represented?  
    对立的观点是否得到充分代表？
11. Is every sentence relevant to the thesis?  
    每个句子都与论文相关吗？
12. Are terms defined where necessary?  
    必要时是否定义了术语？
13. Is the writing clear?  
    写作是否清晰？
14. Is the paper well-organized?  
    这篇论文组织得好吗?
15. ­graph, section to section)?Do transitions flow smoothly (sentence to sentence, paragraph to paragraph, section to section)?  
    过渡是否流畅（从句子到句子，从段落到段落，从部分到部分）？
16. Is the paper sufficiently concrete?  
    这篇论文足够具体吗？
17. Are there headings (unless the paper is very short) and subheadings (for a long paper)?  
    有标题吗（除非文章非常短），还有副标题（用于长篇文章）？
18. On the whole, are the critical thinking dispositions (such as being open- minded, seeing things from others’ points of view, and being aware of one’s own basic assumptions) exemplified?  
    总体而言，批判性思维倾向（如开放思维、从他人角度看问题、意识到自己的基本假设）得到了体现吗？
19. Is the summary adequate?  
    摘要是否充分？

Responsibility for the Wise Exercise of  
明智行使的责任

Your Knowledge  
你的知识

When you are through with this book, you will have some powerful tools that are not only useful, but also dangerous. You will learn about some methods of discussion and persuasion that you could use to make mischief. You will learn some new words that can be used to intimidate people. You will learn to see better what is right and wrong with an argument, and will have more power that results from your understanding. You will have learned about some techniques that are often effective in deceiving people. You will then have a responsibility to use your knowledge wisely.  
当你完成这本书后，你将拥有一些强大的工具，它们不仅有用，而且还很危险。你将学习一些讨论和说服的方法，你可以用它们来制造麻烦。你将学到一些可以用来恐吓人的新词汇。你将更好地看清一个论点的是非曲直，并且会因为你的理解而拥有更多的力量。你将了解一些常常能够欺骗人的技巧。然后，你将有责任明智地运用你的知识。­ple. You will then have a responsibility to use your knowledge wisely.

There is another danger: A little knowledge, because it can induce unjustified confidence, is sometimes worse than no knowledge. While you are learning the techniques, distinctions, and vocabulary of critical thinking, you should practice. But the danger is that you will flaunt your partial knowledge with more confidence than you should have. Remember these three things:  
有另一个危险：一点点知识，因为它可能引发不合理的自信，有时比没有知识更糟糕。当你学习批判性思维的技巧、区别和词汇时，你应该进行实践。但危险在于你可能会以比应有的自信更多地炫耀你的部分知识。记住这三件事：­niques, distinctions, and vocabulary of critical thinking, you should practice. But the danger is that you will flaunt your partial knowledge with more

There is always more to a situation than you know.  
情况总是比你所知道的更复杂。

The principles of critical thinking have exceptions and require good judgment in their application.  
批判性思维的原则存在例外情况，并在应用中需要良好的判断力。

Information, knowledge, and understanding of the topic or field of study are crucial.  
主题或研究领域的信息、知识和理解至关重要。

Chapter Summary  
章节摘要

In this book, the primary concern is how to decide what to believe or do. A related concern is reasonable interaction with other people in situations calling for such decisions.  
在这本书中，主要关注的是如何决定相信或做什么。相关的问题是在需要做出这些决定的情况下与他人进行合理的互动。

Initially, we will be concerned with the judging of arguments (in the logical sense of the word argument). An argument in this logical sense is an attempt to support a conclusion with one or more reasons. A conclusion is not the ending of something; rather, it is a proposition that someone is trying to prove or establish. The basic idea in judging arguments is that both the reasons and the inference (the reasoning) must be acceptable. This basic idea is expanded into FRISCO.  
最初，我们将关注对论证的判断（在逻辑意义上的论证）。在这个逻辑意义上，论证是试图用一个或多个理由支持一个结论的尝试。结论不是某事物的结束，而是某人试图证明或建立的命题。在判断论证时，基本思想是理由和推理（推理）都必须是可接受的。这个基本思想被扩展为FRISCO。­port a conclusion with one or more reasons. A conclusion is not the ending of some­thing; rather, it is a proposition that someone is trying to prove or establish. The basic idea in judging arguments is that both the reasons and the inference (the reasoning) must be acceptable. This basic idea is expanded into FRISCO.

­ments is not a sequence of steps; rather, it is a checklist to use to ensure that you have done the major things. The word The six basic elements in the FRISCO process of judging arguments are Focus, Reasons, Inference, Situation, Clarity, and Overview. This list of interdependent elements is not a sequence of steps; rather, it is a checklist to use to ensure that you have done the major things. The word FRISCO is a device to help you remember them.  
判断论证的FRISCO过程中的六个基本要素是焦点、理由、推理、情境、清晰度和概述。这个相互依赖的要素列表不是一系列步骤，而是一个检查表，用于确保你已经完成了主要任务。FRISCO这个词是一个辅助工具，帮助你记住它们。

Because realistic practice is helpful, you are urged to develop, and revise—and revise—a position paper as you read this book. Apply FRISCO to each revision. As you wend your way through the book, you will learn things to improve your position paper.  
因为现实的实践是有帮助的，所以在阅读本书的过程中，我们鼓励您不断发展和修改一份立场文件。在每次修改时应用FRISCO方法。当您阅读本书时，您将学到一些可以改进您的立场文件的知识。

Chapter 2 deals with argument analysis. In it, you will concentrate on the identification aspects of the first three elements of FRISCO. You will consider how to identify conclusions and reasons and will learn to clarify how the parts of an argument relate to each other to make an inference. Later chapters will look at the judgments you need to make in developing and appraising positions and arguments.  
第2章讨论了论证分析。在其中，您将集中关注FRISCO的前三个要素的识别方面。您将考虑如何识别结论和理由，并学习如何澄清论证的各个部分之间的关系以进行推理。后面的章节将讨论您在发展和评估立场和论证时需要做出的判断。­tification aspects of the first three elements of FRISCO. You will consider how to identify conclusions and reasons and will learn to clarify how the parts of an argument relate to each other to make an inference. Later chapters will look at the judgments you need to make in developing and appraising positions and arguments.

Check-Up 1B

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.   
如果为假，则将其更改为真。尝试以一种能显示您理解的方式进行。

1:14 One often needs to deviate from the given order of the six elements of critical thinking.  
1:14 人们经常需要偏离关键思维的六个要素的给定顺序。

1:15 When examining an argument, it is generally a good idea to try to identify the conclusion right away.  
1:15 当审查一个论点时，通常最好立即尝试确定结论。

1:16 Suppose that one has determined the writer’s conclusion. Then, in judging the argument, one does not need to ask whether there are alternative possible conclusions that are better supported

­fusing and a waste of time.1:17 Asking whether the reasons are themselves believable is generally confusing and a waste of time.  
1:16 假设一个人已经确定了作者的结论。那么，在评判这个论点时，不需要问是否存在其他更有支持的可能结论。1:17 询问理由本身是否可信通常会引起混淆和浪费时间。

1:18 The mam point of the overview element of critical thinking is to make sure that you can tell others how you have reached your decision.  
1:18批判性思维概述要点的主要目的是确保您能够告诉他人您是如何做出决策的。

1:19 The ideas in this book, if properly understood, can be used only for good purposes.  
1:19 这本书中的观点，如果被正确理解，只能用于善良的目的。

1:20 If an argument is bad, the conclusion must be wrong.  
如果一个论点是错误的，结论必定是错误的。

1:21 In deciding whether to believe a conclusion, the primary issue is whether the reasons are acceptable.  
1:21 在决定是否相信一个结论时，首要问题是理由是否可接受。

1:22 A reason in one argument can be the conclusion in another.  
一个理由在一个论证中可以成为另一个的结论。

Medium-Length Answer  
中等长度答案

1:23 Here is an argument:  
1:23 这里有一个争论：

­ical thinking is difficult to learn.You should not bother to do your homework in this course because critical thinking is difficult to learn.  
你不需要在这门课上费心做作业，因为批判性思维很难学习。

Imagine that a friend of yours has just offered this argument. Also imagine and specify more details in the situation—enough for it to be realistic to you. Then apply the six basic elements of critical thinking to this argument. Briefly report your results for each element in some convenient order, perhaps this one (note that I have not put them in the original FRISCO order; you choose the order you prefer):  
想象一下，你的一个朋友刚刚提出了这个论点。再想象并具体说明情境的更多细节，使其对你来说更加真实。然后将六个基本的批判性思维要素应用于这个论点。简要报告每个要素的结果，可以按照某种方便的顺序，比如这个顺序（注意我没有按照原始的FRISCO顺序排列它们；你可以选择你喜欢的顺序）。

1. Identify the Focus.  
   确定焦点。
2. Describe the Situation.  
   描述情况。
3. Discuss and judge the Clarity of the meaning of the terms.  
   讨论并判断术语的清晰度。
4. ­ments about whether they are acceptable (not about whether they are sufficient to establish the conclusion— that goes under Inference).Identify the Reasons and make and justify your judgments about whether they are acceptable (not about whether they are sufficient to establish the conclusion— that goes under Inference).  
   确定原因并对其是否可接受进行判断并进行合理的辩解（不是关于它们是否足以建立结论的问题，这属于推理范畴）。
5. Identify the Inference step, and make and justify your judgment about it.  
   识别推理步骤，并对其进行判断并给出理由。
6. Give an Overview in which you review your decisions about whether to accept the conclusion. Check for your use of your critical thinking dispositions throughout. Come to a final decision.  
   给出一个概述，回顾您对是否接受结论的决定。检查您在整个过程中使用的批判性思维倾向。做出最终决定。

1:24 Suppose that the defense attorney had been using the word attack to mean the giving of either verbal or physical abuse, and that he had shown that the victim was calling the defendant nasty names. How would that affect your judgment as a juror about whether the reason was sufficient to establish the innocence? Why?  
1:24 假设辩护律师使用攻击一词来表示言语或身体上的虐待，并且他已经证明受害人在称被告为恶劣的名字。作为陪审团成员，这会如何影响您对于是否有足够理由证明被告无罪的判断？为什么？

**1:25 Find a real (but very short) argument that you have heard someone offer or that you have read somewhere (perhaps in a newspaper, a book, or a magazine—perhaps an editorial, a letter to the editor, or a “Dear Abby” argument). Write it down or photocopy it. Apply the six basic elements of critical thinking to this argument. Briefly report your results in writing. If the argument you consider is only part of the total argument, then indicate that part and label it. Remember that an argument is an attempt to establish or justify a conclusion. Before you start working on your selection, ask yourself, “Is someone trying to establish or justify a conclusion here?” If not, look further.  
1:25 找到一个你听到过的或者在某处读到过的真实（但非常短）的论点（也许是在报纸、书籍或杂志上，也许是社论、给编辑的信或者亲爱的艾比的论点）。将其写下或复印下来。运用六个基本的批判性思维要素来分析这个论点。简要地书面报告你的结果。如果你考虑的论点只是整个论证的一部分，请指明并标注出来。记住，论点是试图建立或证明一个结论的尝试。在开始选择之前，问问自己，这里有人试图建立或证明一个结论吗？如果没有，继续寻找。**

**1:26 Develop a plan for a position paper. Suggest a tentative thesis and a rough idea of your argument in the form of an outline.  
制定一份立场文件的计划。以提纲的形式建议一个初步的论点和你的论证大致思路。**

Suggested Answers for Chapter 1  
第一章的建议答案

­tions Reminder: If used wisely, a set of suggested answers can be of great help to you in your study and practice. Wise use calls for you to do the items, problems, and questions first, and then look up the suggested answers. Do not peek at an answer before making a reasonable effort. If a suggested answer does not agree with yours, then try to figure out why. Perhaps yours is wrong, but perhaps yours is just different, but quite good. In any case, try to make sure that you understand why the suggested answer is what it is Ask your instructor for help, if necessary.  
提醒：如果明智地使用，一组建议的答案对你的学习和实践将会有很大帮助。明智的使用要求你先完成项目、问题和题目，然后再查看建议的答案。在做出合理努力之前不要偷看答案。如果建议的答案与你的答案不一致，那么尝试弄清楚原因。也许你的答案是错误的，但也许你的答案只是不同，但相当不错。无论如何，尽量确保你理解建议的答案为什么是这样的。如有必要，请向你的教师寻求帮助。

For the True-False items, I shall first list the True-False answers and then suggest acceptable revisions of the False items. Remember that there are other acceptable revisions, and sometimes other acceptable answers, depending on how you interpret the question and the situation.  
对于判断题，我将首先列出正确和错误的答案，然后提出对错误选项的可接受修正建议。请记住，根据您对问题和情况的解释方式，可能存在其他可接受的修正和答案。­gest acceptable ­able revisions, and sometimes other acceptable answers, depending on how you inter­

**Check-Up 1A**

1:1 F 1:2 T 1:3 T 1:4 F 1:5 T

**1:1** As defined here, an argument is an attempt to prove or establish a conclusion, and consists of a conclusion and one or more reasons offered in support of the conclusion. (Just the first part of this defini­tion would have been enough, but I chose here to give more.)

**1:4 The details of the situation are always important in making decisions.  
1:1 根据此处的定义，论证是试图证明或建立一个结论的尝试，包括一个结论和一个或多个支持该结论的理由。（仅此定义的第一部分就足够了，但我选择在这里提供更多信息。）1:4 在做决策时，情况的细节始终很重要。**

**1:6 A 1:7 A 1:8 N 1:9 N 1:10 A 1:11 N**

**1:12 A 1:13 N**

**Check-Up IB**

**1:14 T 1:15 T 1:16 F 1:17 F 1:18 F 1:19 F**

1:20 F 1:21 F 1:22 T

**1:16 It is generally a good idea to ask whether there are alternative possible conclusions that are as well, or better, supported.  
通常来说，询问是否存在其他可能的结论，并且这些结论同样或更好地得到支持，是一个不错的主意。**

**1:17 To ask whether the reasons are themselves believable is often a good idea.   
1:17 询问原因是否可信通常是个好主意。**

**1:18 The main points of the overview are to check to catch any errors made previously, to see how everything fits together, and to make sure that you have evidenced the critical thinking dispositions.  
1:18 概述的主要要点是检查以捕捉之前的任何错误，看看所有内容如何配合，并确保您已经提供了关键思维倾向的证据。**

**1:19 The ideas in this course can be misused.  
这门课程中的观点可能被滥用。**

**1:20 Showing that an argument is bad does not by itself show that the conclusion is wrong.  
1:20 表明一个论点是错误的，并不能单独证明结论是错误的。**­clusion is wrong.

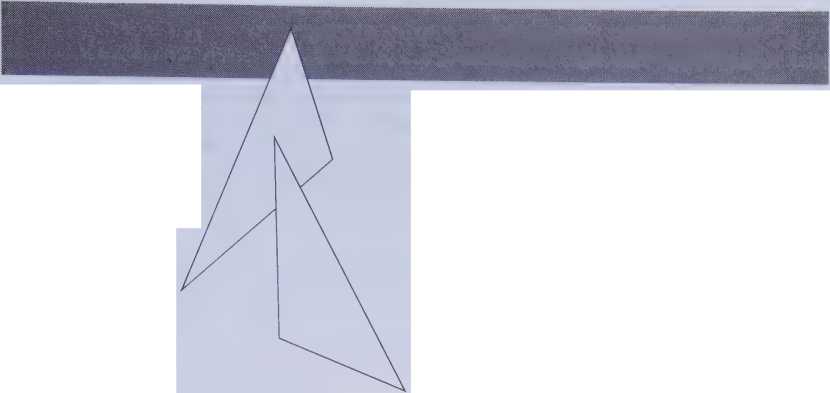
**1:21 In deciding whether to believe a conclusion, the primary issues are whether the reasons are acceptable and whether they give sufficient support for the conclusion.  
在决定是否相信一个结论时，主要问题是理由是否可接受以及它们是否为结论提供足够的支持。**

**1:23 This is up to you. I hope you were brief.  
这取决于你。我希望你能简洁。**

**1:24 That would be reason to judge the support insufficient, because calling somebody nasty names is not sufficient reason for killing.  
那将是判断支持不足的理由，因为用恶言辱骂某人并不足以成为杀人的理由。**­ing somebody nasty names is not sufficient reason for killing.

**1:25 This is up to you. I hope you had an easy time finding a short, interesting argument.  
这取决于你。我希望你能轻松地找到一个简短而有趣的论点。**­esting argument.

**1:26 This is up to you. Please continue to develop this as you proceed through this book.  
这取决于你。请在阅读本书的过程中继续发展这个想法。**



CHAPTER

2

Argument Analysis: Identifying Conclusions and Reasons  
论证分析：识别结论和原因

Before you can be confident in your judgment about an argument, you must know what the argument is. The first thing to do is to determine the focus (the F in FRISCO). In an argument, the focus is the conclusion—the thing that the arguer is trying to get us to accept. So the first thing to do is to identify the conclusion.  
在你对一个论证有信心之前，你必须知道这个论证是什么。首先要做的是确定焦点（FRISCO中的F）。在一个论证中，焦点就是结论，即作者试图让我们接受的观点。所以首先要做的是确定结论。

Generally, the second thing to do is to identify the reasons (the “R”) offered in support of the conclusion. In preparation for judging the inference (the “I”), it is also usually helpful to make a deliberate effort to see how the conclusion and the reasons fit together. These activities of argument analysis are not always as easy as they seem, and they are the concerns of this chapter. In later chapters, we will look at deciding whether to accept reasons and inferences. Here our concern is just to figure out what are the reasons and conclusions and to figure out their relationships to each other.  
一般来说，第二件要做的事情是确定支持结论的原因（R）。在判断推理（I）之前，通常有意识地努力看看结论和原因如何相互配合也是有帮助的。这些论证分析的活动并不总是像它们看起来那么容易，它们是本章的关注重点。在后面的章节中，我们将考虑是否接受原因和推理。在这里，我们只关心弄清楚什么是原因和结论，并弄清它们彼此之间的关系。

The Murder Trial  
谋杀审判

The murder trial I mentioned earlier will be the source of a number of my examples, so I shall give some more background about it. I have changed some features in order to protect privacy and have unavoidably omitted a number of details of the situation.  
我之前提到的谋杀审判将成为我举例的来源之一，所以我将提供一些更多的背景信息。为了保护隐私，我已经改变了一些细节，并不可避免地省略了一些情况的细节。

­ecutor, Arlene was jealous because Al was going with another woman, and she lured him into the dining room and stabbed him in the heart. He died within five minutes of the stabbing. There were no witnesses to the stabbing, although there were peo­ple in nearby rooms.Arlene Burr was on trial for the murder of her boyfriend, Al Hamilton. Arlene, 22, was living with her parents that cold night in January when it happened. Arlene and Al had been out in his car, and returned at about 11 P.M. According to the prosecutor, Arlene was jealous because Al was going with another woman, and she lured him into the dining room and stabbed him in the heart. He died within five minutes of the stabbing. There were no witnesses to the stabbing, although there were people in nearby rooms.  
阿琳·伯尔因谋杀男友阿尔·汉密尔顿而受审。22岁的阿琳在那个寒冷的一月晚上与父母同住。据检察官称，阿琳因为阿尔与另一个女人交往而感到嫉妒，她引诱他进入餐厅并刺伤了他的心脏。他在被刺伤后的五分钟内死亡。虽然附近的房间里有人，但没有目击者。

Although he agreed that there were no witnesses, the defense attorney had a different account. He claimed that Al Hamilton chased Arlene into the dining room after threatening to kill her, and she simply tried to defend herself with a carving knife that happened to be lying on the table.   
虽然他承认没有目击者，但辩护律师有不同的说法。他声称阿尔·汉密尔顿在威胁要杀死她后追逐阿琳进入餐厅，而她只是试图用刚好放在桌子上的切肉刀来自卫。

Arlene was charged not only with murder, but also with the lesser charge of voluntary manslaughter. The prosecutor thought that if he could not get a murder conviction, he could at least get a conviction for voluntary manslaughter. The jury had to decide about each charge. We were told that if she was guilty of murder, then she was also guilty of voluntary manslaughter. We were also told that it was possible for her to be guilty of voluntary manslaughter without being guilty of murder. Later I will state what was involved in each charge. For now, I will only note that for each it was required that the State prove beyond a reasonable doubt that Arlene performed the act that caused the death of Al Hamilton. This was the first of several things to be proven to establish that it was murder. It was also the first of several things to be proven to establish voluntary manslaughter. A complete specification of the conditions for each charge appears in Chapter 6.  
Arlene不仅被指控谋杀罪，还被指控故意杀人罪。检察官认为，如果无法获得谋杀定罪，至少可以获得故意杀人罪定罪。陪审团必须对每项指控做出决定。我们被告知，如果她有谋杀罪，那么她也有故意杀人罪。我们还被告知，她有可能有故意杀人罪，但没有谋杀罪。稍后我将说明每项指控的内容。现在，我只想指出，每项指控都需要州方以合理怀疑的证据证明Arlene犯下了导致Al Hamilton死亡的行为。这是证明谋杀罪的第一项要求。这也是证明故意杀人罪的第一项要求。每项指控的条件的完整规定详见第6章。­untary manslaughter. The prosecutor thought that if he could not ­­tions for each charge appears in Chapter 6.

At the end of the trial, the prosecuting and defense attorneys each had a chance to summarize their cases for the jury. As one might expect, one of the prosecutor’s conclusions in his summary argument was that Arlene performed the act that caused Al’s death. Here is a portion of his summary argument for this conclusion (with the paragraphs numbered for reference):  
审判结束时，原告和辩护律师各有机会为陪审团总结他们的案件。正如人们所预料的那样，其中一名原告在他的总结陈述中得出的结论之一是，阿琳实施了导致艾尔死亡的行为。以下是他关于这个结论的总结陈述的一部分（段落编号供参考）：

1. ­lish this conclusion.Members of the jury, it is clear that Arlene performed the act that caused Al’s death. Let me remind you of some of the important facts that establish this conclusion.  
   陪审团成员，很明显，阿琳执行了导致奥尔死亡的行为。让我提醒您一些重要的事实，以证明这个结论。
2. ­bing him. She said that she picked up the knife and stabbed him in the chest with it. Obviously she would not have admitted it if she had not done it, so she did stab him.The most important fact is that on the witness stand she admitted stabbing him. She said that she picked up the knife and stabbed him in the chest with it. Obviously she would not have admitted it if she had not done it, so she did stab him.  
   最重要的事实是，在证人席上，她承认刺伤了他。她说她拿起刀子，用它刺了他的胸部。显然，如果她没有做过这件事，她是不会承认的，所以她确实刺伤了他。
3. The pathologist who examined the body said that there was only one knife wound, and that was in Al’s chest. The pathologist also said that this one knife wound was the cause of death. Arlene’s knife stroke must have caused his death.  
   检查尸体的病理学家说只有一个刀伤，就在阿尔的胸口。病理学家还说这一刀伤是死因。阿琳的刀击必然导致了他的死亡。
4. You might think that Arlene is not strong enough to stab someone that seriously, but remember that the knife stroke was not a powerful one. This is because the knife stroke went in only about 2.5 inches and did not touch any bones. The pathologist testified to this.  
   你可能认为阿琳不够强壮，无法对某人造成如此严重的刺伤，但请记住，这一刀并不强有力。这是因为刀刃只刺入了大约2.5英寸，并没有触及任何骨头。法医作证证实了这一点。
5. There was no one else in the dining room at the time of the stabbing.  
   在刺人的时候，餐厅里没有其他人。

­ents. Because they did not mention anyone else, obviously there was no one else.It is clear that Arlene did not mention anyone else. Neither did her parents. Because they did not mention anyone else, obviously there was no one else.  
很明显，阿琳没有提到其他任何人。她的父母也没有。因为他们没有提到其他人，显然是没有其他人的。

1. The first person to touch the body after the stabbing was the ambulance driver, who reported that he arrived to find Al dead five minutes after Arlene’s father called in. Her father said that he called as soon as Arlene came into her parents’ bedroom with a bloody knife in her hand. Her father also said that he prevented anyone from entering the dining room until the ambulance driver did so.  
   刺伤后第一个接触到尸体的人是救护车司机，他报告说他在阿琳父亲打电话报警后五分钟发现阿尔已经死了。她父亲说他在阿琳手中拿着一把血淋淋的刀进入他们卧室后立即打电话报警。她父亲还说他阻止任何人进入餐厅，直到救护车司机进入。
2. We must therefore conclude that, although she loved him, Arlene did perform the act that caused Al Hamilton’s death.   
   因此，我们必须得出结论，尽管她爱他，阿琳还是做出了导致阿尔·哈密尔顿死亡的行为。

Conclusions and Reasons  
结论和原因

The final conclusion in this part of the prosecutor’s summary speech is this proposi­tion: “Arlene performed the act that caused AΓs death.” There are several reasons for picking this one 1 will consider these reasons and talk about various criteria for iden­tifying conclusions and reasons. (By *criteria* I mean rules or guides for making a judgment.)

Criteria (or Cues) for Identifying Conclusions

One excellent criterion for something’s being a conclusion is the author’s (or speaker’s) calling it a conclusion. In the prosecutor’s Paragraph 1, he did just this.  
在检察官的总结演讲的这一部分中，最终的结论是：阿琳执行了导致AΓ死亡的行为。有几个原因支持这个结论，我将考虑这些原因并讨论识别结论和原因的各种标准。（通过标准，我指的是判断的规则或指南。）识别结论的标准（或线索）之一是作者（或演讲者）称之为结论。在检察官的第1段中，他就这样做了。

In the first sentence of Paragraph 7, the prosecutor used two other clear con­clusion indicators: “therefore” and “conclude.” The use of either of these indicator words is a very reliable criterion for identifying a conclusion. (He did not need two indicators here. Sometimes people use more than one for emphasis.)

Here is a list of some words that we often use to indicate that a conclusion is coming next:  
在第7段的第一句中，检察官使用了另外两个明确的结论指示词：因此和总结。使用这些指示词中的任意一个都是识别结论非常可靠的标准。（他在这里不需要两个指示词。有时人们会使用多个来强调。）以下是一些我们经常用来表示接下来会有结论的词汇列表：

it follows that  
由此可见

therefore hence thus

so

the following is my conclusion here is my conclusion  
以下是我的结论，这是我的结论。

we must conclude that  
我们必须得出结论

These indicators are not always present, but when they are present you should take advantage of them. They introduce something that the speaker or writer wants to conclude. Furthermore, you should use one of these or some other clear indicator when you want to be absolutely sure that your audience knows what your conclusion is.  
这些指标并不总是存在，但当它们存在时，您应该利用它们。它们引入了演讲者或作者想要得出的结论。此外，当您希望绝对确保您的听众知道您的结论时，您应该使用其中之一或其他明确的指示器。

The word because (and sometimes the word since) is also a valuable indicator. It tells us that a reason comes next. This often means that the other part of the sentence is a conclusion. The last sentence of Paragraph 5 starts with the word because. This word introduces a reason: “they did not mention anyone else.” The other part of the sentence, “there obviously was no one else,” is a conclusion. Note, however, that it is not the main conclusion of the whole passage. It is only the conclusion of the fifth paragraph. The prosecutor’s argument then consists of one main conclusion, supported by a number of subconclusions, or intermediate conclusions.  
因为"这个词（有时候也是"既然"）也是一个有价值的指示器。它告诉我们接下来会有一个原因。这通常意味着句子的另一部分是一个结论。第5段的最后一句以"因为­ported by a number of subconclusions, or intermediate conclusions.

Often, the conclusion appears at either the beginning or the end of a paragraph or passage, and sometimes at both the beginning and the end. The prosecutor’s main conclusion appears at the beginning of the passage and at the end of the passage.  
通常，结论出现在段落或篇章的开头或结尾，有时同时出现在开头和结尾。检察官的主要结论出现在篇章的开头和结尾。

­clusion at both the beginning and the end.Writers and speakers often put the conclusion at the beginning in order to get your attention and to enable you to see why they are saying the things they do. This is a good practice, especially when the topic and the reasoning are complex. On the other hand, sometimes people put the conclusion at the end to make it clear what they hope to have accomplished. It is often a good idea to do both—to put the conclusion at both the beginning and the end.  
作家和演讲者通常会把结论放在开头，以吸引你的注意力，并让你看到他们为什么说这些话。这是一个很好的做法，特别是当主题和推理很复杂时。另一方面，有时候人们会把结论放在最后，以明确他们希望达到的目标。通常最好的做法是既在开头又在结尾都提出结论。

However, placement is not a thoroughly reliable criterion. People sometimes put their conclusions in the middle, and sometimes they do not even state them explicidy at all, leaving it up to you to figure it out. But searching around at the beginning and at the end of a passage is helpful. The conclusion is often in one place or the other (or both).  
然而，位置并不是一个完全可靠的标准。有时人们会把他们的结论放在中间，有时甚至根本不明确地陈述，而是让你自己去理解。但是在段落的开头和结尾周围搜索是有帮助的。结论通常在一个地方或另一个地方（或两者都有）。

Conclusion-Suggesting Emphasis Terms:  
总结-建议强调术语：

Must, Should, Etc.

Often, when there is no clear conclusion indicator, the conclusion has an emphasis term such as must or should in it, suggesting that it is the conclusion. This happens at the end of Paragraph 3: “Arlene’s knife stroke must have caused his death.” One of the signs suggesting that this is the conclusion is the word must, which is used for emphasis here. The prosecutor is saying that the evidence forces us to accept the conclusion that Arlene’s knife stroke caused the death. Unfortunately, the word must (and others like it) have other functions, so they are not very reliable indicators.  
通常情况下，当没有明确的结论指示词时，结论中会有一个强调词，比如“必须”或“应该”，这表明它是结论。在第三段的结尾就出现了这种情况：“阿琳的刀击肯定导致了他的死亡。”一个表明这是结论的迹象是使用了“必须”这个词来强调。检察官在说，证据迫使我们接受这个结论，即阿琳的刀击导致了死亡。不幸的是，“必须”（以及类似的词语）还有其他功能，所以它们并不是非常可靠的指示词。­clusion that Arlene’s knife stroke caused the death. Unfortunately, the word

Check-Up 2A

True or False?  
真或假？

If a statement is false, change it to make it true. Try to do so in a way that shows that you understand.  
如果一个陈述是错误的，请将其更改为使其变为正确的陈述。试着以一种能显示你理解的方式来做到这一点。

**2:1 The conclusion rarely comes at the beginning or end of a passage.  
结论很少出现在一段的开头或结尾。**

**2:2 The word because introduces a reason.  
2:2 因为**

**2:3 The word because often indicates that the part of the sentence not introduced by this word is a conclusion.  
2:3 因为这个词经常表示句子中未被引入的部分是一个结论。**

**2:4 If a sentence does not appear at the beginning or end of a passage, then it is not the conclusion.  
如果一个句子不出现在一个段落的开头或结尾，那么它不是结论。**

**2:5 The word therefore introduces a conclusion.  
因此**

**2:6 The word so introduces a reason.  
2:6 所以这个词引出了一个原因。**

2:7 A criterion is a guide for making a decision.  
2:7 准则是做决策的指南。

Short Answer  
简答题

**2:8 At the end of Paragraph 2, the words “she did stab him” appear. Is this a conclusion? Why?  
2:8 在第二段的结尾，出现了她刺伤了他的字眼。这是一个结论吗？为什么？**

**2:9 In Paragraph 4, the word because does not introduce a conclusion; it introduces a reason. Write out the conclusion this reason supports. Pick this conclusion from the same paragraph, and pick one that is actually stated in the paragraph.  
2:9 在第4段中，because这个词不是引出一个结论，而是引出一个原因。写出这个原因所支持的结论。从同一段中选择这个结论，并选择一个实际在该段中陈述的结论。**

**2:10 Write out a short argument of your own containing at least one reason and a conclusion. Use some indicator word that enables others to know that the conclusion conies next. Draw a circle around this indicator word and underline your conclusion twice.  
写出一个包含至少一个原因和一个结论的简短论证。使用一些指示词来让他人知道结论接下来。在这个指示词周围画一个圆圈，并将你的结论下划线两次。**­cator word and underline your conclusion twice.

**2:11 What is the prosecutor trying to prove in Paragraph 4, taken by itself? Why do you think this is the conclusion of Paragraph 4?   
2:11 第4段中检察官试图证明什么？为什么你认为这是第4段的结论？**

Identification  
鉴定

­sion twice and (b) if there is a word that indicates that a conclusion comes next, draw a circle around it. Then (c) underline once each reason offered to support the con­clusion and (d) make a box around any words that indicate that a reason comes next. The first two are done as examples:For each of the following arguments (2:12 through 2:23), (a) underline the conclusion twice and (b) if there is a word that indicates that a conclusion comes next, draw a circle around it. Then (c) underline once each reason offered to support the conclusion and (d) make a box around any words that indicate that a reason comes next. The first two are done as examples:  
对于以下的每个论证（2:12到2:23），(a) 两次下划线标记出结论，(b) 如果有一个词表明接下来是结论，请在其周围画一个圆圈。然后 (c) 一次下划线标记出支持结论的每个理由，(d) 在任何表明接下来是理由的词语周围画一个方框。前两个已经完成作为示例：

**2:12 Jane,s baseball glove is missing.(Sq)she went to the park today.  
2:12 简的棒球手套不见了。(Sq)她今天去了公园。**

**2:13 Jane went to the park today. I know this ∣because∣ her glove is missing.  
2:13 简今天去了公园。我知道这是因为她的手套不见了。**

­arate piece of paper.Before you do these things, be clear about what pieces of paper you will use to show the results to your instructor. If your instructor has not made a suggestion, then I suggest that you photocopy these items and do the suggested work on the copy, to be given to your instructor. You have permission to photocopy these items for this purpose. If you do not have access to a photocopier, write out the sentences on a separate piece of paper.  
在你做这些事情之前，要清楚你将使用哪些纸张来向你的导师展示结果。如果你的导师没有提出建议，那么我建议你复印这些物品，并在复印件上进行建议的工作，以交给你的导师。你有权限为此目的复印这些物品。如果你没有复印机的访问权限，在另一张纸上写出这些句子。

**2:14 Because Arthur plays chess slowly and carefully, this will be a long game.  
2:14 因为亚瑟下棋慢而谨慎，这将是一场漫长的比赛。**

**2:15 Eggs boiled at high altitude take much longer to cook. Therefore, you should boil this egg for a longer time.  
高海拔地区煮鸡蛋需要更长时间。因此，您应该将这个鸡蛋煮更长时间。**

**2:16 The unexamined life is not worth living. I know this to be true because Socrates said so.  
未经审视的生活不值得过。我知道这是真的，因为苏格拉底这样说过。**

**2:17 It is obvious that she loved him. So she did not kill him.  
很明显她爱他。所以她没有杀他。**

**2:18 Because the pathologist found only one wound on the victim’s body, that wound must be the one she caused.  
2:18 因为病理学家在受害者身上只发现了一个伤口，那个伤口一定是她造成的。**

**2:19 A twenty-two-year-old woman could not do such a thing to someone she loved. She could not even have struck at him with a knife.  
2:19 一个22岁的女人不可能对她爱的人做出这样的事情。她甚至不能用刀攻击他。**

Therefore, someone else did it.  
因此，别人做了。

**2:20 Rooms with light-colored walls are well-lighted. Because Mr. Martinez says that Monique’s room is not well-lighted, we can conclude that it does not have light-colored walls.  
2:20 房间墙壁颜色浅的房间光线明亮。由于马丁内斯先生说莫妮克的房间光线不好，我们可以得出结论，它没有浅色墙壁。**

**2:21 Because Charles Dickens describes people and events in great detail,  
2:21 因为查尔斯·狄更斯非常详细地描述了人物和事件**

Jonathan will no doubt be reading that book for a long time.  
乔纳森无疑会读那本书很长时间。

**2:22 She must have hated him. He was going with another woman, wasn’t he?  
她一定讨厌他。他和另一个女人在一起，对吗？**

**2:23 Tom Jeffers could not have killed Al Hamilton. Tom was in the local  
汤姆·杰弗斯不可能杀了阿尔·汉密尔顿。汤姆当时在当地。**

hospital from 10 P.M. to midnight and Al was killed at about 11:05 p.m.   
晚上10点到午夜的医院，而Al在大约晚上11点05分被杀。

Reasons and Intermediate Conclusions  
原因和中间结论

Often a conclusion serves as a reason for another conclusion. Then it is called an intermediate conclusion. For example, the conclusion of Paragraph 5, “There was no one else in the dining room at the time,” is in turn a reason for the conclusion of the part of the prosecutor’s speech that you read, “Arlene performed the act that caused Al Hamilton’s death.” This conclusion, given the rest of the prosecutor’s summary speech, was a reason for the prosecutor’s ultimate conclusions, “Arlene is guilty of murder” and “Arlene is guilty of voluntary manslaughter.”

In order to avoid confusion, let us limit the use of the label intermediate conclusion to any conclusion supporting another conclusion that is part of the passage under consideration. Otherwise, almost every conclusion would be called an intermediate conclusion.  
通常，一个结论作为另一个结论的理由。然后它被称为中间结论。例如，第5段的结论，当时餐厅里没有其他人，反过来是检察官演讲部分的结论的理由，你读到的是，阿琳犯下了导致阿尔·汉密尔顿死亡的行为。这个结论，根据检察官总结演讲的其他部分，是检察官最终结论的理由，即阿琳犯有谋杀罪和阿琳犯有自愿杀人罪。为了避免混淆，让我们将标签“中间结论”限制在支持考虑中的其他结论的结论上。否则，几乎每个结论都会被称为中间结论。*­*­mediate conclusion.

Nonindicators

Some Words that Signal Importance  
一些表达重要性的词语

One set of words in the first paragraph, although it does introduce the main conclusion, is not a reliable indicator that what comes next is a conclusion of the reasoning that is presented. Those words are “it is clear that.” Sometimes, such words are used instead to introduce a reason that is not defended in the surrounding line of reasoning. Note their use in Paragraph 5 to introduce a reason. Other words that can introduce either a conclusion or a reason are obviously and there is no doubt that. Note the word obviously m the last sentence in Paragraph 2 and in the last sentence of Paragraph 5. In one place it introduces a reason; in the other, a conclusion. These kinds of words, although they generally introduce statements that are important, are not reliable indicators of a conclusion. They express the speaker’s (or author’s) self-confidence and sometimes serve to intimidate people. Beware of being intimidated by such words.  
第一段中的一组词语，虽然它确实引出了主要结论，但并不能可靠地表明接下来的内容是所呈现的推理的结论。这些词语是'明显'。有时，这样的词语被用来引出一个在周围的推理中没有被辩护的理由。请注意它们在第5段中引出一个理由。其他可以引出结论或理由的词语包括'显然'和'毫无疑问'。请注意第2段的最后一句和第5段的最后一句中的'显然'一词。它在一个地方引出了一个理由，在另一个地方引出了一个结论。尽管这些词语通常引出重要的陈述，但它们并不可靠地表明一个结论。它们表达了发言者（或作者）的自信，并有时用来恐吓人们。小心被这些词语所恐吓。­sion, is not a reliable indicator that what comes next is a conclusion of the reasoning that is presented. Those words are “it is clear that.” Sometimes, such words are used instead to introduce a reason that is not defended in the surrounding line of reason­­duce either a conclusion or a reason are ­cators of a conclusion. They express the speaker’s (or author’s) self-confidence and sometimes serve to intimidate people. Beware of being intimidated by such words.

Because I have so often seen such terms used to introduce statements that are not at all obvious, I make a practice of deliberately checking to see whether things called obvious really are obvious. I recommend this practice to you. It applies to expressions such as *it is obvious, it is clear that, there is no doubt that,* and *of course.* (Do not use such terms to hide the weaknesses in your own arguments or to intimi­date people. Instead, have good arguments!)

Contrast Words

The word although is an important word in arguments. Note that the prosecutor used it in the last paragraph when he said, “although she loved him.” Usually, the word although indicates something that is neither a reason nor a conclusion. It usually introduces something that contrasts with what the person is trying to show. Other language that docs the same thing is the phrase despite the fact that.  
因为我经常看到这样的术语被用来引入一些并不明显的陈述，所以我特意习惯性地检查所谓明显的事情是否真的明显。我建议你也这样做。这适用于诸如“显然”，“很明显”，“毫无疑问”和“当然”的表达方式。（不要使用这些术语来掩盖你自己论证的弱点或者威吓他人。相反，要有好的论据！）对比词“虽然”是论证中一个重要的词。请注意，检察官在最后一段中使用了这个词，他说“虽然她爱他”。通常，“虽然”表示的是既不是原因也不是结论的东西。它通常引入与人们试图展示的内容相对立的事物。其他表达相同含义的词组是“尽管事实如此”。

­It is often good persuasive strategy to admit something that you realize is clearly true and that might be used in an argument against you. When you admit such a thing, you reduce the dramatic element that someone arguing in the other direction might try to use against you. You also make clear that you have considered the bear ing of this fact on your case and have decided that it is not enough to make you change your mind. If you had not considered it, you might be faulted for having overlooked something important. Contrast words provide a good way to introduce such an admission.  
承认一些你意识到明显正确且可能被用来反驳你的事情往往是一种很好的说服策略。当你承认这样的事情时，你减少了对方可能试图用来反对你的戏剧性因素。你还清楚地表明你已经考虑过这个事实对你的案件的影响，并决定这还不足以让你改变主意。如果你没有考虑过，你可能会因为忽视了重要的事情而受到指责。对比词提供了一种很好的方式来引入这样的承认。

­ing the argument (the prosecutor himself) had given consideration to this possibly damaging fact.For example, when the prosecutor conceded, “although she loved him,” he showed that he was aware that Arlene’s loving Al could be used to argue that she would not kill him. He showed that he had considered this argument and decided that it was not strong enough to counteract the powerful argument he offered for his case. He conceded what he had to concede, and showed the jury that someone offering the argument (the prosecutor himself) had given consideration to this possibly damaging fact.  
例如，当检察官承认时，尽管她爱他，但他表明他意识到阿琳爱阿尔可能被用来证明她不会杀死他。他表明他已经考虑过这个论点，并决定这个论点不足以抵消他为自己的案件提出的有力论证。他承认了他必须承认的事实，并向陪审团表明提出这个论点的人（检察官自己）已经考虑到这个可能具有破坏性的事实。

Starting a paragraph or a presentation with although also has the value of helping to make your presentation more interesting. It sets up a paradox, or a conflict that the listener will often want resolved. Consider this strong beginning of another speech given by the prosecutor (made at the beginning of the trial, not the end):  
虽然以尽管开始一个段落或演讲也有助于使您的演讲更有趣的价值。它建立了一个悖论或冲突，听众通常希望解决。考虑一下检察官在另一次演讲中的强烈开头（在审判开始时而不是结束时发表）。­ing to make your presentation more interesting. It sets up a paradox, or a conflict that the listener will often want resolved. Consider this strong beginning of another speech given by the prosecutor (made at the beginning of the trial, not the end):

Members of the jury, although Arlene loved Al Hamilton, she murdered him.  
陪审团成员们，虽然阿琳爱着艾尔·汉密尔顿，但她谋杀了他。

In fact, she murdered him because she loved him.  
实际上，她杀了他是因为她爱他。

Note the contrast and concession at the beginning of Paragraph 4: “You might think that Arlene is not strong enough to stab someone that seriously, but remember that the knife stroke was not a powerful one.” The phrasing “You might think that ..., but . . . ,” often suggests that the opposite (or the denial) of what you might think is really the conclusion. In Paragraph 4, this is so. That is, “Arlene is strong enough to stab someone that seriously” is the conclusion of Paragraph 4. (I will con­sider this example in greater detail later on.)

There are a variety of other devices that indicate something important that a speaker wants to get across without necessarily indicating a conclusion. Trying to list them all is unnecessary because you probably have the idea by now. To check this, I ask vou to think about whether the words but and however are conclusion indicators. Always? Sometimes? Never? Can you give some examples to support your answer?  
请注意第4段开头的对比和让步：你可能认为Arlene没有足够的力量刺伤某人，但请记住刀刺并不强大。短语“你可能认为...，但是...”经常暗示着与你可能认为的相反（或否定）的真正结论。在第4段中，情况确实如此。也就是说，Arlene有足够的力量刺伤某人是第4段的结论。（我稍后会更详细地讨论这个例子。）还有其他一些表明演讲者想要传达重要信息而不一定表明结论的设备。尝试列出它们都是不必要的，因为你现在可能已经有了这个想法。为了检查这一点，我请你考虑一下“但是”和“然而”这两个词是否表示结论。总是？有时候？从不？你能给一些例子来支持你的回答吗？

The "Therefore" Test  
因此

­sible conclusion (one at a time), move it to the end of the passage, insert the word “therefore” in front of the proposition, and see which result makes the most sense. Consider this example:When there are no clear conclusion indicators, it is sometimes helpful to use the “therefore” test. To do this, you take each proposition you are considering as a possible conclusion (one at a time), move it to the end of the passage, insert the word “therefore” in front of the proposition, and see which result makes the most sense. Consider this example:  
当没有明确的结论指示词时，有时使用因此测试会有所帮助。为了做到这一点，您将考虑的每个命题都视为可能的结论（逐个），将其移到段落末尾，在命题前插入“因此”一词，然后看哪个结果最合理。考虑以下示例：

Example 2:1

The streets are very slippery. Lynn should not ride her bike.  
街道很滑。琳不应该骑自行车。

­Assuming that this is an argument, which is the conclusion? First take the slippery streets proposition, put it last, and insert therefore in front of it:   
假设这是一个论点，那么结论是什么？首先将滑溜的街道命题放在最后，并在其前面插入因此：

Example 2:2

Lynn should not ride her bike. Therefore, the streets are slippery.  
琳不应该骑自行车。因此，街道很滑。

Now do it the other way:  
现在以另一种方式做。

Example 2:3

The streets are slippery. Therefore, Lynn should not ride her bike.  
街道很滑。因此，琳不应该骑自行车。

Example 2:3 makes the most sense to me in the situation as I imagine it, so I pick as the conclusion, “Lynn should not ride her bike.”  
在我想象的情况下，对我来说，例子2:3是最有道理的，所以我选择作为结论，琳不应该骑自行车。

However, the “therefore” test does not always give the answer. Consider this example, offered by the defense attorney:  
然而，因此测试并不总是能给出答案。考虑辩护律师提出的这个例子。

Example 2:4

­erate force.She did not intend to kill him. The knife stroke was delivered with only moderate force.  
她并不打算杀他。刀刃只用了适度的力量。

Here are the two possible results in applying the test:  
应用该测试可能有两种可能的结果。

Example 2:5

The knife stroke was delivered with only moderate force. Therefore, she did not intend to kill him.  
刀刃只施加了适度的力量。因此，她并没有打算杀他。

Example 2:6

She did not intend to kill him. Therefore, the knife stroke was delivered with only moderate force.  
她并不打算杀他。因此，刀刃只用了适度的力量。

Both results make sense to me before we take the Situation (the S in FRISCO) into account. Consider the situation: Who said the sentences in Example 2:4 and what was his role in the trial? Assuming that the selection is intended to be an argument, it makes more sense for the defense attorney to have 2:5 in mind because it argues for a conclusion that he wanted us to accept. Considering the situation in which the argument arises helps us then to decide which is the conclusion.  
在考虑情境（FRISCO中的S）之前，这两个结果对我来说都是有意义的。考虑情境：在例子2:4中，是谁说了这些句子，他在审判中扮演了什么角色？假设选择是用来进行争论的，那么辩护律师更有可能考虑2:5，因为它支持了他希望我们接受的结论。考虑争论出现的情境有助于我们决定哪个是结论。­ment, it makes more sense for the defense attorney to have 2:5 in mind because it argues for a conclusion that he wanted us to accept. Considering the situation in which the argument arises helps us then to decide which is the conclusion.

Even though the “therefore” test does not always give the answer by itself, it is a useful device. It often clearly reveals the conclusion, and usually is at least of some help. Because it is the writer’s intended conclusion that we are trying to determine in this chapter, we often cannot be sure that we have determined it. Sometimes writers themselves are not sure what they are trying to prove, and often what they say can legitimately be interpreted in different ways. For some examples, look at the letters to the editor in your local newspaper. However, despite this difficulty, the “therefore” test is often very helpful.   
尽管因此测试本身并不总能给出答案，但它是一个有用的工具。它经常清楚地揭示出结论，并且通常至少有一些帮助。因为我们在本章中试图确定的是作者的预期结论，我们经常无法确定我们是否已经确定了它。有时候，作家们自己也不确定他们试图证明什么，而且他们所说的内容往往可以合理地以不同的方式解释。举个例子，看看你当地报纸上的读者来信。然而，尽管存在这种困难，因此测试通常非常有帮助。

Check-Up 2B

True or False?  
真或假？

If a statement is false, change it to make it true. Try to do so in a way that shows that you understand.  
如果一个陈述是错误的，请将其更改为使其变为正确的陈述。试着以一种能显示你理解的方式来做到这一点。

2:24 The word although often introduces a conclusion.  
2:24 虽然这个词通常引出一个结论。

2:25 The word obviously often introduces something that is not obvious.  
2:25 这个词明显经常引入一些不明显的东西。

2:26 The word obviously generally indicates that a conclusion comes next.  
2:26 这个词明显地通常表示接下来会有一个结论。

2:27 The word must is sometimes used to introduce a conclusion.  
有时候，must这个词被用来引出一个结论。

­ment that makes most sense when it follows the word 2:28 When using the “therefore” test, select as the conclusion the statement that makes most sense when it follows the word therefore.  
2:28 当使用因此测试时，选择作为结论的陈述，当它在单词因此之后时，它会使最有意义。

2:29 A conclusion can also be a reason for another conclusion.  
2:29 一个结论也可以成为另一个结论的原因。

Short Answer  
简答题

For each of the following arguments, (a) underline the conclusion twice and (b) draw a circle around any words that clearly indicate that a conclusion comes next. Then (c) underline once each reason offered to support a conclusion and (d) make a box around any words that indicate that a reason comes next. If any proposition is both a reason and conclusion in the passage (an intermediate conclusion), it would then be triple-underlined. If you have any doubt that you have identified the conclusion, use the “therefore” test. Remember that because you are trying to figure out the writer’s intentions, there are sometimes legitimate alternative interpretations, especially because these examples appear out of context. As before, either do all this on a photocopy of these pages or copy the items by hand if your instructor has not made an alternative suggestion.  
对于以下每个论点，(a) 两次划线标出结论，(b) 在任何明确表明结论接下来的词语周围画一个圆圈。然后 (c) 一次划线标出每个支持结论的理由，(d) 在任何表明理由接下来的词语周围画一个方框。如果某个命题在文章中既是理由又是结论（中间结论），则要用三次划线标出。如果你对是否已经确定了结论有任何疑问，请使用“因此”测试。请记住，由于你试图弄清作者的意图，有时可能存在合理的替代解释，特别是因为这些例子是断章取义的。与之前一样，如果你的教师没有提出其他建议，请在这些页面的复印件上完成所有这些操作，或者手工复制这些项目。­cially

2:30 Although he died, the knife stroke was delivered with only moderate  
2:30 虽然他死了，但刀伤只是轻微的

force. We can conclude this because the knife penetrated only 2.5 inches and did not touch any bone.  
我们可以得出这个结论，因为刀子只刺入了2.5英寸，并没有触及任何骨头。

2:31 She must not have intended to kill him. The knife stroke was delivered with only moderate force. So she is not guilty.  
她肯定没有打算杀他。刀刺只用了适度的力量。所以她不是有罪的。

2:32 Obviously she was strong enough to do the job, although she is not very strong. The knife stroke was delivered with only moderate force.  
显然她足够强壮来完成这项工作，尽管她并不是很强壮。刀刃只施加了适度的力量。

2:33 Although Martine was on the scene, she did not see the accident.  
2:33 尽管玛丁在现场，但她没有看到事故发生。

Here’s how I know: Martine always tells us when important things happen, and she did not even mention the accident.  
这是我知道的方法：Martine总是在重要事情发生时告诉我们，而她甚至没有提到这次事故。

2:34 Traffic on Poplar Road must be changed from two-way to one-way.  
2:34 Poplar Road上的交通必须从双向改为单向。

There is too much traffic on this road now and there are frequent collisions.   
现在这条路上交通太拥挤了，经常发生碰撞事故。

**2:35 Because the prosecuting attorney proved conclusively that the defendant killed the victim, it has been proven beyond a reasonable doubt that the defendant performed the act that caused the death of the victim. The first condition for a murder verdict is satisfied.  
2:35 因为检察官已经确凿地证明被告杀害了受害者，所以被告犯下了导致受害者死亡的行为已经被证明无可置疑。谋杀定罪的第一个条件已经满足。**­dant killed the victim, it has been proven beyond a reasonable doubt that the defendant performed the act that caused the death of the vic­tim. The first condition for a murder verdict is satisfied.

**2:36 There is no doubt that a very important feature of our legal system is that a defendant is considered innocent until proved guilty. But the public does not seem to believe this. Obviously we need a broad public-information campaign about that feature of our system.  
2:36 毫无疑问，我们法律体系中非常重要的一个特点是被告在被证明有罪之前被视为无罪。但公众似乎不相信这一点。显然，我们需要开展一项广泛的公众信息宣传活动，介绍我们法律体系中的这一特点。**

**2:37 Jones can never be elected to the presidency. She has a questionable background and has a habit of irritating people with her penetrating questions. This is obvious to me, although I realize that she would make an excellent president. However, we need her on our side. So let’s make her Chair of the Rules Committee.  
琼斯永远不能当选总统。她有一个可疑的背景，而且她有一个让人心烦的习惯，总是用她的深入问题激怒人们。虽然我意识到她会成为一位出色的总统，但这对我来说是显而易见的。然而，我们需要她站在我们这一边。所以让我们让她成为规则委员会主席。**

More Short Answer  
更多简短回答

**2:38 Write out an argument in which you use the words although, obviously, and must.  
2:38 用尽管、显然和必须这些词来写出一个论点。**

**2:39 Are the words but and however conclusion indicators? Give examples to support your answer.  
2:39 这些词语 'but' 和 'however' 是结论指示词吗？请给出例子来支持你的回答。**

Propositions with Two or More Parts  
具有两个或更多部分的命题

A proposition is a complete thought that can be asserted separately and meaningfully by itself. Jane,s baseball glove is missing is a proposition in this sense. So is She went to the park today.  
命题是一个完整的思想，可以单独并有意义地被表述。Jane的棒球手套丢了是在这个意义上的一个命题。她今天去了公园也是一个命题。

Although reasons and conclusions are not always simple separate propositions, they are simple and separate in the following argument:  
尽管原因和结论并不总是简单的单独命题，但在以下论证中它们是简单且分离的。

Example 2:7

Jane’s baseball glove is missing. So she went to the park today.  
简的棒球手套不见了。所以她今天去了公园。

But in the following example, the two propositions that are the reason and the conclusion are combined to make a larger proposition.  
但在下面的例子中，作为原因和结论的两个命题被合并成一个更大的命题。

Example 2:8

Because Jane’s baseball glove is missing, she went to the park today.   
由于简的棒球手套不见了，她今天去了公园。

One important thing to notice about the combination is that the writer is still asserting the two separate propositions: that Jane’s glove is missing and that Jane went to the park today. The writer is also asserting the complex proposition that is the whole of Example 2:8. But consider this complex proposition:  
关于这个组合需要注意的一件重要事情是，作者仍然在断言两个独立的命题：简的手套丢失了，简今天去了公园。作者还在断言整个例子2:8的复杂命题。但请考虑这个复杂命题：

Example 2:9

If Jane’s baseball glove is missing, then she went to the park today.  
如果简的棒球手套不见了，那么她今天去了公园。

Here the writer is not claiming that Jane’s baseball glove is missing, nor that Jane went to the park today. Rather, the writer is only claiming one thing, the whole thing. In Example 2:9, the second part (“she went to the park today”) is not a conclusion for which the writer is arguing. Neither is the first part (“Jane’s baseball glove is missing”) a reason that the writer is offering in support of a conclusion. The writer is only saying that the first part (the “if” part) would, if true, be enough to establish the second part. Although the two propositions can be meaningfully asserted by themselves, they are not separately asserted in Example 2:9.  
在这里，作者并不声称简的棒球手套丢失了，也不声称简今天去了公园。相反，作者只声称一件事，整件事。在例子2:9中，第二部分（她今天去了公园）不是作者要争论的结论。第一部分（简的棒球手套丢失了）也不是作者提供支持结论的理由。作者只是说，如果第一部分（如果部分）为真，就足以证明第二部分。虽然这两个命题可以单独地有意义地断言，但在例子2:9中它们并不是分别断言的。­clusion for which the writer is arguing. Neither is the first

One practical consequence of this is that in identifying reasons and conclusions, you generally do not break if-then propositions into their separate parts. But you do break since, because, although, and other similar propositions into their separate parts because both parts are asserted. Generally, the whole if-then proposition is a reason, or even sometimes the conclusion, but it is always treated as a whole. Often the arguer does in addition want to assert one part or the other of an if-then proposition. But in asserting only the if-then proposition, the arguer is not thereby asserting one or both of its parts.  
这种情况的一个实际后果是，在确定原因和结论时，通常不会将 if-then 命题分解为其各个部分。但是，对于 since、because、although 和其他类似的命题，你会将其分解为各个部分，因为两个部分都被断言。通常，整个 if-then 命题是一个原因，甚至有时是结论，但它总是作为一个整体来处理。通常，辩论者还想要断言 if-then 命题的其中一部分或两部分。但是，在仅断言 if-then 命题时，辩论者并没有因此断言其任何一部分或两部分。

This leads us to the second practical consequence: When you assert an if-then proposition, you ordinarily commit yourself to a relationship between the parts, but you generally do not commit yourself to the truth of the parts. For example, if you asserted the sentence in Example 2:9, you would not thereby commit yourself to Jane’s glove’s being missing, nor to her being in the park. Rather, you would commit yourself to the idea that her glove’s being missing would be sufficient to establish that she went to the park. Furthermore, you would commit yourself to the idea that her not having gone to the park would be enough to establish that her glove is not missing. This last commitment is more difficult to grasp, and will be discussed in Chapter 6.  
这使我们得出第二个实际结果：当你断言一个如果-那么命题时，你通常是在承诺部分之间存在关系，但你通常不承诺部分的真实性。例如，如果你断言示例2:9中的句子，你并不因此承诺简的手套丢失，也不承诺她在公园里。相反，你会承诺她的手套丢失足以证明她去了公园的想法。此外，你会承诺她没有去公园足以证明她的手套没有丢失。最后这个承诺更难以理解，将在第6章中讨论。­mit yourself to the idea that her glove’s being missing would be sufficient to estab­lish that she went to the park. Furthermore, you would commit yourself to the idea that her not having gone to the park would be enough to establish that her glove is not missing. This last commitment is more difficult to grasp, and will be discussed in Chapter 6.

How would you apply these ideas to sentences containing the word when or whenever? Here is an example of such a sentence: “When the Dodgers win, I am happy.” Another: “Whenever it rains, the streets are wet.” Think about it.  
当或每当这些观点出现在包含词语“when”或“whenever”的句子中时，你会如何应用它们？这是一个这样的句子的例子：当道奇队赢得比赛时，我很开心。另一个例子：每当下雨时，街道都湿漉漉的。思考一下。

Figuring Out the Conclusion  
找出结论

Earlier in this unit, we considered some conclusion indicators that are right before your eyes, such as therefore, so, and placement in a passage. Sometimes, however, you must figure out the conclusion that was intended when the clues are less obvious and the “therefore” test does not settle it. The general question to ask is this one: Given the things that the author said and the situation (the S in FRISCO) in which they were said, what makes the most sense for the author to be concluding? I shall suggest three loose criteria to help decide. The first two of these criteria really are just an expansion of the “therefore” test.  
在本单元的早些时候，我们考虑了一些紧接在你眼前的结论指示词，比如因此、所以和在一段中的位置。然而，有时候，当线索不太明显且因此测试无法解决问题时，你必须弄清楚预期的结论。要问的一般问题是：根据作者所说的事情和情境（FRISCO中的S），对作者来说最有意义的结论是什么？我将提出三个宽松的标准来帮助决定。其中前两个标准实际上只是因此测试的扩展。­gest three loose criteria to help decide. The first two of these criteria really are just an expansion of the “therefore” test.

Three Criteria for Identifying Conclusions  
三个判断结论的标准

Consider Paragraph 4 of the prosecutor’s speech:  
考虑检察官演讲的第4段。

­ously, but remember that the knife stroke was not a powerful one. This is because the knife stroke went in only about 2.5 inches and did not touch any bones. The pathologist testified to this.You might think that Arlene is not strong enough to stab someone that seriously, but remember that the knife stroke was not a powerful one. This is because the knife stroke went in only about 2.5 inches and did not touch any bones. The pathologist testified to this.  
你可能认为阿琳不够强壮，无法对某人造成如此严重的刺伤，但请记住，这一刀并不强有力。这是因为刀刃只刺入了大约2.5英寸，并没有触及任何骨头。法医作证证实了这一点。

The conclusion is, “Arlene is strong enough to stab someone that seriously.” I ,et us see how this choice satisfies three criteria for figuring out what the conclusion is. Here is the first criterion:  
结论是，阿琳足够强壮以至于可以刺伤某人。让我们看看这个选择如何满足确定结论的三个标准。这是第一个标准：

1. Usually the conclusion somehow contributes to the author’s goals, the more directly the better.  
   通常结论在某种程度上有助于作者的目标，越直接越好。

Here is the reason for this first criterion: If a conclusion did not in any way con­tribute to the author’s goals, then we would wonder why the author bothered to offer it. (This contribution need not be a narrow one, by the way. The conclusion might just satisfy the author’s curiosity.)

­clusion contributed to his goal.One of the prosecutor’s goals was to make a good case. If Arlene were not strong enough to have done the job, then the case would be very weak, so the conclusion contributed to his goal.  
这是第一个标准的原因：如果一个结论对作者的目标没有任何贡献，那么我们会想知道为什么作者要提供它。（顺便说一句，这个贡献不一定是狭义的，结论可能只是满足了作者的好奇心。）检察官的目标之一是构建一个好的案件。如果阿琳没有足够的能力完成这项工作，那么案件将非常薄弱，所以这个结论对他的目标有所贡献。

Here is the second criterion:  
这是第二个标准。

1. A proposition that is the conclusion is probably supported by one or more others.  
   一个作为结论的命题可能由一个或多个其他命题支持。

Here is the reason for this second criterion. People offering arguments try to make the conclusion follow from, or at least be supported by, the rest of the argument. They usually succeed, so one likely characteristic of a conclusion is that it is supported in the passage. People do not always succeed in supporting their conclusions, so we cannot insist that the conclusion follow from the rest of the argument, or even be supported by it. Furthermore, often several propositions follow from or are supported by the rest of the argument. So this criterion is just a rough one. It gives us a rough necessary condition for something’s being a conclusion.  
这里是第二个标准的原因。提出论证的人试图使结论从论证的其他部分中得出，或者至少得到支持。他们通常会成功，因此结论很可能是在文章中得到支持的。人们并不总是成功地支持自己的结论，因此我们不能坚持认为结论必须从论证的其他部分中得出，甚至得到支持。此外，通常有几个命题从论证的其他部分中得出或得到支持。因此，这个标准只是一个粗略的标准。它给我们提供了一个粗略的必要条件，用于判断某个东西是否是一个结论。­ment. They usually succeed, so one likely characteristic of a conclusion is that it is supported in the passage. People do not always succeed in supporting their conclu­sions, so we cannot insist that the conclusion follow from the rest of the argument,

Consider again the proposition “Arlene is strong enough to stab someone that seriously.” Although it does not necessarily follow from the rest, it follows in the sense that the rest of the paragraph is enough to establish the conclusion.  
再次考虑这个命题：阿琳足够强壮，可以刺伤某人到严重程度。尽管这并不一定从其他内容中推出，但从某种意义上来说，其他段落足以证明这个结论。

­Suppose that we are considering the proposition “The pathologist testified to this” as a possible alternative conclusion. This proposition does not seem to follow from or be supported by the rest of the paragraph. So we do not pick “The pathol ogist testified to this” as the conclusion, even though it comes at the end of the paragraph. Note that the “therefore” test gives the same result.  
假设我们正在考虑这个命题：病理学家作证称这是一个可能的替代结论。这个命题似乎与段落的其他部分无关或无支持。因此，我们不选择将病理学家作证称这是结论，即使它出现在段落的末尾。请注意，因此测试得出相同的结果。­graph. Note that the “therefore” test gives the same result.

Remember that this criterion does not say that the conclusion must actually receive support from the rest of the passage. It says only that if a proposition is not supported by other things in the passage, then it might well not be the conclusion. Here is a case in which a proposition is a conclusion, although it receives little or no legitimate support from the reason that is offered:  
请记住，这个标准并不意味着结论必须实际上得到来自文章其他部分的支持。它只是说，如果一个命题在文章中没有得到其他事物的支持，那么它很可能不是结论。这里有一个案例，其中一个命题是结论，尽管它从所提供的理由中几乎没有得到合理的支持：

“Because the Prime Minister uses Shino Toothpaste, you should use it.”  
因为总理使用Shino牙膏，你也应该使用它。

The conclusion, “You should use it,” is not well-supported, but that does not show that it is not the conclusion. The author of the statement intended, it to be the conclusion.  
结论，你应该使用它，没有得到很好的支持，但这并不意味着它不是结论。陈述的作者打算将其作为结论。

Here is the third criterion:  
这是第三个标准。

1. Generally a conclusion of a passage should use most or all of the passage for its support. If two propositions are supported in a passage, then the one using the greater amount of the passage is probably the conclusion.  
   通常，一篇文章的结论应该使用大部分或全部的内容作为支持。如果一篇文章中支持了两个命题，那么使用更多文章内容的那个命题很可能是结论。

­tribute to the conclusion, then we wonder why that sentence is there. If we pick as the conclusion something that makes that sentence part of the argument, then we no longer have to explain away the presence of that sentence.Can you see the basis for this criterion? I assume that arguers generally have a reason for what they do. If there is a sentence in an argument that does not contribute to the conclusion, then we wonder why that sentence is there. If we pick as the conclusion something that makes that sentence part of the argument, then we no longer have to explain away the presence of that sentence.  
你能看到这个标准的基础吗？我假设辩论者通常有他们所做之事的理由。如果在一个论证中有一个句子对结论没有贡献，那么我们会想知道为什么那个句子存在。如果我们选择一个使得那个句子成为论证的一部分的结论，那么我们就不再需要解释那个句子存在的原因了。

Note that this criterion assumes that people do not include irrelevant material in their arguments. This assumption is sometimes wrong, so this criterion is also a rough one, requiring you to use your judgment.  
注意，这个标准假设人们在他们的论点中不包含无关材料。这个假设有时是错误的，所以这个标准也是一个粗略的标准，需要你运用你的判断力。

Suppose that the two candidates for the conclusion of Paragraph 4 are:  
假设第4段结论的两个候选人是：

1. Arlene is strong enough to stab someone that seriously.  
   阿琳足够强壮，可以刺伤别人严重。
2. The knife stroke was not a powerful one.  
   刀划并不强大。

Each of these follows from other things said in the paragraph. However, we choose A as the conclusion of the paragraph because it uses for its support all of the support that B uses (the last two sentences) and B itself. A uses more of the paragraph for its support than B, so A is the conclusion.  
这些都是根据段落中其他内容得出的。然而，我们选择A作为段落的结论，因为它利用了B使用的所有支持（最后两句话）和B本身作为支持。A利用了比B更多的段落内容作为支持，所以A是结论。

­ing is an argument, what is its conclusion? Why?Let us apply these three criteria to another example. Assuming that the following is an argument, what is its conclusion? Why?  
让我们将这三个标准应用到另一个例子上。假设以下是一个论证，它的结论是什么？为什么？

Defense Attorney: “She did not mean to kill him. She loved him.”  
辩护律师：她并不是有意杀害他。她爱他。

Let us call the first sentence C and the second sentence D:  
让我们将第一句话称为C，第二句话称为D：

1. She did not mean to kill him.  
   她并不是故意杀他的。
2. She loved him.  
   她爱他。

Which is the conclusion? C satisfies the first criterion better than D. It would contribute to the defense attorney’s goals more directly than D. If C is accepted by the jury, that helps to get Arlene acquitted. If D is accepted by the jury, that only helps to get C accepted.   
哪个是结论？C比D更好地满足第一个标准。它比D更直接地有助于辩护律师的目标。如果陪审团接受C，那有助于让Arlene被宣判无罪。如果陪审团接受D，那只有助于C被接受。

Applying the second criterion, each could be used to support the other, but D supports C better than C supports D in this situation. So, by the second criterion, C comes out ahead, though not overwhelmingly. C is better supported in the passage. (Can you think of a situation in which Criterion 2 would support the choice of D?)

On the third criterion, they come out equal. Each could use the other for its support, so each has one other idea in the passage to support it. Each could use all of the rest (in this case “the rest” is only one sentence) for its support.  
根据第二个标准，每个都可以用来支持另一个，但在这种情况下，D支持C的程度要比C支持D的程度更好。因此，根据第二个标准，C更胜一筹，尽管不是压倒性的。在这段文字中，C得到了更好的支持。（你能想到一个情况，第二个标准会支持选择D吗？）在第三个标准上，它们是相等的。每个都可以利用另一个来支持自己，因此每个都有另一个想法在这段文字中支持它。每个都可以利用剩下的部分（在这种情况下，剩下的只有一句话）来支持自己。

Putting the results together, we should choose C as the conclusion, given the trial situation. Note the important role played by the situation (the S in FRISCO) in deciding what the conclusion is.  
综合考虑结果，鉴于试验情况，我们应选择C作为结论。请注意情境（FRISCO中的S）在决定结论时所起的重要作用。

­Apply these criteria to another example, which is part of Item 2:37 in CheckUp 2B:  
将这些标准应用于另一个例子，该例子是CheckUp 2B中2:37项目的一部分。

­ground and has a habit of irritating people with her penetrating questions. This Jones can never be elected to the presidency. She has a questionable background and has a habit of irritating people with her penetrating questions. This is obvious to me, although I realize that she would make an excellent president.  
琼斯永远不能当选总统。她有一个可疑的背景，而且有一个令人讨厌的习惯，就是用她的深入问题激怒人们。这对我来说是显而易见的，尽管我意识到她会是一个出色的总统。

What is the conclusion? Even if you know already, please work through it with me. First of all, the material following the word although is probably not the conclusion, because although is a contrast word. So the proposition “I realize that she would make an excellent president” is not the conclusion. That leaves the first two sentences as possibilities. Let us label them E and F:  
结论是什么？即使你已经知道，也请和我一起思考。首先，虽然后面的材料可能不是结论，因为"虽然"是一个对比词。所以我意识到她会成为一位出色的总统的观点不是结论。这样，前两个句子就成为了可能的结论。让我们给它们标记为E和F：­sion, because

1. Jones can never be elected to the presidency.  
   琼斯永远不能当选总统。
2. She has a questionable background and has a habit of irritating people with her penetrating questions.  
   她有一个可疑的背景，而且她有一个习惯，就是用她刺人的问题惹恼人们。

Which one is the conclusion, if either? The fact that E comes at the beginning counts in favor of its being the conclusion, but that does not settle the matter. Let us apply the three criteria. Because we do not know the situation or the author, we cannot be sure what would contribute to the goals of the author, but E is more likely to contribute directly to someone’s goals than F, so E is slightly favored.  
哪个是结论，如果有的话？E在开头的事实有利于它成为结论，但这并不能解决问题。让我们应用三个标准。由于我们不知道情况或作者，我们无法确定什么会对作者的目标有所贡献，但E更有可能直接对某人的目标有所贡献，所以E稍微更受青睐。­not be sure what would contribute to the goals of the author, but E is more likely to contribute directly to someone’s goals than F, so E is slightly favored.

­sibly be used The most important consideration here is the second criterion. It calls for us to decide which supports which. Could E plausibly be used to support F? Could F plausibly be used to support E? The answers are probably “No” and “Yes,” respectively. E more plausibly follows from the other part than does F. Hence, the selection of E is strongly supported.  
这里最重要的考虑因素是第二个标准。它要求我们决定哪个支持哪个。E能合理地支持F吗？F能合理地支持E吗？答案可能是否和是。E更有可能是从另一部分推导出来的，而不是F。因此，选择E得到了强有力的支持。

Next, let us attempt to apply the third criterion. Because only one part of the argument (E) is supported by the rest, it uses more of the rest for its support than any other part, so E is again preferred.  
接下来，让我们尝试应用第三个标准。因为论证的只有一个部分（E）得到了其他部分的支持，它使用了比其他任何部分更多的支持来支持自己，所以E再次被优先选择。

All the signs point to E’s being the conclusion, and the second criterion points to it very strongly. There is no reason to think that the conclusion has been left unstated. So we should choose E.  
所有的迹象都指向E是结论，并且第二个标准非常明确地指向它。没有理由认为结论没有被表述。因此我们应该选择E。

Unstated Conclusions  
未明示的结论

Sometimes people do not explicitly state their conclusions. You must figure them out by making one or more intelligent guesses and checking them with the “therefore” test or the three conclusion-identification criteria just discussed. The conclusion in Example 2:10 is not stated. Can you figure it out?  
有时人们并不明确陈述他们的结论。你必须通过做出一个或多个聪明的猜测，并通过因此测试或刚刚讨论过的三个结论识别标准来核实它们。例2:10中的结论没有明确陈述。你能猜出来吗？

Example 2:10

If Sean were in school, then the soccer ball would be in the box. But the soccer ball is not in the box.  
如果肖恩在学校，那么足球就会在盒子里。但是足球不在盒子里。­cer ball is not in the box.

The one conclusion that occurs to me is that Sean is not in school. It satisfies the “therefore” test. In the situation in which I heard the argument, it also satisfied the three criteria for identifying conclusions. In that situation, it quite probably was the conclusion.  
我得出的一个结论是Sean不在学校。它通过了因此测试。在我听到这个论点的情况下，它也满足了确定结论的三个标准。在那种情况下，它很可能是结论。

*+ Because in Explanations That Try to  
由于在试图解释中*

Account for Something  
解释某事

The word because (or since) does not always indicate that the other part of the sentence is a conclusion. Sometimes it introduces something that is supposed to account for something else. Then, instead of introducing reasons for conclusions in arguments, it introduces explanatory factors. Here is an example (quoted earlier):  
因为"（或"既然­tence is a conclusion. Sometimes it introduces something that is supposed to account for something else. Then, instead of introducing reasons for conclusions in argu­ments, it introduces explanatory factors. Here is an example (quoted earlier):

She killed him because she loved him.  
她杀了他是因为她爱他。

In the trial, this was an explanation, not an argument. Here the prosecutor was not directly trying to prove that she killed him. Instead, he was trying to explain why she killed him. She loved him was not a reason offered to show that a conclusion is true. Rather, the prosecutor was assuming that she killed him, and was using the proposition “She loved him” to explain why.  
在审判中，这是一个解释，而不是一个争论。在这里，检察官并不是直接试图证明她杀了他。相反，他试图解释为什么她杀了他。她爱他并不是一个用来证明结论正确的理由。相反，检察官假设她杀了他，并使用"她爱他"这个命题来解释为什么。

­tion between arguments and causal explanations. Causal explanations try to account for something. The prosecutor in the example gave a causal explanation of her killing Al. The proposed cause was her love for Al.This distinction between arguments and explanations is sometimes a tricky one, so be wary. Actually, there are several kinds of explanations, and this is only a distinction between arguments and causal explanations. Causal explanations try to account for something. The prosecutor in the example gave a causal explanation of her killing Al. The proposed cause was her love for Al.  
这种论证和解释之间的区别有时候很棘手，所以要小心。实际上，有几种解释，这只是论证和因果解释之间的区别。因果解释试图解释某事。例如，这个例子中的检察官对她杀死艾尔的原因给出了一个因果解释。提出的原因是她对艾尔的爱。

­lows: If the consequence is assumed to be true in the situation, then you probably have a causal explanation. If, in the situation, the speaker is trying to prove the con­sequence, then it is probably an argument. In our example, the consequence (that she killed Al) was assumed to be true, so it was a causal explanation, not an argument.A practical test to distinguish arguments from causal explanations goes as follows: If the consequence is assumed to be true in the situation, then you probably have a causal explanation. If, in the situation, the speaker is trying to prove the consequence, then it is probably an argument. In our example, the consequence (that she killed Al) was assumed to be true, so it was a causal explanation, not an argument.  
一个用于区分论证和因果解释的实际测试如下：如果在情境中假设后果为真，则可能是因果解释。如果在情境中演讲者试图证明后果，则可能是一个论证。在我们的例子中，后果（她杀了阿尔）被假设为真，所以这是一个因果解释，而不是一个论证。

­duced an explanatory motive (a cause or partial cause), then it would have been harder for the jury to believe that she did the deed. In Chapters 8 and 9, we shall look more deeply at the role of explanation in arguments.In a way, of course, the whole explanation was part of an argument offered in support of the conclusion that she is guilty. If the prosecutor could not have produced an explanatory motive (a cause or partial cause), then it would have been harder for the jury to believe that she did the deed. In Chapters 8 and 9, we shall look more deeply at the role of explanation in arguments.  
在某种程度上，当然，整个解释都是为了支持她有罪的结论而提出的一个论证的一部分。如果检察官不能提出一个解释性动机（一个原因或部分原因），那么陪审团更难相信她犯下了这个罪行。在第8章和第9章，我们将更深入地探讨解释在论证中的作用。

The main point for now is that sometimes passages that look like arguments for a particular conclusion are not that at all. Rather, they are attempts to account for a consequence. In such a situation, the goal is not to prove a proposition that might look like a conclusion. Rather, the truth of that proposition (for example, She killed him”) is taken for granted and the passage tries to account for it (that is, to explain why the event happened).  
现在的主要观点是，有时候看起来像是支持某个特定结论的段落实际上并非如此。相反，它们是为了解释一个结果而进行的尝试。在这种情况下，目标并不是证明一个可能看起来像是结论的命题。相反，这个命题的真实性（例如，她杀了他）被视为已经被接受，并且这段文字试图解释它（也就是解释为什么事件发生了）。

If you try to apply FRISCO to an explanation and treat the consequence as the conclusion, you will run into trouble. This is because FRISCO is aimed at deciding whether to accept the conclusion. Generally, in the account-for type of explanation, the proposition that looks like a conclusion is already assumed to be true, so the decision about that proposition is already made.  
如果你试图将FRISCO应用于解释，并将结果视为结论，你将遇到麻烦。这是因为FRISCO的目的是决定是否接受结论。通常，在解释的解释类型中，看起来像结论的命题已经被假定为真，所以对于那个命题的决定已经做出了。­sion about that proposition is already made.

Summary So Far  
迄今为止的摘要

So far in this chapter, the primary concern has been with the first two elements of the FRISCO approach to argument judgment: 1) Focus (identifying the conclusion) and 2) Reasons (identifying the reasons, though not judging them). You have considered indicators that point to the conclusion and reasons in an argument. These include therefore, so, because, and placement in a passage. You have seen and used the “therefore” test. You have also considered three criteria that are more precise than the “therefore” test:  
在本章中，主要关注FRISCO方法论中论证判断的前两个要素：1）焦点（确定结论）和2）理由（确定理由，但不对其进行评判）。您已经考虑了指向论证结论和理由的指示物。这些指示物包括因此、所以、因为和在文章中的位置。您已经见过并使用了因此测试。您还考虑了比因此测试更精确的三个标准。­fore” test. You have also considered three criteria that are more precise than the “therefore” test:

1. A conclusion is likely to contribute to the author’s goals.  
   结论很可能有助于作者的目标。
2. A proposition that is the conclusion is probably supported by one or more others.  
   一个作为结论的命题可能由一个或多个其他命题支持。
3. ­port. If two propositions are supported in a passage, then the one using a greater amount of the passage is probably the conclusion.Generally, a conclusion should use most or all of the passage for its support. If two propositions are supported in a passage, then the one using a greater amount of the passage is probably the conclusion.  
   通常，结论应该使用大部分或全部的段落作为支持。如果一个段落中支持了两个命题，那么使用更多段落的那个命题很可能是结论。

The “therefore” test and the three criteria can also be used in identifying conclusions that are not explicitly stated. Make one or more intelligent guesses, and apply the test or criteria.  
因此测试和三个标准也可用于确定未明确陈述的结论。进行一个或多个智能猜测，并应用测试或标准。­

You have seen that the two parts of an if-then proposition are generally treated as one whole unit, although those parts are often asserted or denied at another point. You have seen that if-then propositions can be reasons and conclusions of arguments.  
你已经看到，if-then命题的两个部分通常被视为一个整体，尽管这些部分经常在另一个地方被断言或否认。你已经看到，if-then命题可以是论证的理由和结论。

+You have also seen that the words because and since do not always introduce reasons in arguments. Sometimes, they introduce propositions that are intended to explain why something occurred. That is, they introduce propositions that are intended to account for something else, not prove it.  
你还看到了，因为和既然这两个词并不总是用来引出论证中的原因。有时候，它们引出的是旨在解释为什么发生某事的命题。也就是说，它们引出的是旨在解释其他事物的命题，而不是证明它。

­cation of someone else’s conclusion is a matter about which reasonable people might differ. For example, you might reasonably differ with some of the proposed answers As a result of your study of this chapter so far, you should be more adept at picking out conclusions and the reasons offered to support them. When it is not your own conclusion that you are identifying, it is not always possible to be confident that you have succeeded in identifying it. The intentions of other people are sometimes difficult to discern, and some writers and speakers are just not clear. So the identification of someone else’s conclusion is a matter about which reasonable people might differ. For example, you might reasonably differ with some of the proposed answers at the end of this chapter. Still, you should have more justified confidence in your ability to identify the parts of an argument.  
由于您对本章的学习，您应该更擅长挑选出结论和支持它们的理由。当您识别的不是您自己的结论时，您并不总是能够确定您是否成功地识别出它。他人的意图有时很难辨别，有些作者和演讲者表达不清楚。因此，识别他人的结论是一个有争议的问题。例如，您可能会对本章末尾提出的一些答案有不同意见。尽管如此，您应该更有理由相信自己能够识别出一个论证的各个部分。

This identification of conclusions and reasons is related to the other elements of critical thinking. That is, you sometimes need to judge the inferences in order to guess what it would have been reasonable for the author to have concluded. So you also had a little practice in this chapter at making decisions about whether to accept the reasons and the inferences in an argument. The rest of this book focuses on these decisions.  
这种对结论和原因的辨识与批判性思维的其他要素有关。也就是说，有时候你需要判断推理，以猜测作者可能得出的合理结论。因此，在本章中，你也有一些实践机会，来决定是否接受论证中的理由和推理。本书的其余部分将专注于这些决策。

Check-Up 2C

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**2:40 The conclusion is likely to contribute somehow to the author’s goals.  
2:40 这个结论很可能在某种程度上对作者的目标有所贡献。**

**2:41 If two propositions are supported in a passage and both contribute to the author’s goals, then the one using a greater amount of the passage for its support is probablv the conclusion.  
如果一个段落中支持了两个命题，并且两个命题都对作者的目标有贡献，那么使用更多段落来支持的命题很可能是结论。**

**2:42 The parts of an if-then proposition are generally not asserted separately in the proposition, although they might elsewhere be asserted separately.  
2:42 if-then命题的部分通常不会在命题中单独断言，尽管它们可能在其他地方被单独断言。**­

**2:43 An if-then proposition can be the conclusion of an argument.  
2:43 如果-那么命题可以成为一个论证的结论。**

**2:44 An if-then proposition can be a reason in an argument.  
2:44 如果-那么命题可以成为一个论证中的理由。**

**2:45 The word because always introduces a proposition that serves as a reason in an argument.  
2:45 因为这个词总是在论证中引入一个作为原因的命题。**­

**2:46 The “if” part of a proposition is a reason in an argument containing the proposition.  
2:46 提议中的if部分是包含提议的论证中的一个原因。**

**2:47 The “because” part of a proposition generally cannot be separated off and called a reason.  
2:47 一般情况下，命题的因果部分不能被分离出来并称为原因。**

Short Answer  
简答题

For each of the following arguments, underline, circle, and box as before. If the final conclusion is not explicitly asserted on its own, add what you think is the final conclusion and underline it twice. As before, either photocopy these pages and present the marked photocopies or copy them by hand if your instructor has not made other arrangements.  
对于以下每个论点，像之前一样，用下划线、圈圈和方框标出。如果最终结论没有明确陈述，自行添加你认为的最终结论并用双下划线标出。同样，如果你的教师没有其他安排，可以复印这些页面并呈交标记的复印件，或者手写复制它们。­

**2:48 If vou boil an egg at high altitude, then it takes much longer to cook it. Therefore, you should boil this egg for a long time.  
如果你在高海拔地区煮鸡蛋，那么它需要更长的时间来煮熟。因此，你应该把这个鸡蛋煮很长时间。**

**2:49 If Monique’s room has light-colored walls, then it is well-lighted.  
2:49 如果莫妮克的房间有浅色的墙壁，那么它是明亮的。**

Because Mr. Martinez says that her room is not well-lighted, we can conclude that it does not have light-colored walls.  
因为马丁内斯先生说她的房间光线不好，我们可以得出结论，房间没有浅色的墙壁。

**2:50 If the public does not realize that people are to be considered innocent until proven guilty, then there will continue to be mistreatment of perfectly innocent people Hence we need a broad publicinformation campaign about this feature of our system.   
2:50 如果公众没有意识到人们在被证明有罪之前应被视为无罪，那么对完全无辜的人将继续存在虐待。因此，我们需要一场关于我们体制这一特点的广泛公众信息宣传活动。**­­information campaign about this feature of our system.

­ple who are sensitive should make a special effort to help those who are not. Generally, this means that women should make a special effort to help men to be more sensitive. I say this even though some might feel that it places an unfair burden on women.2:51 Men generally have difficulty being sensitive to others. If it is desirable for our society to consist of fully developed human beings, then people who are sensitive should make a special effort to help those who are not. Generally, this means that women should make a special effort to help men to be more sensitive. I say this even though some might feel that it places an unfair burden on women.  
2:51 男性通常很难对他人敏感。如果我们的社会希望由完全发展的人构成，那么敏感的人应该特别努力帮助那些不敏感的人。一般来说，这意味着女性应该特别努力帮助男性变得更加敏感。尽管有些人可能觉得这对女性不公平，但我仍然这样说。

2:52 Women generally do not have confidence in themselves, or else they find it difficult to maintain confidence. Therefore, if we are to achieve true equality, hiring preference should be given to women in cases where men outnumber women. To some people this might at first appear to be unfair to men, but I think that on reflection they will change their minds.  
2:52 女性通常对自己缺乏信心，否则她们会发现保持信心很困难。因此，如果我们要实现真正的平等，在男性人数超过女性的情况下，应该优先雇佣女性。对于一些人来说，这可能一开始对男性不公平，但我认为经过思考后，他们会改变想法。

More Short Answer  
更多简短回答

For each of the following arguments, pick the conclusion of the whole argument and tell why you think it is the conclusion.  
对于以下每个论证，请选择整个论证的结论，并告诉我为什么你认为它是结论。

2:53 Prosecutor: Tom Jeffers did not do the deed. He was in the hospital at the time.  
2:53 检察官：汤姆·杰弗斯没有做这件事。他当时在医院里。

­ened to kill her.2:54 Defense Attorney: She was defending herself against attack. He threatened to kill her.  
2:54 辩护律师：她是在自卫，对抗攻击。他威胁要杀了她。

2:55 Juror: She said that he said that he would kill her. But if he had wanted to kill her, he would have done so before they got in the house. He had plenty of time and a good opportunity. (Note: This argument was used in convicting her of voluntary manslaughter.) 2:56 Another juror: The pathologist testified that the knife stroke was only of medium strength. Arlene did not think that she would cause him great bodily harm. She did not commit murder. (Note: The possibility that this is a good argument persuaded the jury to decide that she was not guilty of murder.)

Longer Answer  
更长的答案

2:57 Pick the argument of either 2:51 or 2:52 and in about one page apply the six-element FRISCO approach, defending your decision with your reasons. Except for judging the reasons, you have already done the “FR” part. Be prepared to present your analysis, decision, and reasons to the rest of the class.  
2:55 陪审员：她说他说他要杀了她。但如果他真的想杀她，他们进屋之前他早就会这么做了。他有足够的时间和良好的机会。（注：这个论点被用来判她犯有自愿杀人罪。） 2:56 另一名陪审员：病理学家证明刀伤只有中等力度。阿琳认为她不会给他造成严重伤害。她没有犯谋杀罪。（注：这个论点可能是一个好的论据，使陪审团决定她无罪。） 更长回答2:57 选择2:51或2:52的论点，并在大约一页的篇幅内应用六要素FRISCO方法，用你的理由来辩护你的决定。除了评判理由，你已经完成了FR部分。准备好向班上其他同学展示你的分析、决定和理由。

2:58 Find a very short argument on a newspaper editorial page. Cut it out and do the standard underlining, circling, and drawing of rectangles. If you need to add the conclusion, do so. Then apply the rest of the FRISCO approach to the argument (as well as you can at this time)

­sions, and reasons to the class.- and report your results in writing. Be sure to include your reasons in defense of your decision. Be prepared to present your analysis, decisions, and reasons to the class.  
2:58 在报纸社论版上找到一个非常短的论点。剪下来并进行标记、圈出和画矩形的标准操作。如果需要添加结论，请添加。然后按照FRISCO方法对论点进行分析（尽力而为），并以书面形式报告你的结果。确保在辩护决策时包含你的理由。准备好向班级展示你的分析、决策和理由。

Still More Short Answers for More Practice  
更多练习的简短答案

­self if it is not explicitly asserted in the passage.Here are some more arguments. Identify, underline, circle, box and report your results just as before, remembering that you might have to state the conclusion yourself if it is not explicitly asserted in the passage.  
这里有一些更多的论点。像之前一样，识别、下划线、圈出、框起并报告你的结果，记住如果在文章中没有明确陈述结论，你可能需要自己陈述结论。

Remember that because you are trying to figure out writers’ intentions, there might be several legitimate interpretations. Sometimes, there is more than one good answer. For some of the odd-numbered items, proposed answers are deliberately omitted in order to give you more realistic practice.  
记住，因为你试图弄清楚作者的意图，可能会有几种合理的解释。有时，可能会有多个正确答案。对于一些奇数项，故意省略了提出的答案，以便给你更真实的练习。

**2:59 Although the sun is shining brightly now, it will be raining before nightfall. Mr. Roberts, our dependable TV weatherman, said so. So we had better postpone our picnic.  
2:59 虽然太阳现在照得很亮，但到了夜晚之前会下雨。我们可靠的电视天气预报员罗伯茨先生这样说的。所以我们最好推迟野餐。**

**2:60 So many kids are getting high school diplomas even though they cannot read. College graduates do not understand percentages. Adults cannot read directions. The solution is simple: The schools should attend to their primary job, the development of basic skills and the intellectual virtues. Because they cannot both do this job well and devote all the resources that are currently devoted to athletics, busing, music, and making students happy, we must conclude that such things should be dropped. Homes, neighborhoods, and religious institutions are able to perform these functions.  
2:60 这么多孩子拿到了高中文凭，但他们无法阅读。大学毕业生不懂百分比。成年人无法阅读说明书。解决方法很简单：学校应该专注于他们的主要工作，即基本技能和智力品质的发展。因为他们无法同时做好这项工作并投入目前用于体育、校车、音乐和让学生快乐的所有资源，我们必须得出这样的结论：这些事情应该被放弃。家庭、社区和宗教机构能够履行这些职能。**­not read. College graduates do not understand percentages. Adults cannot read directions. The solution is simple: The schools should attend to their primary job, the development of basic skills and the intellectual virtues. Because they cannot both do this job well and devote all the resources that are currently devoted to athletics, busing, music, and making students happy, we must conclude that such things should be dropped. Homes, neighborhoods, and religious institutions are able to perform these functions.

**2:61 Too many parents are not equipped to provide students with these necessities in development. For various reasons, neighborhoods and religious institutions cannot do the job. The schools, then, must assume these tasks. If not, these educational tasks will not be performed.  
2:61 太多的父母没有能力为学生提供这些发展所需的必要条件。出于各种原因，社区和宗教机构无法胜任这项工作。因此，学校必须承担起这些任务。如果不这样做，这些教育任务将无法完成。**

**2:62 If I do my homework now, I’ll miss band practice. If I do it later, my friend’s feelings will be hurt. Both of these consequences are unacceptable. The conclusion is obvious.  
如果我现在做作业，我会错过乐队练习。如果我晚点做，我的朋友会受伤。这两种后果都是不可接受的。结论是显而易见的。**­able. The conclusion is obvious.

**2:63 Shakespeare never intended Iago to be a melodramatic villain. If he had, then Iago’s wife would have been neither so trusting throughout the play Othello nor so surprised when she found out the evil things he had done.  
莎士比亚从未打算让伊阿古成为一个夸张的恶棍。如果他这样做了，那么伊阿古的妻子在《奥赛罗》这个剧中既不会如此信任他，也不会在发现他所做的邪恶事情时感到如此惊讶。**

2:64 The signers of the Declaration of Independence did not intend to claim that men and women should be considered equal. For one thing, they used the word men in the statement, “All men are created equal.” For another, it is a historical fact that men and women were not considered equal in 1776 and nothing was done in those days to ensure equal treatment. Women were not even guaranteed the right to vote in the United States until 1920.  
《独立宣言》的签署者并没有打算声称男性和女性应该被视为平等。首先，他们在声明中使用了“男性”一词，即“所有男性生而平等”。其次，历史事实是，1776年男性和女性并未被视为平等，而且在那个时代没有采取任何措施确保平等待遇。直到1920年，妇女在美国甚至没有被保证投票权利。

2:65 With these dim streetlights, there is a greater chance ofcrime. The accident rate is clearly higher than it should be. Furthermore, these streetlights, being easy to break, are often damaged by vandals. Mercury-vapor cobra-type streetlights would cost the city very little because the state and federal governments would pay most of the bill. Such streetlights would provide much more light and be vandal-proof. Need I say more?  
这些昏暗的路灯，犯罪的机会更大。事故率明显高于应有的水平。此外，这些容易被破坏的路灯经常遭到破坏者的破坏。汞蒸气眼镜蛇式路灯对城市来说成本很低，因为州和联邦政府将支付大部分费用。这样的路灯会提供更多的光线，并且不易被破坏。我还需要说什么吗？

­pose, and prohibits the use in research of stray dogs and cats (who would otherwise be put to sleep anyway). It is time to choose between human beings and animals. I choose human beings.2:66 NO TO S.B. 833: As the parent of a six-year-old with cystic fibrosis, I urge you to oppose Senate Bill 833 because it would make research on diseases such as cystic fibrosis, cancer, AIDS, and nephrosis much more expensive. Consequently, less research would be done. The bill requires that animals used in research be bred and raised for that purpose, and prohibits the use in research of stray dogs and cats (who would otherwise be put to sleep anyway). It is time to choose between human beings and animals. I choose human beings.  
2:66 NO TO S.B. 833: 作为一个六岁患有囊性纤维化的孩子的父母，我敦促您反对参议院议案833，因为它将使囊性纤维化、癌症、艾滋病和肾病等疾病的研究变得更加昂贵。因此，将会减少研究。该议案要求用于研究的动物必须专门繁殖和饲养，并禁止使用流浪狗和猫进行研究（否则它们将被安乐死）。现在是选择人类还是动物的时候了。我选择人类。

*Note: Underlining reasons and conclusions and circling and boxing indicators are complicated tasks for this one, so do not be surprised if you find it frustrating. The alternate system that you are about to encounter is, I believe, easier to use for such complex arguments. In any case, in practical situations some simplification is in order. You might want here simply to identify the main conclusion, the indicators, and the reasons, without distinguishing intermediate conclusions.  
注意：划线标出原因和结论、圈出和方框标示符号对于这个任务来说是复杂的，所以如果你发现它令人沮丧，不要感到惊讶。你即将遇到的备选系统，我相信对于这样复杂的论证更容易使用。无论如何，在实际情况下，需要进行一些简化。你可能只想在这里简单地确定主要结论、指示符和原因，而不区分中间结论。*

Medium Answer  
中等答案

For each of the following arguments (included with permission of the New York Times), identity the conclusion and write a paragraph or two defending your belief that the proposition you have identified is actually the conclusion intended by the writer.  
对于以下每个论点（经纽约时报许可），请确定结论并写一两段来捍卫您的观点，即您认为作者实际上想要表达的命题。

**2:67 PERFORMANCE IS UP, BUT NOT REPUTATION: The public perception is that public schools are flunking. Magazine covers picture an enterprise in disarray. University professors complain, from a safe distance, of an educational wasteland. And why not? Have not reading and Scholastic Aptitude Test scores declined steadily for 18 years?  
2:67 表现提升，但声誉未见改善：公众普遍认为公立学校不合格。杂志封面描绘了一片混乱的景象。大学教授们从安全距离处抱怨教育荒漠。难道不是阅读和学术能力测试成绩连续18年下降吗？**

But most public perception about those things, including education, tends to lag behind reality. It ignores the indicators that for more than a year have been showing an encouraging upward trend in school performance. Reading scores in New York and a number of other cities have taken a decided turn for the better. New Jersey recently reported improvements throughout its entire system.  
但是大多数公众对这些事物的认识，包括教育在内，往往滞后于现实。它忽视了一系列指标，这些指标已经超过一年显示出学校表现的积极向上趋势。纽约和其他一些城市的阅读成绩已经明显好转。新泽西最近报告了整个教育系统的改善。­

Nationally, last year’s SAT scores have held steady for the first time after almost two decades of decline. But it is fair to suggest that a new emphasis on good teaching and diligent study has had some effect. So, perhaps, has the shelving of pedagogical theory that accorded value to anvthing students found relevant, or fun.  
全国范围内，去年的SAT成绩在近20年的下降后首次保持稳定。但可以公正地认为，对良好教学和勤奋学习的新强调可能产生了一些影响。也许，将赋予学生发现相关或有趣事物的教学理论搁置也起到了一定作用。

The nation’s schools still have a long way to go to deserve unqualified cheers. But they are starting to succeed again. What a terrible time for people to perceive public education as a lost cause and withdraw adequate support.  
国家的学校仍然有很长的路要走才能值得毫无保留地欢呼。但是它们正在再次取得成功。对于人们来说，现在认为公共教育是一种无望的事业并撤回适当的支持，真是一个糟糕的时机。­­

**2:68 DISQUALIFIED: Donald Lan is the Secretary of State of New Jersey, which means that he must review the returns of Tuesday’s still- undecided election for governor. Mr. Lan is in a curious position, since he was not only an early contender in the Democratic gubernatorial primary, but later became deputy campaign manager for the Democratic candidate, James Florio.  
2:68 被取消资格：唐纳德·兰是新泽西州的国务卿，这意味着他必须审查周二仍未决定的州长选举的结果。兰先生处于一个奇特的位置，因为他不仅是民主党州长初选的早期竞争者，而且后来成为民主党候选人詹姆斯·弗洛里奥的副竞选经理。**

Mr. Florio and the Republican contender, Tom Kean, agree that every effort should be taken to ensure the legitimacy of the ultimate result. That means Mr. Lan ought to step aside. We do not question his honesty, only the appearances. With a near-dead heat for the top office of the state, the appearances of having a partisan certify the results are dead wrong.  
弗洛里奥先生和共和党候选人汤姆·基恩都认为应该采取一切努力确保最终结果的合法性。这意味着兰先生应该退让。我们不质疑他的诚实，只是对外界的看法。在州长选举中，竞争如此激烈，让一个党派人士认证结果的做法是完全错误的。

An Alternative:  
一个替代方案

Diagramming the Whole Argument  
整理整个论证

Sometimes it helps to draw an arrow diagram of an argument in order to make sure you know how the parts are related to each other. The steps are as follows:  
有时候，画一个论证的箭头图可以帮助你确保你知道各个部分之间的关系。步骤如下：

1. Enclose each assertion in angle brackets. Then label each assertion with a letter and circle the letter when you put it in the diagram.  
   在每个断言周围加上尖括号。然后用字母标记每个断言，并在将其放入图表中时将字母圈起来。
2. Start a diagram by putting the letter for the conclusion at the top.  
   从顶部开始，将结论的字母放在图表中。
3. Put the letter(s) for the reason(s) underneath and arrange them in a way that shows what supports what. Show the connections with arrows pointing in the direction of support (up).  
   将原因的字母放在下面，并以显示支持关系的方式进行排列。用箭头指向支持的方向（向上）。­ing in the direction of support (up).

Here is an example, using the defense attorney’s argument for her innocence (I have inserted the letters A and B).  
这是一个例子，使用辩护律师为她的无罪辩护（我已经插入了字母A和B）

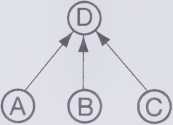
(A) <My client is innocent of the charge of murder> because (B) <she was defending herself against an attack>.  
我的客户对谋杀指控是无辜的"，因为"她是在自卫之下进行防护

In the diagram of this simple argument, we put the letter A above the letter B and draw an arrow from B up to A. This shows that B is offered in support of A.  
在这个简单论证的图示中，我们将字母A放在字母B的上方，并从B画一条箭头指向A。这表明B是对A的支持。



If two or more reasons are offered in support of a conclusion, they all appear below it with arrows going up to it showing their support, as in the following example:  
如果有两个或更多的理由支持一个结论，它们都会出现在结论下方，并用箭头指向它，显示它们的支持，如下面的例子所示：

Paragraph 3: (A) <The pathologist who examined the body said that there was only one knife wound> and (B) <that was in Al’s chest>. (C) <The pathologist also said that this one knife wound was the cause of death>. (D) <Arlene,s knife stroke must have caused his death>.  
Paragraph 3: "第三段：(A) 尸检医生说，只有一处刀伤，(B) 在阿尔的胸部。(C) 尸检医生还说，这一处刀伤是死因。(D) 阿琳的刀击必然导致了他的死亡。"



In drawing this diagram, I omitted a refinement that I shall soon discuss.  
在绘制这个图表时，我省略了一个我很快会讨论的细节。

If one thing supports another, which in turn supports a third, then they make a chain, as in the following argument:  
如果一件事情支持另一件事情，而后者又支持第三件事情，那么它们形成一个链条，就像以下的论证一样。

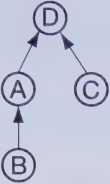
(A) <He threatened to kill her>. (B) <She was defending herself against attack>.  
他威胁要杀了她。" "她是在自卫对抗攻击。

(C) <She must be innocent>.



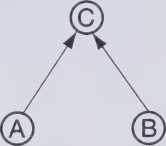
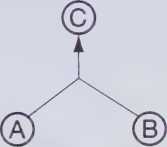
Here is a more complicated one. Check to make sure that you see why each part of the diagram is the way it is.   
这是一个更复杂的例子。请确保你明白图表的每个部分为什么是这样的。

Paragraph 2: (A) <The most important fact is that on the witness stand she admitted stabbing him>. (B) <She said that she picked up the knife and stabbed him in the chest with it>. Obviously (C) <she would not have admitted it if she had not done it>. Hence, (D) <she did stab him>.  
Paragraph 2: (A) "最重要的事实是，在证人席上她承认刺伤了他。" (B) "她说她拿起刀子并用它刺伤了他的胸部。" Obviously (C) "如果她没有做过，她就不会承认了。" Hence, (D) "她确实刺伤了他。"



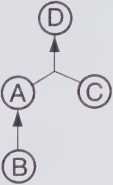
Note that in judging that B was offered in support of A, I neglected the first six words in A. Do you think I was justified in doing so? I again omitted the refinement that I shall soon discuss.  
注意，在判断B是为了支持A而提供的时候，我忽略了A中的前六个词。你认为我这样做是合理的吗？我再次省略了我即将讨论的细化内容。

­rate, if it suits your taste. You could even turn the diagrams upside down and call them tree diagrams. This is often done. The main thing is to use it as a tool to rep­resent what you think are the intentions of the writer. Feel free to modify it in what­ever way seems helpful. If you want to leave out such unnecessary words as This system for diagramming arguments can be changed or made more elaborate, if it suits your taste. You could even turn the diagrams upside down and call them tree diagrams. This is often done. The main thing is to use it as a tool to represent what you think are the intentions of the writer. Feel free to modify it in whatever way seems helpful. If you want to leave out such unnecessary words as obviously, then do so. If it helps you to combine or separate different assertions, then do so. One refinement I like is to distinguish between two ways in which a pair of propositions can support another: jointly (in cooperation) or separately (independently), as in the following diagrams, in which A and B support C jointly and independently:  
这种用于绘制论证图的系统可以根据您的口味进行更改或增加细节。您甚至可以将图表颠倒过来，并称其为树状图。这种做法经常被采用。最重要的是将其用作表达您认为作者意图的工具。请随意根据需要进行修改。如果您想要省略一些显然不必要的词语，那么请这样做。如果将不同的断言组合或分离有助于您，那么请这样做。我喜欢的一个改进是区分一对命题支持另一对命题的两种方式：联合支持（合作）或独立支持（独立），如下图所示，其中A和B同时和独立地支持C：­tions can support another: jointly (in cooperation) or separately (independently), as in the following diagrams, in which A and B support C jointly and independently:



­cult to tell whether the person making the argument intended the reasons to join together to support the conclusion. A suggestion: If in doubt, diagram them as inde­pendent reasons.In my suggested diagrams, I shall use this refinement, and recommend it to you. However, one difficulty with using this refinement is that it is sometimes difficult to tell whether the person making the argument intended the reasons to join together to support the conclusion. A suggestion: If in doubt, diagram them as independent reasons.  
在我建议的图表中，我将使用这种细化，并向您推荐。然而，使用这种细化的一个困难是有时很难确定提出论证的人是否打算让这些理由共同支持结论。建议：如果有疑问，请将它们作为独立的理由进行图表化。

­cutor’s speech would look like this:Using this joint system, the previous argument from Paragraph 2 in the prosecutor’s speech would look like this:  
使用这个联合系统，检察官演讲中第2段的先前论点将如下所示：



Another refinement is to add what you think are unstated assumptions. However, it is often difficult to identify unstated assumptions in a way that is fair to the arguer, so beware. The process of identifying assumptions is discussed in Chapter 7, but here is an example;  
另一个改进是添加您认为未明示的假设。然而，要公平地确定未明示的假设往往很困难，所以请小心。识别假设的过程在第7章中有所讨论，但这里有一个例子；

Example 2:11 (based on Item 2:15)

Argument:  
争论：

(A) <Eggs boiled at high altitude take much longer to cook>. Therefore, (B) <you should boil this egg for a longer time>.  
高海拔地区煮鸡蛋需要更长时间。因此，你应该把这个鸡蛋煮久一点。

Possible unstated assumption:  
可能的未明示假设：

(C) <We are at a high altitude>.  
我们处于高海拔地区。

A diagram might look like this, using the joining-together system and using square brackets to indicate the unstated assumption:  
一个图表可能看起来像这样，使用连接系统并使用方括号来表示未明示的假设：

®

In general, if you do add something that is not explicitly there, mark it with square brackets ([,]).  
一般来说，如果您添加了未明确提及的内容，请用方括号（[ ]）标记。

­rate Feel free to use any other refinement that you find helpful. But make sure that you make clear what your refinement means. Also remember that you cannot separate if-then sentences and treat the parts as asserted separately unless the author did so, or intended to do so.  
随意使用任何其他改进，只要你确保清楚地说明你的改进意味着什么。同时记住，除非作者这样做或者有意这样做，否则你不能将if-then句子分开并将其部分作为单独的断言处理。

This system only gives a picture of an argument. It does not tell you how strong the argument is. But such a diagram can often help you decide whether to accept an argument because the picture makes the argument more clear. For example, when the reasons join together, if one is false, the other loses its force.  
这个系统只是给出了一个论点的图像。它并不告诉你这个论点有多强。但是这样的图表通常可以帮助你决定是否接受一个论点，因为图像使得论点更加清晰。例如，当理由相互连接时，如果其中一个是错误的，另一个就会失去说服力。

The way to learn to make arrow diagrams is to practice. Do the first set in the Check-Up and compare it with my suggested answers. Then do the second set and compare, and so on. Some answers are deliberately omitted because discussion of arrow diagrams without an “authoritative” answer can be valuable to you. If some seem like busywork, then skip them. The ones at the end will be challenging. Remember that there are different ways of diagramming the same argument because you are trying to represent the writer’s intentions, and there are often legitimately different interpretations of people’s intentions, especially when you do not know the writer or the situation.  
学习制作箭头图的方法是进行实践。首先完成检查并将其与我的建议答案进行比较。然后完成第二组并进行比较，依此类推。有些答案是故意省略的，因为在没有权威答案的情况下讨论箭头图可能对您很有价值。如果有些看起来像繁琐的工作，可以跳过它们。最后几个将会具有挑战性。请记住，由于您试图代表作者的意图，因此有多种不同的方式来绘制相同的论证，尤其是当您不了解作者或情况时，人们的意图往往有合理的不同解释。

Check-Up 2D

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows you understand.   
如果为假，请将其更改为真。尝试以显示您的理解方式进行更改。

**2:69 Making an arrow diagram of an argument does not tell you how strong the argument is.  
制作一个箭头图并不能告诉你这个论点有多强。**

**2:70 In the system described here, the letter for the conclusion always goes at the top.  
在这个描述的系统中，结论的字母总是放在顶部。**

**2:71 In a three-part argument chain, the intermediate conclusion goes in the middle (in the system described here).  
在一个三部分的论证链中，中间结论放在中间（在这里描述的系统中）**

Short Answer  
简答题

For Items 2:72 through 2:83, make an arrow diagram for each of the arguments in Items 2:12 through 2:23. Label the propositions in order of appearance, with A, B, etc. The first is done as an example:  
对于2:72至2:83的项目，为2:12至2:23中的每个论点制作一个箭头图。按照出现的顺序标记命题，使用A、B等。第一个作为示例已完成：

**2:72 (A) <Jane’s baseball glove is missing>. So (B) <she went to the park today>.  
2:72 (A) <简的棒球手套不见了>。所以 (B) <她今天去了公园>。**



More Short Answer  
更多简短回答

For Items 2:84 through 2:91, do the same thing with Items 2:30 through 2:37.  
对于2:84到2:91的项目，用2:30到2:37的项目做同样的事情。

Still λlore Short Answer  
仍然λlore简短回答

For Items 2:92 through 2:100, do the same thing with Items 2:48 through 2:56.  
对于2:92到2:100的项目，与2:48到2:56的项目做同样的事情。

Still More  
仍然更多

For Items 2:101 through 2:107, do the same thing with Items 2:59 through 2:65. Write out the final conclusion if it is not explicitly asserted.  
对于2:101至2:107的项目，对2:59至2:65的项目做同样的事情。如果没有明确声明，写出最终的结论。

Even More  
更多

For Items 2:108 through 2:109, do the same with Paragraphs 5 and 6 of the prosecutor’s summary argument.  
对于第2:108至2:109项，与检察官总结陈述的第5和第6段做相同处理。­

And Finally  
最后

For Items 2:110 through 2:112, do the same thing for Items 2:66 through 2:68. These are difficult but realistic. They are a real test of your diagramming ability and of the value of arrow diagrams to you. If you need to simplify in order to see the big picture, do so.  
对于2:110到2:112项，对2:66到2:68项做同样的事情。这些是困难但现实的。它们是对你的图表能力和箭头图对你的价值的真正考验。如果你需要简化以便看到整体情况，请这样做。

Longer Answer  
更长的答案

**2:113 Find an argument in a short editorial, a “Dear Abby” selection, or a letter to an editor. You may use one that you have previously used in this course. Cut it out or copy it.  
2:113 在一篇简短的社论、亲爱的艾比（Dear Abby）选集或给编辑的信中找到一个论点。你可以使用在这门课程中之前使用过的一个。剪下或复制它。**

1. Underline the final conclusion twice.  
   划线标出最终结论两次。
2. Bracket the propositions and assign letters to them.  
   将命题括起来并为它们分配字母。
3. Represent the argument pictorially in an arrow diagram.   
   用箭头图形来图示论点。

Suggested Answers for Chapter 2  
第二章的建议答案

Reminder: In some cases, different answers are as good as the ones given. If one of your answers is different from the one suggested, then either try to satisfy yourself that yours really is all right, or else try to figure out why it is not.  
提醒：在某些情况下，不同的答案和给出的答案一样好。如果你的答案与建议的答案不同，要么试着确信你的答案是正确的，要么试着弄清楚为什么不是。

Check-Up 2A

2:1 F 2:2 T 2:3 T 2:4 F 2:5 T 2:6 F 2:7 T

2:1 The conclusion often comes at the beginning or end of a passage.  
2:1 结论通常出现在一段的开头或结尾。

2:4 If a sentence does not appear at the beginning or end of a passage, it still might be the conclusion.  
如果一个句子不出现在段落的开头或结尾，它仍然可能是结论。

2:6 The word so often introduces a conclusion.  
2:6 这个词经常引出一个结论。

2:8 It is preceded by the word so and the rest of the paragraph supports this statement.  
2:8 它之前有一个so字，而段落的其余部分支持这个陈述。

2:9 The knife stroke was not a powerful one.  
2:9 刀刃并不强大。

2:10 One possible example: She killed Al. So she performed the act that caused Al’s death.  
2:10 一个可能的例子：她杀了Al。所以她执行了导致Al死亡的行为。

­sion must be true if the prosecutor is to get a conviction. Also, the rest of the paragraph supports this conclusion.2:11 “Arlene is strong enough to stab someone that seriously.” This conclusion must be true if the prosecutor is to get a conviction. Also, the rest of the paragraph supports this conclusion.  
2:11 阿琳足够强大，能够刺伤某人至重伤。如果检察官要获得定罪，这个结论必须是真实的。此外，段落的其余部分也支持这个结论。

2:14 (Because) Arthur plays chess slowly and carefully, this will be a long game.  
2:14 (因为) Arthur 下棋慢而谨慎，这将是一场漫长的游戏。

2:15 Eggs boiled at high altitude take much longer to cook. (Therefore) you should boil this egg for a longer time.  
2:15 高海拔地区煮的鸡蛋需要更长时间煮熟。（因此）你应该把这个鸡蛋煮得更久一些。

2:16 The unexamined life is not worth living. I know this to be true  
未经审视的生活不值得过。我知道这是真的。

[because) Socrates said so.

2:17 It is obvious that she loved him .(So) she did not kill him.  
很明显她爱他。(所以)她没有杀他。

2:18 [Because) the pathologist found only one wound on the victim’s body, that wound must be the one she caused.  
2:18 [因为]病理学家在受害者身上只发现了一个伤口，那个伤口必定是她造成的。

2:19 A twenty-two-year-old woman could not do such a thing to someone she loved. She could not even have struck at him with a knife.  
2:19 一个22岁的女人不可能对她爱的人做出这样的事情。她甚至不能用刀攻击他。

(Therefore)) someone else did it.  
因此)是其他人做的。

2:20 Rooms with light-colored walls are well-lighted. ∣Because∣ Mr. Martinez  
2:20 有浅色墙壁的房间光线明亮。∣因为∣马丁内斯先生

says that Monique’s room is not well-lighted,(we can conclude that) it does not have light-colored walls.  
说莫妮克的房间光线不好（我们可以得出结论）它没有浅色墙壁。

2:21 ∣Because∣ Charles Dickens describes people and events in great detail,  
2:21 ∣因为∣查尔斯·狄更斯详细地描述了人物和事件

Jonathan will no doubt be reading the book for a long time.  
乔纳森毫无疑问会读这本书很长时间。

2:22 She must have hated him. He was going with another woman, wasn’t he?   
2:22 她一定恨他。他和另一个女人在一起，对吗？

2:23 Tom Jeffers could not have killed Al Hamilton. Tom was in the local hospital from 10 p.m. to midnight and Al was killed about 11:05 P.M.  
2:23 Tom Jeffers无法杀死Al Hamilton。Tom在当地医院从晚上10点到午夜期间，而Al在晚上11点05分左右被杀害。

**Check-Up 2B**

2:24 F 2:25 T 2:26 F 2:27 T 2:28 T 2:29 T

**2:24 The word although rarely introduces a conclusion.  
2:24 这个词虽然很少引出一个结论。**

**2:26 Γhe word obviously can be used to introduce conclusions, reasons, insults, etc.  
2:26 这个词显然可以用来引出结论、原因、侮辱等等。**

**2:30 Although he died, the knife stroke was delivered with only moderate force. We can conclude this∣because) the knife penetrated only 2.5 inches and did not touch any bone.  
2:30 虽然他已经死了，但刀伤只是用适度的力量刺入。我们可以得出这个结论∣因为)刀只刺入了2.5英寸，并没有触及任何骨头。**

2:31 She must not have intended to kill him. The knife stroke was delivered with only moderate force .(So) she is not guilty.  
她肯定没有打算杀他。刀刺只用了适度的力量。(所以)她不应该被判有罪。

**2:32 Obviously she was strong enough to do the job, although she is not very strong. The knife stroke was delivered with only moderate force.  
显然她足够强壮来完成这项工作，尽管她并不是很强壮。刀刃只施加了适度的力量。**

**2:33 Although Martine was on the scene, she did not see the accident. [Here’s how I know] Martine always tells us when important things happen, and she did not even mention the accident.  
2:33 尽管马丁在现场，但她没有看到事故。【我是怎么知道的】马丁总是告诉我们重要的事情发生了，而她甚至没有提到这个事故。**

2:34 Traffic on Poplar Road must be changed from two-way to one-way. There is too much traffic on this road now and there are frequent collisions.  
2:34 Poplar Road上的交通必须从双向改为单向。现在这条路上的交通太多了，经常发生碰撞。

**2:35 Because the prosecuting attorney proved conclusively that the defendant killed the victim, it has been proven beyond a reasonable doubt that the defendant performed the act that caused the death of the victim. The first condition for a murder verdict is satisfied.  
2:35 因为检察官已经确凿地证明被告杀害了受害者，所以被告犯下了导致受害者死亡的行为已经被证明无可置疑。谋杀定罪的第一个条件已经满足。**

**2:36 There is no doubt that a very important feature of our legal system is that a defendant is considered innocent until proved guilty. But the public does not seem to believe this. Obviously we need a broad public-information campaign about that feature of our system.  
2:36 毫无疑问，我们法律体系中非常重要的一个特点是被告在被证明有罪之前被视为无罪。但公众似乎不相信这一点。显然，我们需要开展一项广泛的公众信息宣传活动，介绍我们法律体系中的这一特点。**

**2:37** Jones can never be elected to the presidency. She has a questionable background and has a habit of irritating people with her penetrating questions. This is obvious to me, although I realize that she wouldmake an excellent president. However, we need her on our side. (So,

let’s make her Chair of the Rules Committee.  
琼斯永远不能当选总统。她有一个可疑的背景，而且她有一个令人讨厌的习惯，就是用她的深入问题来激怒人们。虽然我意识到她会成为一位出色的总统，但这对我来说是显而易见的。然而，我们需要她站在我们这一边。（所以，让我们让她成为规则委员会的主席。

2:38 One possibility: Obviously argument analysis can be difficult.  
2:38 一个可能性：显然，论证分析可能很困难。

Although some examples are easy to analyze, one must realize that practicing with these can develop one’s skills.  
虽然有些例子很容易分析，但人们必须意识到通过练习这些例子可以培养自己的技能。

2:39 No. The following examples refute the suggestion: 1) “He is old, but not wise. So we cannot depend on him.” 2) “She is young. However, she is not wise. So we cannot depend on her.”  
2:39 不。以下例子反驳了这个建议：1）他年纪大了，但并不聪明。所以我们不能依赖他。2）她年轻，然而她并不聪明。所以我们不能依赖她。

**Check-Up 2C**

**2:40 T 2:41 T 2:42 T 2:43 T 2:44 T 2:45 F**

2:46 F 2:47 F

**2:45 Sometimes because introduces a reason in an argument, sometimes it indicates an explanation containing the proposition.  
2:45 有时候因为在一个论证中引出一个原因，有时候它表示一个包含命题的解释。**

**2:46 The “if’ part of a proposition is often asserted at some other place as a reason in an argument containing the proposition.  
2:46 提议的 if 部分通常在包含该提议的论证中的其他地方作为原因被断言。**

**2:47 The “because” part of a proposition is generally intended to be asserted on its own.  
2:47 因为命题的部分通常意味着要单独断言。**

**2:48 If you boil an egg at high altitude, then it takes much longer to cook it. (Therefore ,)you should boil this egg for a long time.  
如果你在高海拔地区煮鸡蛋，那么它需要更长的时间来煮熟。（因此，）你应该把这个鸡蛋煮很长时间。**

**2:49 If Monique’s room has light-colored walls, then it is well-lighted. ∣Because∣ Mr. Martinez says that her room is not well-lighted, (we can conclude that)it does not have light-colored walls.  
2:49 如果莫妮克的房间有浅色的墙壁，那么它就是明亮的。∣因为∣马丁内斯先生说她的房间不明亮，（我们可以得出结论）它没有浅色的墙壁。**

**2:50 If the public does not realize that people are to be considered innocent until proven guilty, then there will continue to be mistreatment of perfectly innocent people. Hence, we need a broad publicinformation campaign about this feature of our systems.  
2:50 如果公众没有意识到人们在未被证明有罪之前应被视为无辜，那么对完全无辜的人将继续发生虐待。因此，我们需要开展一项广泛的公众信息宣传活动，以介绍我们体系中的这一特点。**­­

**2:51 Men generally have difficulty being sensitive to others. If it is desirable for our society to consist of fully developed human beings, then people who are sensitive should make a special effort to help those who are not. Generally, (his means that)women should make a special effort to help men be more sensitive. I say this even though some might feel that it places an unfair burden on women.  
2:51 男性通常难以对他人敏感。如果我们的社会希望由完全发展的人构成，那么敏感的人应该特别努力帮助那些不敏感的人。一般来说，女性应该特别努力帮助男性变得更加敏感。尽管有些人可能认为这对女性来说是不公平的负担，但我仍然这样说。**

**2:52** Women generally do not have confidence in themselves, or else they find it difficult to maintain confidence. (Therefore^) if we are to achievetrue equality, hiring preference should be given to women in cases where men outnumber women. To some people this might at first appear to be unfair to men, but I think that on reflection they will change their minds. (Possible added final conclusion: “Hiring prefer­ence should be given to women in cases where men outnumber women.” If this is added, then it is double-underlined and the *if-then* statement is triple-underlined.)

**2:53 “Tom Jeffers did not do the deed.” This is the conclusion because it is supported by the other part of the sentence and because this proposition more directly helps the prosecutor to achieve his goals.  
2:52 女性通常对自己缺乏信心，否则她们会发现保持信心很困难。因此，如果我们要实现真正的平等，在男性人数超过女性的情况下，应该优先考虑雇佣女性。对于一些人来说，这一开始可能对男性不公平，但我认为经过思考后，他们会改变想法。（可能添加的最终结论：在男性人数超过女性的情况下，应该优先考虑雇佣女性。如果添加了这一点，则双下划线标记，并且if-then语句三下划线标记。）2:53 汤姆·杰弗斯没有做这件事。这是结论，因为它得到了句子的另一部分的支持，并且这个命题更直接地帮助检察官实现他的目标。**­tion

**2:54 “She was defending herself against attack.” This is the conclusion because it is supported by the other sentence and because it more directly aids the goals of the defense attorney.  
2:54 她正在自卫抵抗攻击。这是结论，因为它得到了其他句子的支持，并且更直接地有助于辩护律师的目标。**

**2:55 Answer deliberately omitted as a challenge to you.  
2:55故意省略作为对你的挑战。**

**2:56 “She did not commit murder.” This is the conclusion because this is the only thing supported by all the other parts of the argument and because it was our ultimate concern at the time.  
2:56 她没有犯谋杀罪。这是结论，因为这是所有其他论点支持的唯一事实，并且这是我们当时的最终关注点。**

**2:57 and 2:58 These are up to you. Make sure that you are clear, brief, and well-organized. 2:59 Although the sun is shining brightly now, it will be raining before nightfall. Mr. Roberts, our dependable TV7 weatherman, said so.(§o) we had better postpone our picnic.  
2:57和2:58由你决定。确保你清晰、简洁和有条理。2:59虽然太阳现在照得很亮，但到了夜晚之前会下雨。我们可靠的TV7天气预报员罗伯茨先生说的。（§o）我们最好推迟野餐。**

**2:60 So many kids are getting high school diplomas even though they cannot read.φΓhe solution is simple) The schools should attend to their primary job, the development of basic skills and the intellectual virtues. ∣Because∣ they cannot both do this job well and devote all the resources that are currently devoted to athletics, busing, music, and making students happy, (we must conclude that)such things should be dropped. Homes, neighborhoods, and religious institutions are able to perform these functions.  
2:60 那么多孩子获得高中文凭，尽管他们无法阅读。φΓ解决方案很简单) 学校应该专注于他们的主要工作，即基本技能和智力美德的发展。∣因为∣他们无法同时做好这项工作并投入目前用于体育、班车、音乐和让学生快乐的所有资源，(我们必须得出这样的结论)这些事情应该被放弃。家庭、社区和宗教机构能够履行这些职能。**­

**2:61** Deliberately omitted.

**2:62 If I do my homework now, I’ll miss band practice. If I do it later, my friend’s feelings will be hurt. Both of these consequences are unacceptable. The conclusion is obvious. (Added conclusion: I should not do my homework.)   
如果我现在做作业，我会错过乐队练习。如果我晚点做，我的朋友会受伤。这两种后果都是不可接受的。结论是显而易见的。（附加结论：我不应该做作业。）**­

**2:63** Deliberately omitted.

**2:64 The signers of the Declaration of Independence did not intend to claim that all men and women should be considered equal. For one thing, they used the word men in the statement “All men are created equal.” For another, it is a historical fact that men and women were not considered equal in 1776 and nothing was done in those days to ensure equal treatment. Women were not even guaranteed the right to vote in the United States until 1920,  
《独立宣言》的签署者并没有打算声称所有男人和女人应该被视为平等。首先，他们在声明中使用了“男人”一词，说“所有男人生而平等”。其次，历史事实是，1776年男人和女人并不被认为是平等的，而且在那些日子里没有采取任何措施来确保平等待遇。直到1920年，妇女在美国甚至没有被保证投票权利。**

**2:65** Deliberately omitted.

**2:66 NO TO S.B. 833: As the parent of a six-year-old with cystic fibrosis, (j urge you to) oppose Senate Bill 833 because it would make research on diseases such as cystic fibrosis, cancer, AIDS, and nephrosis much more expensive.(Consequently,^)less research would be done. The bill requires that animals used in research be bred and raised for that purpose and prohibits the use in research of stray dogs and cats (who would otherwise be put to sleep anyway). It is time to choose between human beings and animals. I choose human beings.  
NO TO S.B. 833: 作为一个六岁患有囊性纤维化的孩子的父母，(我敦促您)反对参议院议案833，因为它会使囊性纤维化、癌症、艾滋病和肾病等疾病的研究变得更加昂贵。(因此，^)研究将会减少。该法案要求用于研究的动物必须为此目的繁殖和饲养，并禁止使用流浪狗和猫进行研究（它们本来就会被安乐死）。现在是选择人类和动物之间的时刻。我选择人类。**­pose and prohibits the use in research of stray dogs and cats (who would otherwise be put to sleep anyway). It is time to choose between

**2:67** Deliberately omitted.

**2:68 The final conclusion is that Mr. Lan ought to step aside and not review the returns. This conclusion passes the “therefore” test. We do not know all of the purposes of the editorial writer, but getting a political person to step aside in making a judgment about election returns when the person has a conflict of interests is a plausible purpose for an editorial writer. This conclusion is supported in the editorial. It makes use of all the other material in the editorial for its support, and as far as I can see, nothing else does.  
最终的结论是，兰先生应该退居幕后，不再审查选票。这个结论经过了因此测试。我们不知道编辑的所有目的，但是当一个政治人物在对选举结果做出判断时存在利益冲突时，让其退居幕后是编辑的一个合理目的。这个结论在编辑中得到了支持。它利用了编辑中的所有其他材料作为支持，据我所见，没有其他材料可以支持这个结论。**­ical person to step aside in making a judgment about election returns when the person has a conflict of interests is a plausible purpose for an editorial writer. This conclusion is supported in the editorial. It makes use of all the other material in the editorial for its support, and as far as I can see, nothing else does.

**Check-Up 2D**

2:69 T 2:70 T 2:71 T

2:73 (2:13) (A) <Jane went to the party today>. I know this because (B) <her glove is missing>.  
2:73 (2:13) (A) <简今天去了聚会>。我知道这是因为 (B) <她的手套不见了>。



2:74 (2:14) Because (A) <Arthur plays chess slowly and carefully>, (B) <this will be a long game>.  
因为（A）<亚瑟下棋慢而谨慎>，（B）<这将是一场漫长的比赛>。



2:75 (2:15) (A) <Eggs boiled at high altitude take much longer for the egg to be cooked>. Therefore, (B) <you should boil this egg for a longer time>.  
高海拔地区煮鸡蛋需要更长时间煮熟"。因此，"你应该把这个鸡蛋煮更长时间



**2:76 (2:16) (A) <The unexamined life is not worth living>. I know this to be true because (B) <Socrates said so>.  
未经审视的生活不值得过。" 我知道这是真的，因为"苏格拉底这样说过**



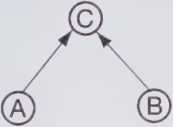
2:77 (2:17) It is obvious that (A) <she loved him>. So (B) <she did not kill him>.  
2:77 (2:17) 很明显 (A) <她爱他>。所以 (B) <她没有杀他>。



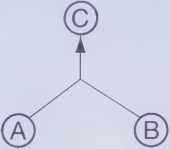
2:78 (2:18) Because (A) <the pathologist found only one wound on the victim’s bodv>, (B) <that wound must be the one she caused>.  
2:78 (2:18) 因为（A）<病理学家在受害者身上只发现了一个伤口>，（B）<那个伤口一定是她造成的>。



2:79 (2:19) (A) <A twenty-two-year-old woman could not do such a thing to someone she loved>. (B) <She could not even have struck at him with a knife>. Therefore, (C) <someone else did it>.  
2:79 (2:19) (A) <一个22岁的女人不可能对她爱的人做出这样的事情>。 (B) <她甚至不能用刀攻击他>。因此，(C) <是其他人做的>。



2:80 (2:20) (A) <Rooms with light-colored walls are well-lighted>. Because (B) <Mr. Martinez says that Monique’s room is not well-lighted>, we can conclude that (C) <it does not have light-colored walls>.  
2:80 (2:20) (A) <墙壁颜色浅的房间是明亮的>。因为 (B) <马丁内斯先生说莫尼克的房间不明亮>，我们可以得出结论 (C) <它没有浅色的墙壁>。



2:81 (2:21) Because (A) <Charles Dickens describes people and events in great detail>, (B) <Jonathan will no doubt be reading that book for a long time>.  
2:81 (2:21) 因为（A）<查尔斯·狄更斯详细描述了人物和事件>，（B）<乔纳森无疑会读那本书很长时间>。



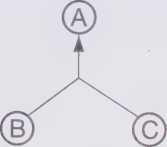
A

2:82 (2:22) (A) <She must have hated him>. (B) <He was going with another woman>, wasn’t he?  
她一定讨厌他。他和另一个女人在一起，对吧？



2:83 (2:23)

(A) <Tom Jeffers could not have killed Al Hamilton>. (B) <Tom was in the local hospital from 10 p.m. to midnight> and (C) <A1 was killed at about 11:05 p.m.>



­trated only 2.5 inches and did not touch any bone>.2:84 (2:30) Although (A) <he died>, (B) <the knife stroke was delivered with only moderate force>. We can conclude this because (C) <the knife penetrated only 2.5 inches and did not touch any bone>.  
2:84 (2:30) 虽然（A）<他死了>，（B）<刀刃只用了适度的力量>。我们可以得出这个结论，因为（C）<刀只刺入了2.5英寸，没有触及任何骨头>。



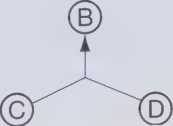
2:85 (2:31) (A) <She must not have intended to kill him>. (B) <The knife stroke was delivered with only moderate forces. So (C) <she is not guilty>.  
她肯定没有打算杀他。" "刀割只用了适度的力量。所以她不应该被判有罪。



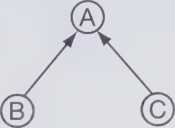
2:86 (2:32) Obviously (A) <she was strong enough to do the job>, although (B) <she is not very strong>. (C) <The knife stroke was delivered with only moderate force>.  
2:86 (2:32) 很明显 (A) <她足够强壮去做这份工作>，尽管 (B) <她并不是很强壮>。 (C) <刀划只用了适度的力量>。



2:87 (2:33) Although (A) <Martine was on the scene>, (B) <she did not see the accident>. Here’s how I know: (C) <Martine always tells us when important things happen>, and (D) <she did not even mention the accident>.  
2:87 (2:33) 虽然 (A) <玛丁在现场>, (B) <她没有看到事故>。我知道的原因是：(C) <玛丁总是告诉我们重要的事情发生了>，而(D) <她甚至没有提到这个事故>。



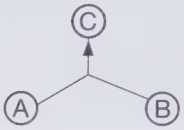
2:88 (2:34) (A) <Traffic on Poplar Road must be changed from two-way to one- ways-. (B) <There is too much traffic on this road now> and (C) <there are frequent collisions>.  
2:88 (2:34) (A) <波普拉路上的交通必须从双向改为单向。> (B) <现在这条路上的交通太多了>，(C) <经常发生碰撞事故>。



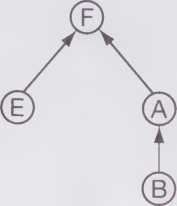
2:89 (2:35) Because (A) <the prosecuting attorney proved conclusively that the defendant killed the victim,> (B) <it has been proved beyond a reasonable doubt that the defendant performed the act that caused the death of the victim>. (C) <The first condition for a murder verdict is satisfied>.  
2:89 (2:35) 因为(A) <控方律师已经确凿地证明被告杀害了受害者，> (B) <已经超越合理怀疑的范围证明被告实施了导致受害者死亡的行为>。(C) <满足了谋杀定罪的第一个条件>。



­tem is that a defendant is considered innocent until proved guilty>. But (B) <the public does not seem to believe this>. Obviously, (C) <we need a broad public-information campaign about that feature of our system>.2:90 (2:36) There is no doubt that (A) <a very important feature of our legal system is that a defendant is considered innocent until proved guilty>. But (B) <the public does not seem to believe this>. Obviously, (C) <we need a broad public-information campaign about that feature of our system>.  
2:90 (2:36) 毫无疑问，(A) 我们法律体系的一个非常重要的特点是被告在被证明有罪之前被视为无罪。但是 (B) 公众似乎不相信这一点。显然，(C) 我们需要一个关于我们体系这一特点的广泛公众信息宣传活动。



2:91 (2:37) (A) <Jones can never be elected to the presidency>. (B) <She has a questionable background and has a habit of irritating people with her penetrating questions>. (C) <This is obvious to me>, although (D) <1 realize that she would make an excellent president>. However, (E) <we need her on our side>. So (F) <let,s make her Chair of the Rules Committee>.  
2:91 (2:37) (A) <琼斯永远不能当选总统>。 (B) <她有一个可疑的背景，并且有一个令人讨厌的习惯，她总是用她的深入问题激怒人们>。 (C) <对我来说，这是显而易见的>，尽管 (D) <我意识到她会成为一位出色的总统>。然而，(E) <我们需要她站在我们这一边>。所以 (F) <让我们让她成为规则委员会的主席>。

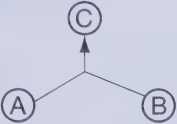


(Note: On some readings, D also supports F.)   
(注意：在某些情况下，D也支持F。)

**2:92 (2:48) (A) <Ifyou boil an egg at high altitude, then it takes much longer for the egg to be cooked>. Therefore, (B) <you should boil this egg for a long time>.  
如果你在高海拔地区煮鸡蛋，那么鸡蛋煮熟所需的时间会更长。因此，你应该把这个鸡蛋煮很长时间。**



**2:93 (2:49) (A) <11 Monique’s room has light-colored walls, then it is well-lighted>. Because (B) <Mr. Martinez says that her room is not well-lighted>, we can conclude that (C) <it does not have light-colored walls>.  
2:93 (2:49) (A) <11 Moniques房间有浅色墙壁，然后它被照亮了>。因为(B) <Martinez先生说她的房间没有被照亮>，我们可以得出结论(C) <它没有浅色墙壁>。**

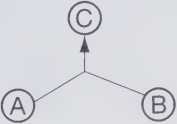


**2:94 (2:50) (A) <If the public does not realize that people are to be considered innocent until proved guilty, then there will continue to be mistreatment of perfectly innocent people>. Hence, (B) <we need a broad public-information campaign about this feature of our system>.  
2:94 (2:50) (A) 如果公众没有意识到人们在被证明有罪之前应被视为无罪，那么对完全无辜的人将会继续受到虐待。因此，(B) 我们需要一场关于我们体制这一特点的广泛公众宣传活动。**­ment of perfectly innocent people>. Hence, (B) <we need a broad public-information campaign about this feature of our system>.



**2:95 (2.51) (A)** <Men generally have difficulty expressing their emotions>.

(B) <If it is desirable for our society to consist of fully developed human beings, then people who do find it easier to express their emotions should make a special effort to draw out those who do not>. (C) <Generally this means that women should make a special effort to encourage men to express their inner feelings>. I say this, even though (D) <some might feel that it places an unfair burden on women >.  
(B) 如果我们的社会希望由完全发展的人构成，那么那些更容易表达情感的人应该特别努力引导那些不擅长表达情感的人。" "(C) 一般来说，这意味着女性应该特别努力鼓励男性表达内心的感受。" 我这样说，尽管(D) "有些人可能觉得这对女性不公平负担。



2:96 (2:52) (A) <Women generally do not have confidence in themselves, or else they find it difficult to maintain confidences Therefore, (B) <ifwe are to achieve true equality, hiring preference should be given to women in cases where men outnumber women>. (C) <To some people this might at first appear to be unfair to men>, but I think that (D) <on reflection they will change their minds>. (Added final conclusion: (E) <Hiring preference should be given to women in cases where men outnumber women.>)  
2:96 (2:52) (A) 女性普遍缺乏自信，否则她们会发现很难保持信心。因此，(B) 如果我们要实现真正的平等，在男性人数超过女性的情况下应该优先考虑雇佣女性。 (C) 对于一些人来说，这可能一开始看起来对男性不公平，但我认为 (D) 经过深思熟虑，他们会改变看法。 (添加最终结论：(E) 在男性人数超过女性的情况下，应该优先考虑雇佣女性。)



2:97 (2:53) Prosecutor: (A) <Tom Jeffers did not do the deed>. (B) <He was in the hospital at the time>.  
2:97 (2:53) 检察官：（A）<Tom Jeffers没有做这件事>。（B）<他当时在医院里>。



2:98 (2:54) Defense Attorney: (A) <She was defending herself against attack>. (B) <He threatened to kill her>.  
2:98 (2:54) 辩护律师：（A）<她是在自卫>。（B）<他威胁要杀了她>。



2:99 (2:55) Deliberately omitted.

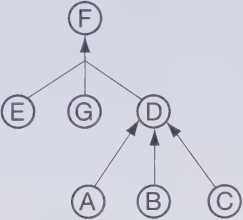
2:100 (2:56) Juror: (A) <The pathologist testified that the knife stroke was only of medium strength>. (B) <She did not think that she would cause him great bodily harm>. (C) <She did not commit murder>.  
2:100 (2:56) 陪审员：（A）<病理学家证明刀伤只是中等力度>。（B）<她不认为自己会给他造成严重伤害>。（C）<她没有犯谋杀罪>。



**2:101 (2:59) Although (A) <the sun is shining brightly now>, (B) <it will be raining before nightfall>. (C) <Mr Roberts, our dependable TV weatherman, said so>. So (D) <we had better postpone our picnic>.  
2:101 (2:59) 虽然（A）<太阳现在正照得很亮>，（B）<傍晚之前会下雨>。 （C）<我们可靠的电视天气预报员罗伯茨先生说的>。所以（D）<我们最好推迟野餐>。**



**2:102 (2:60) (A) <So many kids are getting high school diplomas even though they cannot read>. (B) <College graduates do not understand percentages>. (C) <Adults cannot read directions>. The solution is simple: (D) <The schools should attend to their primary job, the development of basic skills and the intellectual virtues>. Because (E) <they cannot both do this job well and devote all the resources that are currently devoted to athletics, busing, music, and making students happy>, we must conclude that (F) <such things should be dropped>. (G) <Homes, neighborhoods, and religious institutions are able to perform these functions>.  
很多孩子们获得了高中文凭，尽管他们不能阅读。" "大学毕业生不理解百分比。" "成年人不能阅读说明书。" "解决方案很简单：" "学校应该专注于他们的主要工作，即基本技能和智力品质的发展。" "因为他们无法同时做好这项工作并投入当前用于体育、班车、音乐和让学生快乐的所有资源，所以我们必须得出结论：" "这些事情应该被放弃。" "家庭、社区和宗教机构能够承担这些职能。**­tions are able to perform these functions>.

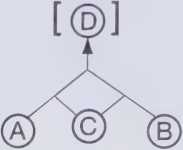


*Explanatory note regarding the previous item: In case you are w ondering why the previous item is diagrammed that way, here is a word of explanation: A, B, and C seem fairly obviously to be offered in support of D. E and G seem to be offered in support of F The question about which some people wonder is whether D is offered in support of F, or F in support of D. To answrcr this question try the “therefore” test: Which sounds right in the situation in w,hich this argument probably appears: 1) “The schools should attend to their primary job, the development of the basic skills and the intellectual virtues; therefore athletics, busing, music, and making students happy are things that should be dropped” or 2) “Athletics, busing, music, and making students happy are tilings that should be dropped; therefore the schools should attend to their primary job, the development of the basic skills and intellectual virtues”? Even though the dropping of the indicated things might cause the schools to focus on the intellectual virtues, it is probable that the claimed primacy of the intellectual virtues is offered as a supporting reason for the dropping of the indicated things. So D is probably offered in support of F.  
关于前一项的解释说明：如果你想知道为什么前一项被以那种方式图解，这里有一个解释：A、B和C似乎明显是为了支持D。E和G似乎是为了支持F的。有些人疑惑的问题是D是为了支持F，还是F是为了支持D。为了回答这个问题，请尝试使用“因此”测试：在这个论证可能出现的情况下，哪个听起来更正确：1）学校应该专注于他们的主要工作，即基本技能和智力美德的发展；因此，体育、班车、音乐和让学生快乐的事情应该被放弃；还是2）体育、班车、音乐和让学生快乐的事情应该被放弃；因此，学校应该专注于他们的主要工作，即基本技能和智力美德的发展？尽管放弃这些指示的事情可能导致学校专注于智力美德，但很可能声称智力美德的首要性是为了支持放弃这些指示的原因。因此，D很可能是为了支持F而提出的。*­tion try the “therefore” test: Which sounds right in the situation in w­tual virtues”? Even though the dropping of the indicated things might cause the schools to focus on the intellectual virtues, it is probable that the claimed primacy of the intellectual virtues is offered as a supporting reason for the dropping of the indicated things. So D is probably offered in support of F.

**2:103 (2:61)** Deliberately omitted.

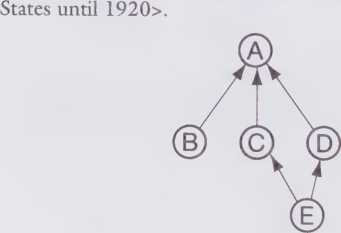
**2:104 (2:62) (A) <If I do my homework now, I’ll miss band practice>. (B)  
如果我现在做作业，我会错过乐队练习。**

­ous. (Probable tinal conclusion; (D) <1 should not do my home­works)<If I do it later, my friend’s feelings will be hurt>. (C) <Both of these consequences are unacceptable>. The conclusion is obvious. (Probable tinal conclusion; (D) <1 should not do my homeworks)  
如果我晚点做，我的朋友会受伤。" (C) "这两个后果都是不可接受的。" 结论是显而易见的。 (可能的最终结论; (D) "我不应该做我的作业)



**2:105 (2:63)** Deliberately omitted.

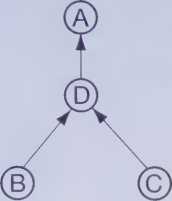
2:106 (2:64) (A) <The signers of the Declaration of Independence did not intend to claim that men and women should be considered equal>. For one thing, (B) <they used the word men in the statement “All men are created equaΓ>. For another, (C) <it is a historical fact that men and women were not considered equal in 1776> and (D) <nothing was done in those days to ensure equal treatment>. (E) <Women were not even guaranteed the right to vote in the United  
2:106 (2:64) (A)《签署独立宣言的人并没有打算声称男人和女人应该被视为平等》。首先，(B)《他们在声明中使用了男人这个词，说所有人都是平等的》。其次，(C)《历史事实是，1776年男人和女人并没有被视为平等》，而且(D)《那个时代没有采取任何措施来确保平等待遇》。(E)《妇女甚至没有被保证在美国投票的权利》。



**2:107 (2:65)** Deliberately omitted.

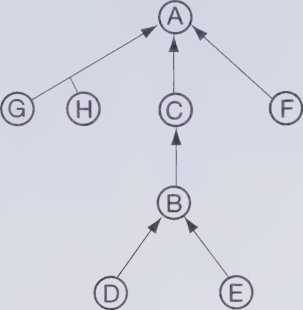
**2:108 (Paragraph 5)(A) <dhere was no one else in the dining room at the time of the stabbing>. It is clear that (B) <Arlene did not mention anyone else>.   
2:108（第5段）（A）<刺伤发生时，餐厅里没有其他人>。很明显（B）<阿琳没有提到其他人>。**

(C) <Neither did her parents>. Because (D) <they did not mention anyone else>, obviously (A) <there was no one else>.  
她的父母也没有。因为他们没有提到其他人，显然没有其他人。



**2:109 (Paragraph** 6)Deliberately omitted.

­sis much more expensive>. Consequently, (C) <less research would be done>. (D) <The bill requires that animals used in research be bred and raised for that purpose> and (E) <prohibits the use in research of stray dogs and cats> (F) <(who would otherwise be put to sleep any­way):\*. (G) <It is time to choose between human beings and animals>. (H) <1 choose human beings>.2:110 (2:66) NO TO S.B. 833: As the parent of a six-year-old with cystic fibrosis, I urge you to (A) <oppose Senate Bill 833> because (B) <it would make research on diseases such as cystic fibrosis, cancer, AIDS, and nephrosis much more expensive>. Consequently, (C) <less research would be done>. (D) <The bill requires that animals used in research be bred and raised for that purpose> and (E) <prohibits the use in research of stray dogs and cats> (F) <(who would otherwise be put to sleep anyway):\*. (G) <It is time to choose between human beings and animals>. (H) <1 choose human beings>.  
2:110 (2:66) NO TO S.B. 833: 作为一个有六岁囊性纤维化的孩子的父母，我敦促您(A) <反对参议院议案833>，因为(B) <它会使囊性纤维化、癌症、艾滋病和肾病等疾病的研究变得更加昂贵>。因此，(C) <将会进行更少的研究>。(D) <该法案要求用于研究的动物必须是专门繁殖和饲养的>，并且(E) <禁止使用流浪狗和猫进行研究>。(F) <（否则它们将被安乐死）：\*。(G) <是时候在人类和动物之间做出选择了>。(H) <我选择人类>。

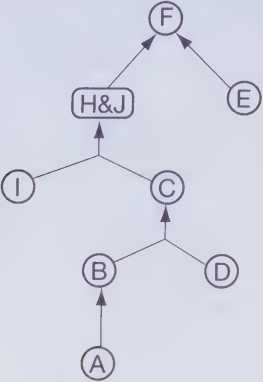


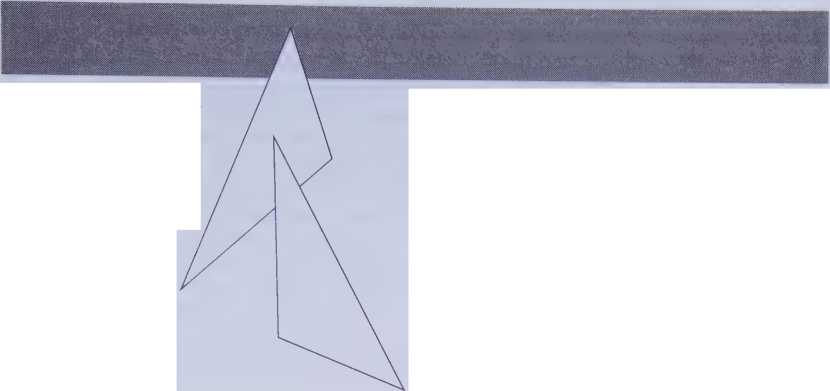
**2:111 (2:67)** Deliberately omitted.

­paign manager for the Democratic candidate, James Florio>.2:112 (2:68) DISQUALIFIED: (A) <Donald Lan is the Secretary of State of New Jersey>, which means that (B) <he must review the returns of Tuesday’s still-undecided election for governor:-. (C) <Mr. Lan is in a curious position> because (D) <he was not onlv an early contender in the Democratic gubernatorial primary, but later became deputy campaign manager for the Democratic candidate, James Florio>.  
2:112 (2:68) 被取消资格：（A）唐纳德·兰（Donald Lan）是新泽西州国务卿，这意味着（B）他必须审查周二仍未决定的州长选举的结果：-。（C）兰先生处于一个奇特的位置，因为（D）他不仅是民主党州长初选的早期竞争者，还成为民主党候选人詹姆斯·弗洛里奥的副竞选经理。

(E) <Mr. Florio and the Republican contender, Tom Kean, agree that every effort should be taken to ensure the legitimacy of the ultimate   
（E）<弗洛里奥先生和共和党候选人汤姆·基恩都认为应该采取一切努力确保最终的合法性。

result>. That means (F) <Mr. Lan ought to step aside>. (G) <We do not question his honesty>, (H) <only the appearances>. (I) <With a near-dead heat for the top office of the state>, (J) <the appearances of having a partisan certify the results are dead wrong>.  
result>. 这意味着（F）<兰先生应该让位>。 （G）<我们不质疑他的诚实>，（H）<只是表面上的>。 （I）<在州最高职位上几乎势均力敌>，（J）<让党派认证结果的表面现象是完全错误的>。





CHAPTER

3

The Credibility of Sources  
来源的可信度

Suppose that you hear the basketball coach of the University of Illinois say on television that the Chevrolet is a good car. Should you take his word? Suppose that you are on the jury when the pathologist says that the knife stroke was not a powerful one. Should you take her w ord? I am not asking whether what they said is true, although we are interested in that too. Instead I am asking whether their saying those things in those circumstances was sufficient reason to believe what they said. Another way of putting that question is, “Were those people *credible* on that topic in those circumstances?”

This sort of question is important to consider because a great many of our beliefs come from other people. Often, someone else’s word is all we have to go on. Think, for example, of how often in your daily life you accept something on the word of the new spapers and magazines, your teachers, your textbooks, your friends, etc. Think of the times when wτiting position papers (of the sort suggested in Chapter 1) that you need to cite sources to support your reasons (the R in FRISCO). Are your sources credible on the matter at hand?  
假设你听到伊利诺伊大学的篮球教练在电视上说雪佛兰是一辆好车。你应该相信他的话吗？假设你是陪审团成员，当病理学家说刀伤不是一次有力的刺击时。你应该相信她的话吗？我不是在问他们所说的是否真实，尽管我们对此也感兴趣。相反，我在问的是，他们在那些情况下说这些话是否足够让人相信他们所说的。另一种提出这个问题的方式是，那些人在那些情况下对这个话题是否可信？考虑这种问题是很重要的，因为我们很多的信念来自他人。通常，别人的话是我们唯一可以依靠的。想想在你的日常生活中，你多少次是相信报纸、杂志、老师、教科书、朋友等的话。想想当你写立场论文（如第一章所建议的那样）时，你需要引用来源来支持你的理由（FRISCO中的R）。你的来源在这个问题上是否可信？

We jurors had to make credibility judgments many times. One example was our judgment about the credibility of the pathologist in her testimony that the knife stroke was only of moderate force. Another was our judgment about the credibility of the defendant in her claim that the victim threatened to kill her.  
我们陪审团需要多次做出可信度判断。一个例子是我们对病理学家在证词中声称刀伤只是中等力度的可信度的判断。另一个例子是我们对被告声称受害人威胁要杀死她的可信度的判断。

Remember that the immediate question is not whether what the person said was correct, although that is our ultimate interest. The question here is whether, in the circumstances, the person deserves to be believed about the topic at hand. What the person says might in fact be correct, even though we should not take the persons word on it. Furthermore, a very credible source might be mistaken.  
记住，眼下的问题并不是那个人说的是否正确，尽管那是我们最终关心的。这里的问题是，在这种情况下，这个人是否值得相信关于手头的话题。这个人说的可能事实上是正确的，尽管我们不应该完全相信这个人的话。此外，一个非常可信的消息来源可能会犯错。

Judging the credibility of a source is most useful when we do not have any other way to tell whether what the person says is correct. When the person’s word is all we have to go on, a common situation, we should pay close attention to that person’s credibility. But because the credibility of a source does not guarantee the truth of what the source says, we must keep an open mind about it. We can usually proceed as if what a credible source says is true, but we cannot be absolutely certain.   
在我们没有其他方法判断一个人所说是否正确时，判断信息来源的可信度是最有用的。当我们只有一个人的话作为依据时，这是一种常见情况，我们应该密切关注该人的可信度。但是因为信息来源的可信度并不能保证其所说的内容的真实性，我们必须对此保持开放的态度。通常情况下，我们可以假设可信的信息来源所说的是真实的，但我们不能绝对确定。

How can you tell whether to take another person’s word? This is often a difficult question, but there are criteria that can help you answer it even though there is no guarantee that your judgment based on them is correct. In this chapter, you will first examine four basic criteria for judging the credibility of a source, and then consider some refinements, four additional criteria, and some standard labels applied to sources of information, sometimes called fallacy labels. One basic theme of this chapter is that not all appeals to authority (a fallacy label) are fallacious. In fact, most are legitimate. Our job is to figure out which ones are legitimate.  
你如何判断是否相信他人的话？这通常是一个困难的问题，但有一些标准可以帮助你回答，尽管基于这些标准的判断并不能保证是正确的。在本章中，你将首先考察判断信息来源可信度的四个基本标准，然后考虑一些细化的标准，四个附加标准以及一些被称为谬误标签的信息来源常用标签。本章的一个基本主题是，并非所有对权威的引用（一种谬误标签）都是谬误的。事实上，大多数都是合理的。我们的任务是弄清楚哪些是合理的。­­sider some refinements, four additional criteria, and some standard labels applied ­ter is that not all

Credibility comes under the R part of the FRISCO approach to critical thinking because judging the credibility of sources is relevant to determining the acceptability of reasons. The I part of FRISCO, the degree to which the reasons support the conclusion, is a topic we shall not start to consider in a careful organized manner until Chapter 5. However, you should be thinking about it now, because in actual acts of critical thinking, in judging yours and others’ arguments and decisions, all of these aspects of FRISCO are interdependent.  
可信度属于FRISCO批判性思维方法中的R部分，因为判断信息来源的可信度与确定理由的可接受性相关。FRISCO的I部分，即理由支持结论的程度，是我们在第5章之前不会开始以仔细有组织的方式考虑的一个主题。然而，你现在应该开始思考它，因为在实际的批判性思维行为中，在判断你自己和他人的论点和决策时，FRISCO的所有这些方面都是相互依存的。­­ability of reasons. The

Four Basic Criteria for Credibility  
可信度的四个基本标准

1. Background Experience and Knowledge  
   背景经验和知识

­ibility is transferring our respect for someone’s expertise in one area to another area. To invite you to fall into this trap is to commit the fallacy called Perhaps most important of all is whether the person has sufficient experience and knowledge to know what he or she is talking about. Often, but not always, this requires formal training. I did not take the Illinois coach’s word on automobiles because I had no reason to think that he was an expert on automobiles. I defer to him in basketball, but not automobiles. One trap in deciding about someone’s credibility is transferring our respect for someone’s expertise in one area to another area. To invite you to fall into this trap is to commit the fallacy called transfer.  
也许最重要的是这个人是否有足够的经验和知识来了解他或她所谈论的内容。通常情况下，这需要正式的培训。我没有相信伊利诺伊州教练对汽车的说法，因为我没有理由认为他是汽车方面的专家。在篮球方面，我会听从他的意见，但在汽车方面不会。在评估某人的可信度时，一个陷阱是将我们对某个领域专家的尊重转移到另一个领域。诱使你陷入这个陷阱是犯了一种叫做转移的谬误。

The pathologist seemed to us on the jury to be an expert in the area of her tes­timony. She was a medical doctor regularly employed by the eixril authorities to do autopsies. She testified that she had performed over 200 of them, and this testimony was not challenged by either the defense or prosecuting attorney. (So we, to some extent, depended on the expertise of the attorneys to turn up information that might have been damaging to the credibility of the witnesses. By not challenging the wit­ness’ expertise, they gave us some reason to accept it.)

­son will be right about something. It only helps to make the person’s statements more credible. The person, we then think, is at least in a position to make accurate statements. This criterion can be stated as follows: Having background experience and knowledge does not guarantee that a person will be right about something. It only helps to make the person’s statements more credible. The person, we then think, is at least in a position to make accurate statements. This criterion can be stated as follows: The person should have background training and experience appropriate for making the statemen t.  
病理学家在陪审团眼中似乎是她证词领域的专家。她是一名定期受雇于eixril当局进行尸体解剖的医生。她作证说她已经进行了200多次尸检，而这个证词既没有被辩护律师挑战，也没有被起诉律师挑战。（因此，我们在某种程度上依赖律师的专业知识来找出可能损害证人可信度的信息。通过不质疑证人的专业知识，他们给了我们接受它的一些理由。）拥有背景经验和知识并不能保证一个人在某件事上是正确的。它只有助于使人的陈述更可信。我们认为，这个人至少处于一个能够做出准确陈述的位置。这个标准可以表述如下：这个人应该具备适合做出陈述的背景培训和经验。

Be aware that this criterion applies not only to statements requiring expertise. It also applies to gossip and other information you receive from your friends and acquaintances. My friend Jim told me that he saw Martine out with Karl at The Blue Cloud. If I am to take his word, then Jim’s background (training and experience) should have enabled him to recognize Martine and Karl. It should also enable him to recognize a case of their being out together. In particular he should know what kind of place it is and he should know the difference between a chance encounter and a case of their being out together. Suppose that The Blue Cloud were a coffee shop where people regularly drift in and out alone and join anyone with whom they are acquainted, rather than a formal restaurant where people sit only with people with whom they came. He should know which type of place it is and be able to apply to this case the distinction between a chance encounter and their being out together. This background experience and knowledge, although it is not expertise, is necessary if he is to be credible on this matter.  
请注意，这个标准不仅适用于需要专业知识的陈述，也适用于你从朋友和熟人那里得到的八卦和其他信息。我的朋友吉姆告诉我他在蓝云咖啡厅看到了马丁和卡尔在一起。如果我要相信他的话，那么吉姆的背景（培训和经验）应该使他能够认出马丁和卡尔。他也应该能够辨别他们一起出去的情况。特别是，他应该知道那是什么样的地方，他应该知道偶然相遇和一起出去的区别。假设蓝云咖啡厅是一个人们经常独自进出并与任何熟人一起加入的咖啡厅，而不是一个只与自己来的人坐在一起的正式餐厅。他应该知道这是哪种类型的地方，并能够将偶然相遇和一起出去的区别应用到这个案例中。虽然这种背景经验和知识并不是专业知识，但如果他在这个问题上要有可信度，这是必要的。

1. Lack of Apparent Conflict of Interest  
   明显利益冲突缺乏

Probably the basketball coach had a conflict of interest. That is, he presumably stood to gain (in this case, probably financially) from saying what he said about Chevrolets. It is standard practice for sports figures to be paid for endorsing products. So the basketball coach presumably did not satisfy the criterion of lack of apparent conflict of interest when he made his statements about Chevrolets.  
可能篮球教练存在利益冲突。也就是说，他可能从他对雪佛兰的言论中获得了利益（在这种情况下，可能是经济利益）。体育界人士为代言产品而获得报酬是一种常见做法。因此，篮球教练在他对雪佛兰的陈述中可能没有满足明显利益冲突的标准。­ketball coach presumably did not satisfy the criterion of lack of apparent conflict of interest

The pathologist, on the other hand, seemed to have no conflict of interest. That is, she did not seem to stand to gain from saying that the knife stroke was not a powerful one (as opposed to saying that it was a powerful one). So the pathologist did appear to satisfy this criterion when she made the statement about the strength of the knife stroke.  
然而，病理学家似乎没有利益冲突。也就是说，她似乎没有从说刀伤不是强力的（相对于说它是强力的）中获益。因此，当她对刀伤的力度发表陈述时，病理学家似乎满足了这个标准。­erful

In my comments about the degree of satisfaction of the conflict of interest criterion by the two speakers, I hedged by using such terms as presumably and seemed to. I did this because I am not certain of either judgment. There is good reason to believe that the basketball coach was paid to endorse Chevrolets and no reason, as far as I know, to believe that the pathologist received an incentive for testifying one way rather than the other. But I did not see the coach receive money for the endorsement. Furthermore, if the pathologist had received an incentive to say one thing rather than the other, those involved would have made every effort to keep the jurors (and everyone else as well) from knowing this. If the pathologist took money for saying one thing rather than another, then she might well have lost her job.  
在我对两位发言人的利益冲突标准满意程度的评论中，我使用了“可能”和“似乎”的词语来进行回避。我这样做是因为我对这两个判断都不确定。有充分的理由相信篮球教练是受到报酬来代言雪佛兰的，而据我所知，没有理由相信病理学家在作证时收到了某种激励。但我没有看到教练接受代言费。此外，如果病理学家确实因为说某种观点而得到了激励，那么相关人员会尽一切努力让陪审团（以及其他人）不知道这一点。如果病理学家因为说某种观点而得到了报酬，那么她很可能会失去工作。­terion ­one else

So, in stating this criterion, it is best to include the word apparent: The person should have no apparent conflict of interest.  
因此，在陈述这个标准时，最好包括明显这个词：这个人不应该有明显的利益冲突。

Conflict of interest need not be merely financial. Sometimes people get deeply involved in and attached to a cause (for example, one side or the other on the issue of gun control, or the issue of what hockey team is better). Because they believe so strongly in their positions, saying things that help their side are in their interests. So, if someone deeply committed to a cause says something that affects the success of his or her interest, that person has a conflict of interest. This does not mean that the person is wrong, nor does it mean that the person has actually let his or her special interest affect a judgment. It is only a warning that there might be some undue influence (possibly even a subconscious influence) and that the person’s credibility is thereby lessened.  
利益冲突不一定仅仅是财务上的。有时候人们会对某个事业深感投入和依恋（例如，在枪支管制问题上的一方或另一方，或者在哪个曲棍球队更好的问题上）。因为他们坚信自己的立场，所以说一些有利于他们一方的话对他们有利。因此，如果一个深信某个事业的人说了一些影响他或她利益成功的话，那个人就存在利益冲突。这并不意味着这个人是错的，也不意味着这个人实际上让自己的特殊利益影响了判断。这只是一个警告，可能存在一些不当的影响（甚至是潜意识的影响），并且这个人的可信度因此降低。­

­Other sorts of interests that might result in a conflict of interest include receiving an award or a prize, making the team, being popular, avoiding punishment, getting an “A,” being elected president, and securing power. Can you think of any others?   
其他可能导致利益冲突的利益包括获得奖项或奖品，进入团队，受欢迎，避免惩罚，取得A级成绩，当选总统和确保权力。你能想到其他的吗？­

1. Agreement with Others Equally Qualified  
   与其他同样合格的人达成协议

If two people satisfy equally the other criteria for credibility but disagree with each other, then which one is more credible? Putting the question this way suggests the answer: We generally should take the word of neither. One of them might well be right, but given that they are otherwise equal, the disagreement calls for us to take the word of neither. We would have to find other ways to decide which statement to believe, if any.  
如果两个人在可信度的其他标准上都同样满足，但彼此意见不一致，那么哪个更可信？以这种方式提出问题暗示了答案：我们通常不应相信任何一方的话。其中一个可能是正确的，但鉴于他们在其他方面是相等的，这种分歧要求我们不相信任何一方的话。如果有的话，我们必须找到其他方法来决定要相信哪个陈述。

On the other hand, if people who come out well on the other criteria also agree with each other, then that is all the more reason to take their word. But this is no guarantee that they are correct. It sometimes happens that all the people who satisfy the other criteria are wrong. For example, at one time all the authorities held that the earth is flat (not roughly spherical) in shape. But they were wrong.  
另一方面，如果在其他标准上表现良好的人们也互相同意，那就更有理由相信他们的话了。但这并不保证他们是正确的。有时候，满足其他标准的所有人都是错误的。例如，曾经所有权威都认为地球是平的（不是大致球形）。但他们错了。

­ria as well as he does (which is not very well). For example, he is in disagreement with the football player who endorses Fords (and who similarly does not do well on the other criteria). So their disagreement with each other further disqualifies each as an authority on car quality.The basketball coach is in disagreement with others who satisfy the other criteria as well as he does (which is not very well). For example, he is in disagreement with the football player who endorses Fords (and who similarly does not do well on the other criteria). So their disagreement with each other further disqualifies each as an authority on car quality.  
篮球教练与其他满足其他标准与他一样好（并不是很好）的人意见不合。例如，他与支持福特汽车的足球运动员意见不合（同样在其他标准上表现不佳）。因此，他们彼此之间的意见不合进一步使他们不适合作为汽车质量的权威人士。

Because these two already come out poorly on the other criteria, it does not make so much difference to note that they come out poorly on this criterion. But there are cases where coming out poorly on this criterion does make a difference. Suppose that two experts who satisfy the other criteria disagree with each other about whether a particular nuclear power plant is safe. Even though one of them might well be right, we cannot take one’s word over the other. Considering only these two, we cannot treat one as more credible than the other. Hence, if we are to have a reason­able belief about the matter, we must go further than seeking their word about it. This is a common situation with current controversial issues. Even though it helps to develop ways to be wise in our selection of people to believe, we have to develop other techniques for judging. More about these other ways as we proceed in this course. (I am not promising to produce a magic formula for deciding what to believe about difficult issues such as nuclear power plants. Life is not that simple!)

This criterion can be stated as follows: The person should be in agreement with other people who satisfy the other criteria as well or better.  
因为这两个标准在其他标准上已经表现不佳，所以在这个标准上表现不佳并没有太大的区别。但是有些情况下，在这个标准上表现不佳确实会有所区别。假设两个满足其他标准的专家对于某个核电站是否安全存在分歧。即使其中一个可能是正确的，我们也不能相信其中一个的话而忽视另一个的意见。仅仅考虑这两个人，我们不能将其中一个视为比另一个更可信。因此，如果我们要对这个问题有一个合理的信念，我们必须超越他们的意见。这是当前有争议问题的常见情况。尽管在选择要相信的人方面有所帮助，但我们必须发展其他的判断技巧。关于这些其他方法，我们将在本课程中逐步介绍。（我并不保证能提供一个关于诸如核电站这类难题的信念决策的魔法公式。生活并不那么简单！）这个标准可以表述如下：这个人应该与满足其他标准甚至更好的其他人达成一致。

1. Reputation  
   声誉

­tion. Ordinarily, a person who has a reputation for lying or being wrong is less cred­ible than a person with a reputation for being right and for telling the truth. One’s general reputation is important, but one’s reputation in the specific area of the state­ment is also important. Some people I know are notoriously and commonly mistaken in some areas and are very dependable in other areas, where they have good reputa­tions. For example, a friend of mine has a poor reputation for information about good places to shop, but a good reputation for her judgments about academic talent. This is so even though she has studied both areas.A fourth basic criterion for judging the credibility of a person is the person’s reputation. Ordinarily, a person who has a reputation for lying or being wrong is less credible than a person with a reputation for being right and for telling the truth. One’s general reputation is important, but one’s reputation in the specific area of the statement is also important. Some people I know are notoriously and commonly mistaken in some areas and are very dependable in other areas, where they have good reputations. For example, a friend of mine has a poor reputation for information about good places to shop, but a good reputation for her judgments about academic talent. This is so even though she has studied both areas.  
一个评判一个人可信度的第四个基本标准是这个人的声誉。通常情况下，一个以撒谎或者错误而出名的人比一个以正确和说实话而出名的人可信度低。一个人的整体声誉很重要，但在陈述领域的声誉也很重要。我认识的一些人在某些领域出名并且常常犯错，但在其他领域却非常可靠，他们在那些领域有好的声誉。例如，我的一个朋友在提供购物信息方面声誉很差，但在判断学术才能方面声誉很好。尽管她两个领域都有研究，但情况就是如此。

­The Illinois basketball coach had a good reputation (at the time) in the area of basketball. As far as I know, he had no reputation, good or bad, in the area of auto mobile judgment, so he comes out weakly positive on this criterion. The pathologist probably had a good reputation in the area of pathology. Neither attorney attempted to challenge her reputation, and she retained her job as a pathologist, so she also came out positively on this criterion.  
伊利诺伊州的篮球教练在篮球领域有良好的声誉（当时）。据我所知，在汽车判断领域，他没有声誉，无论是好还是坏，所以在这个标准上他的评价较弱。病理学家在病理学领域可能有良好的声誉。两位律师都没有试图质疑她的声誉，她保住了病理学家的工作，所以在这个标准上她也是积极的。

This criterion, then, is as follows: The person should have a good reputation for being right and telling the truth in general, and especially in the area of concern.  
这个标准如下：这个人在一般情况下应该有良好的声誉，以正确和真实的方式表达自己，尤其在相关领域。

Tabulating the Results  
整理结果

­ketball coach and the pathologist. As you can see, making a tentative overall judg­ment requires balancing the importance of each of the subjudgments. There is no mechanical way to do this. Even so, it helps to consider these credibility criteria. Often that is the best we can do in a situation in which we have incomplete knowledge.One way to organize your results in applying the four basic criteria to a statement is to assign a rating on each criterion. Then tentatively summarize your judgments. In Table 3.1, I report the results of my having done this for the statements of the basketball coach and the pathologist. As you can see, making a tentative overall judgment requires balancing the importance of each of the subjudgments. There is no mechanical way to do this. Even so, it helps to consider these credibility criteria. Often that is the best we can do in a situation in which we have incomplete knowledge.  
应用四个基本标准来组织你对一个陈述的结果的一种方法是为每个标准分配一个评级，然后暂时总结你的判断。在表3.1中，我报告了我对篮球教练和病理学家的陈述进行此项工作的结果。正如你所看到的，做出一个暂时的总体判断需要平衡每个子判断的重要性。这没有机械的方法来做到这一点。即便如此，在考虑这些可信度标准时会有所帮助。通常情况下，这是我们在拥有不完全知识的情况下所能做的最好的事情。

TABLE 3.1 A Summary Of My Judgments, Using Four Basic Credibility Criteria  
表3.1 我的判断总结，使用四个基本可信度标准

Criterion Basketball coach Pathologist about  
准则" "篮球教练" "病理学家关于 *Basketball coach Pathologist*

*the knife strokeabout automobiles the knife stroke  
关于汽车*

|  |  |  |
| --- | --- | --- |
| 1. Background experience and knowledge | Probably weak | Strong |
| 2 Lack of conflict of interest | Very weak | Strong |
| 3. Agreement with others who come out as well as, or better, on other criteria | Very weak | No judgment |
| 4. Reputation | Satisfactory | Strong |
| Tentative overall judgment | Probably not credible on this statement | Probably credible on this statement |

Check-Up 3A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**3:1 If a person stands to profit financially from saying one thing rather than another, that person has a conflict of interest.  
3:1 如果一个人从说一件事而不是另一件事中获得经济利益，那个人就存在利益冲突。**

**3:2 Only people who are experts can satisfy the background-experience- and-knowledge criterion.  
只有专家才能满足背景经验和知识的标准。**

**3:3 The criteria for credibility more directly apply to judging whether to take someone’s word than to judging whether the person is correct.   
3:3 可信度的标准更直接地适用于判断是否相信某人的话，而不是判断这个人是否正确。**

Short Answer  
简答题

**3:4 Find a particular assertion in a newspaper. Cut out the selection in which it appears, identify the assertion explicitly (perhaps by highlighting or underlining), making sure that you identify only one assertion. Explicitly identify the source. Attach the selection to a paper on which you report the results of your attempt to apply the four basic criteria of credibility to the source of the assertion. Make an overall judgment about the assertion, answering the question, “Should I take this person’s word on this?” Suggestion: Use the tabulation method I described. Another suggestion: Because your judgment probably will not be at one extreme or the other (“a fully credible source for this statement” or “a totally incredible source for this statement”), you might need qualifying words such as probably, it seems, or presumably.  
3:4 在报纸中找到一个特定的主张。剪下出现该主张的选段，明确标识该主张（可以通过高亮或下划线），确保只标识一个主张。明确标识出处。将选段附在一张纸上，报告你尝试将四个基本可信度标准应用于该主张的结果。对该主张做出总体判断，回答问题，我应该相信这个人的话吗？建议：使用我描述的制表方法。另一个建议：因为你的判断可能不会极端（对于这个陈述来说，完全可信的来源或完全不可信的来源），你可能需要使用修饰词，比如可能，似乎，或者大概。**­­son’s word on this?” Suggestion: Use the tabulation method I described. Another suggestion: Because your judgment probably will not be at one extreme or the other (“a fully credible source for this statement” or “a totally incredible source for this statement”), you might need qualifying words such as

**3:5 Do the same thing for an assertion you find in a magazine.  
3:5 对于你在杂志中找到的断言，做同样的事情。**

**3:6 Do the same thing for a serious assertion made by a friend. Write it down and describe the situation before you report your results.  
3:6 对于朋友所做的严肃断言，也要做同样的事情。将其写下并描述在报告结果之前的情况。**

Further Criteria  
进一步的标准

In addition to the four basic criteria for credibility, certain other less basic ones should be taken into consideration, if possible. They too are important, though often not so important as the first four. Like the first four, these criteria require good judgment in application. Judgment is required in deciding whether each criterion is satisfied and in deciding the importance of each criterion in a given situation.  
除了可信度的四个基本标准之外，如果可能的话，还应该考虑一些其他不太基本的标准。虽然通常不像前四个那样重要，但它们也很重要。与前四个标准一样，这些标准在应用中需要良好的判断力。在决定每个标准是否满足以及在给定情况下每个标准的重要性方面，需要进行判断。

1. Established Procedures  
   建立的程序

­fied that the type of blood found on the knife was type A, the same as Al Hamilton’s blood type. Among other things, the expert testified that she had used the established procedures for determining blood type. If she has used anything but the established procedures, her testimony would have been less credible.Although established procedures sometimes give incorrect results, it usually is best to follow them, if such procedures exist. In the trial, one of the expert witnesses testified that the type of blood found on the knife was type A, the same as Al Hamilton’s blood type. Among other things, the expert testified that she had used the established procedures for determining blood type. If she has used anything but the established procedures, her testimony would have been less credible.  
尽管已建立的程序有时会给出错误的结果，但如果存在这样的程序，最好还是遵循它们。在审判中，其中一名专家证人作证称，在刀上发现的血液类型是A型，与阿尔·哈密尔顿的血型相同。专家还作证称，她使用了确定血型的已建立程序。如果她使用的不是已建立的程序，她的证词就会不太可信。

­vations are made on request of the pilot of that flight or on the initiative of the observer. If no airline flight is expected and if there is a significant change in the weather at half after the hour, this change would probably go unreported. So a pilot of a nonairline aircraft would probably be given incorrect information until the next hourly report because until that time, the old information would still be on the weather report net­work. The established procedure would probably yield an incorrect report.On the other hand, we all know of cases in which the established procedures have produced incorrect answers. For example, the established procedures for determining the weather at an airport I know are as follows: An observer emerges from a building ten minutes before every hour and makes a ceiling and visibility observation. If a flight of the airline employing (and thus paying) the observer is expected, additional observations are made on request of the pilot of that flight or on the initiative of the observer. If no airline flight is expected and if there is a significant change in the weather at half after the hour, this change would probably go unreported. So a pilot of a nonairline aircraft would probably be given incorrect information until the next hourly report because until that time, the old information would still be on the weather report network. The established procedure would probably yield an incorrect report.  
另一方面，我们都知道有些情况下，已经建立的程序会产生错误的答案。例如，我所了解的一个机场天气确定的程序如下：每个小时的前十分钟，观察员会从建筑物中出来进行天花板和能见度观测。如果有一家雇佣该观察员的航空公司的航班预计到达，那么在该航班的飞行员要求或观察员主动提出的情况下，会进行额外的观测。如果没有预计到达的航班，并且在半小时后天气发生了显著变化，这种变化可能不会被报告。因此，非航空公司飞机的飞行员在下一个小时报告之前可能会得到错误的信息，因为在那个时候，旧的信息仍然存在于天气报告网络中。已经建立的程序可能会产生错误的报告。

Because of such exceptions, the word ordinarily is included in the statement of the criterion: Ordinarily the person should have used established procedures, if any exist.   
由于存在这样的例外情况，通常在标准的陈述中会包括这个词：通常情况下，如果有任何已建立的程序，人们应该使用它们。

1. Known Risk to Reputation  
   已知声誉风险

Experts are well aware that they must guard their reputations so that they can continue to play the role of experts. This is an extra reason for them to try to be accurate about what they say. Experts I know are usually more careful about what they say when they know that their reputations can be hurt if they arc discovered to be wrong. If you think about it, I believe that you w ill agree that most people tend to be more careful in situations in which their errors would be discovered.  
专家们都清楚，他们必须保护自己的声誉，以便能够继续扮演专家的角色。这是他们努力确保自己说的话准确的额外原因。我认识的专家们通常在知道如果被发现错误会损害他们的声誉时更加谨慎地说话。如果你仔细思考一下，我相信你会同意大多数人在可能被发现错误的情况下会更加谨慎。­tinue to play the role of experts. This is an extra reason for them ­

The blood analyst knew that the blood could be reanalyzed by someone else. If she turned out to be wrong, she knew that this would hurt her reputation. This in turn would hurt her capacity to earn a living as a technician and testifier. (Experts who testify in the courtroom are generally paid one way or another.) So she satisfied this criterion of known risk to one's reputation.  
血液分析师知道血液可以被其他人重新分析。如果她被证明是错误的，她知道这会损害她的声誉。这反过来会损害她作为技术人员和证人谋生的能力。（在法庭上作证的专家通常会以某种方式获得报酬。）因此，她满足了这个已知的声誉风险标准。

In several kinds of situations, one’s reputation is at little or no risk. In such sit­uations, this criterion is not satisfied, or not well satisfied. For example, a friend told me that he saw a pileated woodpecker while on a solitary walk through the woods on Connecticut Hill near Ithaca, New York. Though rare, pileated woodpeckers do live in that area, but there was no way of checking whether my friend actually saw one. So his reputation was not at risk and he knew it. This is a situation in which there is no way of gathering further evidence to check the original statement. The evidence cannot be gathered because the event has already occurred and is no longer accessi­ble. (I believed him, by the way, but he did not satisfy this criterion in making this report.)

Another kind of an occurrence inaccessible for others is a person’s feeling or sensation, such as a backache. It is often very difficult for someone else to tell whether you have a backache, so people who report backaches generally do not satisfy this criterion. Their reputations for honesty are often not at risk, because generally no one else can tell whether they really do have a backache.  
在几种情况下，一个人的声誉很少或根本没有风险。在这种情况下，这个标准没有得到满足，或者没有得到很好的满足。例如，一个朋友告诉我，他在纽约州伊萨卡附近的康涅狄格山上独自散步时看到了一只大斑啄木鸟。虽然大斑啄木鸟在那个地区很少见，但没有办法核实我的朋友是否真的看到了。所以他的声誉没有受到威胁，他也知道这一点。这是一种无法收集进一步证据来核实原始陈述的情况。证据无法收集，因为事件已经发生，不再可获得。（顺便说一句，我相信他，但他在这个报告中没有满足这个标准。）另一种对他人来说无法获得的事件是一个人的感受或感觉，比如背痛。别人很难判断你是否有背痛，所以报告背痛的人通常不满足这个标准。他们的诚实声誉通常不会受到威胁，因为通常没有人能够判断他们是否真的有背痛。­

Sometimes a reputation is not at risk because the statement is too vague. For example, I found the following prediction in my horoscope in the local newspaper: “Some situation connected to travel, legalities, publicity may bring upsets.” The reputation of the astrologer who wrote that prediction was not at risk because there is no way to check the truth of the prediction. It is too vague. It says “may bring upset,” so if there are no upsets, the prediction is not shown wrong. It would not even be cast under a veil of suspicion if there are no upsets. Furthermore, the three categories cover so much of life’s interests that there is bound to be some degree of upset in at least one on almost any given day. Can you think of any other sources of vagueness?  
有时候，声誉并不会因为陈述过于模糊而受到威胁。例如，我在当地报纸上的星座运势中发现了以下预测：与旅行、法律、宣传有关的某种情况可能会引起不安。撰写该预测的占星师的声誉并不会受到威胁，因为无法核实预测的真实性。它太过模糊。它说可能会引起不安，所以如果没有发生不安，预测就不会被证明是错误的。如果没有发生不安，它甚至不会受到怀疑的阴影。此外，这三个类别涵盖了生活中的许多兴趣领域，几乎在任何一天都至少会有某种程度的不安。你能想到其他模糊性的来源吗？­

The astrologer’s reputation was not at risk. Presumably, the astrologer knew this, so the astrologer does not satisfy the sixth criterion: The person should know that his or her reputation can be helped or hurt by the statement’s being discovered to be correct or incorrect.  
占星家的声誉并没有受到威胁。可以推测，占星家知道这一点，所以占星家不满足第六个标准：该人应该知道他或她的声誉可能会因为这些陈述被发现是正确或错误而受到帮助或伤害。*­*

1. Ability to Give Reasons  
   能够给出理由

If we are to take someone’s word, that person should have good reasons for what he or she says. Otherwise, we should be suspicious.  
如果我们要相信某人的话，那个人应该有充分的理由支持他或她所说的。否则，我们应该持怀疑态度。

Depending on the content, the reason might simply be that the person saw something clearly. Jim’s reason for saying that Martine was at The Blue Cloud might simply be that he saw her there.  
根据内容而定，原因可能只是因为这个人看到了某件事情。吉姆说玛丁在蓝云酒吧的原因可能只是因为他在那里见过她。

On the other hand, my physician’s reason for saying I had appendicitis cannot be that he saw it. Inflamed appendixes are not seen during the diagnosis stage. Instead, he reasoned that I had appendicitis. His reasons were that I had a fever, had abdominal pain aggravated by pressing, and had a rapidly increasing above-normal white corpuscle count, among others. He was able to tell me these reasons and explain their significance. This ability helped make him credible.  
另一方面，我的医生说我得了阑尾炎的原因不能是他看到了。在诊断阶段是看不到发炎的阑尾的。相反，他推断我得了阑尾炎。他的理由是我发烧，腹部按压会加重疼痛，并且白细胞计数迅速增加超过正常水平，等等。他能够告诉我这些理由并解释它们的重要性。这种能力帮助他变得可信。

We cannot always insist on the person’s giving understandable reasons. Sometimes people are too busy to give reasons to us, and sometimes the reasons are so complicated that an ordinary person cannot understand them. But generally, an expert who understands the topic well also understands it well enough to give an understandable explanation. Such an explanation might be simplified and might neglect some important refinements, but it should be intelligible. One mark of the better experts is that they can generally do this.  
我们不能总是坚持要求人们给出可以理解的理由。有时候人们太忙了，无法给我们解释的理由，有时候这些理由太复杂，普通人无法理解。但是通常情况下，了解该主题的专家也足够理解它，可以给出一个可以理解的解释。这样的解释可能会简化，并可能忽略一些重要的细节，但它应该是可理解的。更好的专家的一个标志是，他们通常能做到这一点。

One possible reason a person might have for not doing this is that he or she is trying to hide something—perhaps ignorance, perhaps worse. You must judge these things on the basis of what you know about the situation. Unfortunately, you usually cannot be sure.  
一个人可能不这样做的一个可能的原因是他或她试图隐藏某些东西 - 也许是无知，也许更糟。您必须根据您对情况的了解来判断这些事情。不幸的是，通常您无法确定。

The seventh criterion is as follows: The person should be able to give understandable reasons in support of the statement. It is also generally desirable that the person actually do so, especially if asked for reasons.  
第七个标准如下：个人应该能够提供支持该陈述的可理解的理由。如果被要求提供理由，个人实际上也应该这样做，这一点通常是可取的。*­­ally do so, especially if asked for reasons.*

1. Careful Habits  
   小心习惯

People do not always show the same amount of care from one activity to the next. But carelessness of one sort is often an indication of carelessness of a similar sort. A statement made by a person known to be careless in one area is suspect if the area is similar to that of the statement.  
人们并不总是在不同的活动中表现出相同程度的关心。但某种程度的粗心往往是类似粗心的一个指示。如果一个人在某个领域被认为是粗心的，那么他在类似领域的陈述就是值得怀疑的。

If Jim were known to be careless in identifying people at The Cha Cha Restaurant, then he might well be careless in identifying people at The Blue Cloud. If the blood technician were known to be very careful in mixing chemicals, then that counts in her favor for care in testing blood.  
如果人们知道吉姆在查查餐厅辨认人时不细心，那么他在蓝云餐厅辨认人时也可能不细心。如果血液技术员被认为在混合化学物时非常小心，那么这对她在检测血液时是有利的。

Here is the criterion: The statement maker should have careful habits in areas similar to the area of the statement.  
这是标准：“陈述者应该在与陈述领域相似的领域中具有谨慎的习惯。”

Summary  
摘要

­ment. Again, in making an overall judgment you must decide how important each is In summary, these four additional criteria are concerned with established procedures, known risk to reputation, ability to give reasons, and habits of care in similar areas. I realize that these criteria are somewhat vague and difficult to apply. You might think of them as suggestions for questions to ask yourself about someone making a statement. Again, in making an overall judgment you must decide how important each is in a given situation. This is what I had to do in Table 3.2 when applying these four additional criteria to the coach’s and pathologist’s statements.  
总结一下，这四个额外的标准与已建立的程序、声誉风险、能够给出理由以及在类似领域中的谨慎习惯有关。我意识到这些标准有些模糊且难以应用。你可以将它们看作是关于对某人的陈述提出问题的建议。再次强调，在做出总体判断时，你必须决定在特定情况下每个标准的重要性。这就是我在将这四个额外的标准应用于教练和病理学家的陈述时所做的。

I assigned unknown to the coach on established procedures because, although I think that he did not use them, I am not sure enough of this to make a judgment.   
我根据既定程序将未知指派给教练，因为虽然我认为他没有使用它们，但我对此不够确定以做出判断。

TABLE 3.2 A Summary Of My Judgments, Using Four Additional Credibility Criteria  
3.2表 我的判断总结，使用四个额外的可信度标准

*Coach about Pathologist aboutCriterion Coach about Pathologist about  
标准" "教练" "病理学家*

*knife strokeautomobiles knife stroke  
汽车 刀割*

|  |  |  |  |
| --- | --- | --- | --- |
| 5. | Established procedures | Unknown | Probably strong |
| 6. | Known risk to reputation | Satisfactory | Strong |
| 7. | Ability to give reasons | Strong | Strong |
| 8 | Careful habits | Satisfactory | Strong |
| Summary (using all eight criteria) | | Probably not credible on this statement | Probably credible on this statement |

On the established procedures category, I rated the pathologist’s statement *probably strong* because, although she used some established procedures for measuring the depth of the wound and the bones for damage, I suspect that there are no established procedures for determining as a whole how forceful the blow was. (1 might be wrong about this, but there was no w ay a juror could tell. We were not allowed to ask any questions.)

­factory because other people can drive and check the Chevrolet automobile. 1 did not rate it strong on this criterion because there is so much disagreement about automo­biles and about criteria for judging them, making it difficult to prove him wrong.On the known-risk-to-reputation criterion, I rated the coach’s statement satisfactory because other people can drive and check the Chevrolet automobile. 1 did not rate it strong on this criterion because there is so much disagreement about automobiles and about criteria for judging them, making it difficult to prove him wrong.  
在已建立的程序类别中，我将病理学家的陈述评为可能强烈，因为虽然她使用了一些用于测量伤口深度和骨骼损伤的已建立程序，但我怀疑没有已建立的程序来确定打击的力度。 （我可能对此有误解，但陪审员无法判断。我们不被允许提问。）根据已知的声誉风险标准，我将教练的陈述评为令人满意，因为其他人可以驾驶和检查雪佛兰汽车。根据这个标准，我没有给予它强烈评价，因为关于汽车以及评判标准的意见存在很大分歧，这使得很难证明他是错的。

­ria into account, are I rated both strong on ability to give reasons because both gave reasons that I understand. On careful habits, I rated the coach satisfactory because I would guess that he has careful habits in judging automobiles. I rated the pathologist strong on careful habits because she seemed quite careful about what she said on the witness stand and because her habits in the area under consideration would probably have to be careful for her to keep her job. My overall judgments then, taking all eight criteria into account, are probably not credible for the coach, and probably credible for the pathologist. My principal concerns about the coach’s statement about automobiles were his probable conflict of interest and probable lack of special expertise about automobiles. I weighted them most heavily among the eight criteria.  
我对两者在给出理由方面的能力都评价为强，因为他们都给出了我能理解的理由。在细致的习惯方面，我对教练的评价是满意的，因为我猜他在判断汽车方面有细致的习惯。我对病理学家的细致习惯评价为强，因为她在证人席上说话时似乎非常谨慎，而且考虑的领域中她的习惯可能必须谨慎才能保住工作。综合考虑所有八个标准后，我的整体判断对于教练可能不可信，对于病理学家可能可信。我对教练关于汽车的陈述最关注的是他可能的利益冲突和对汽车的专业知识可能的缺乏。在这八个标准中，我对它们的权重最重。

Be aware that this summary credibility judgment I have just reported is not based on an exhaustive investigation of each of the speakers and their statements. Rather, it is based on a realistic amount of effort given the situations in which I found myself. One always has to make a compromise between the amount of time one spends and the amount of certainty one can have. Given my decision about what was a realistic amount of effort, I judged that I should not take the coach’s word on automobiles and that I should take the pathologist’s word about the strength of the knife stroke.  
请注意，我刚刚报告的这个摘要可信度判断并不是基于对每个发言人及其陈述进行详尽调查。相反，它是基于我所处情况下付出的合理努力。在时间投入和确定性之间，人们总是不得不做出妥协。鉴于我对合理努力的决定，我判断我不应该相信教练对汽车的说法，而应该相信病理学家对刀伤强度的说法。

These eight credibility criteria must be applied with good judgment, both in deciding whether each criterion is satisfied and in deciding how much weight to give to each. While applying these criteria, and after you have applied them, you should be open to new information about sources and ready to change your mind about their credibility, if need be. Always attempt to see things from others’ points of view.   
这八个可信度标准必须以良好的判断力来应用，无论是决定每个标准是否满足，还是决定给予每个标准多少权重。在应用这些标准时，以及在您应用它们之后，如果有需要，您应该对有关来源的新信息持开放态度，并准备改变对它们可信度的看法。始终尝试从他人的角度看问题。

­ing dispositions presented in Chapter 1.Be alert for alternatives and be well-informed. In other words, although there are no mechanical rules for good judgment, your judgment is improved by the critical thinking dispositions presented in Chapter 1.  
对替代方案保持警惕并且要有充分的了解。换句话说，虽然没有机械的规则来判断好坏，但你的判断能够通过第一章中介绍的批判性思维倾向得到提升。

Check-Up 3B

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

3:7 If a procedure is an established one, then it is correct.  
3:7 如果一个程序是已经建立的，那么它是正确的。

**3:8 For credibility purposes, it is best for the statement maker to know that his or her reputation is at risk.  
为了可信度，陈述者最好知道自己的声誉处于危险之中。**

**3:9 For credibility purposes, the vaguer the statement, the better, because vague statements cannot be proved wrong.  
为了可信度，陈述越模糊越好，因为模糊的陈述无法被证明为错误。**

**3:10 If a statement maker knows that there is no way to check his or her statement, then he or she is probably not credible.  
3:10 如果一个陈述者知道没有办法验证他或她的陈述，那么他或她可能不可信。**

**3:11 A person making a credible statement should generally be able to give understandable reasons in support of the statement.  
3:11 一个做出可信陈述的人通常应该能够给出支持该陈述的可理解的理由。**

**3:12 If a person is careless in one kind of activity, then that person is not likely to be credible in any other kind of activity.  
如果一个人在某种活动中不小心，那么这个人在其他任何活动中都不太可信。**

Short Answer  
简答题

**3:13 Go back to the newspaper statement you evaluated for 3:4 and apply the four additional criteria to it. (Suggestion: Use the tabulation method again.) Then make and report an overall judgment about the credibility of this statement based on your application of all eight criteria.  
3:13 回到你对3:4进行评估的报纸声明，并对其应用四个附加标准。（建议：再次使用制表法。）然后根据你对所有八个标准的应用，做出并报告关于该声明可信度的总体判断。**

**3:14 Do the same for the statement you found in the magazine (3:5).  
3:14 对于你在杂志中找到的陈述（3:5），做同样的事情。**

**3:15 Do the same for the statement by your friend (3:6).  
3:15 对你朋友的陈述（3:6）做同样的事情。**

Fallacy Labels  
谬误标签

A fallacy is an error in thinking or reasoning. Transfer, appeal to authority, testimonial, and personal attack are labels used for fallacies in the area of credibility of sources. But is it always wrong to do the things so labeled? Let us consider them one at a time.  
谬误是思维或推理中的错误。转移、权威诉诸、证言和人身攻击是用于可靠来源的谬误的标签。但是，这些被标记的行为总是错误的吗？让我们逐一考虑它们。*­nial,*

Transfer  
转移

Earlier in this unit, I suggested that it is generally a mistake to take an authority’s word in some other area than that in which the person is an authority. That is, it is often a mistake to transfer the assumption of expertise from one area to another. Although this is generally true, it depends on how similar the areas are. If the basketball coach told me that a particular person is a good football player, I would be inclined to believe him because the areas are similar enough and because there is much personal contact between experts in the two fields. On the other hand, I am not ready to transfer the coach’s expertise to automobiles, as I said before. So even though transfer is generally a fallacy, it is not always so.  
在本单元的早些时候，我建议在一个人不是权威的领域中，相信他的话通常是一个错误。也就是说，将专业知识的假设从一个领域转移到另一个领域通常是错误的。尽管这通常是正确的，但它取决于这些领域的相似程度。如果篮球教练告诉我某个人是一名出色的足球运动员，我会倾向于相信他，因为这两个领域足够相似，并且两个领域的专家之间有很多个人接触。另一方面，我不准备将教练的专业知识转移到汽车领域，正如我之前所说的。所以尽管转移通常是一种谬误，但并不总是如此。­ketball coach told me that a particular person is a good football player, I would be inclined to believe him because the areas are similar enough and because there is

Appeal to Authority  
权威呼吁

­ments of someone else, it would be foolish to condemn all appeals to authority. The defense attorney did a reasonable thing in appealing to the authority of the patholo­gist about the strength of the knife stroke. The pathologist was an expert Because much of our knowledge comes from other people and is based on the statements of someone else, it would be foolish to condemn all appeals to authority. The defense attorney did a reasonable thing in appealing to the authority of the pathologist about the strength of the knife stroke. The pathologist was an expert and an appropriate source of knowledge about what happened. There were a number of other statements in that trial that were justified by appeal to authority, including statements about fingerprints, blood type, the cause of death, and the position of the body. Without appeals to authority, our court system would collapse. We are often justified in taking someone else’s word, including the word of experts—not always, as we all know, but often.  
因为我们的很多知识来自他人，并且基于他人的陈述，所以一味地谴责对权威的引用是愚蠢的。辩护律师在向病理学家询问刀伤力度时做了一个合理的事情。病理学家是一位专家，对发生的事情有相应的知识来源。在那次审判中，还有其他一些陈述是通过对权威的引用来证明的，包括指纹、血型、死因和尸体位置等陈述。如果没有对权威的引用，我们的法院系统将会崩溃。我们经常有理由相信他人的话，包括专家的话——并非总是，我们都知道，但通常如此。

Appeal to authority is not necessarily wrong, but it is not necessarily right either. Each appeal to authority must be judged on its own merits. You are already familiar with this process of judging sources for their credibility.  
对权威的诉求不一定是错误的，但也不一定是正确的。每个对权威的诉求都必须根据其自身的价值进行评判。你已经熟悉了评判信息来源可信度的过程。

Testimonial  
推荐书评

The coach's claim that the Chevrolet is a good car would be called a testimonial for Chevrolet. In this case, primarily because of probable conflict of interest and presumed lack of expertise, one should probably not take his word on the matter. But there are many cases of testimonial that we do accept and that should be believed. Eyewitness testimony should of course generally be believed if it satisfies credibility criteria. But eyewitness testimony is not really properly called testimonial. Rather, a testimonial is testimony in support of some particular idea, thing, or person.  
教练声称雪佛兰是一辆好车，这可以被称为对雪佛兰的推荐。在这种情况下，由于可能存在利益冲突和缺乏专业知识，我们可能不应该完全相信他的话。但是，有很多我们接受并应该相信的推荐案例。如果目击证词符合可信度标准，当然应该被相信。但是目击证词实际上并不是真正的推荐。相反，推荐是对某个特定想法、事物或人的支持证词。­

When one of my colleagues assured me that a particular person I was thinking of hiring for a writing job was a well-organized, clear, coherent writer, that was a testimonial. When a friend told me that a particular movie was well worth seeing, that was a testimonial. In both cases, the testimonial satisfied very well the credibility criteria. I believed the testimony, acted on it, and was glad that I had.  
当我的一位同事向我保证，我考虑雇佣的某个人是一个组织有序、清晰、连贯的作家时，那是一个证明。当一位朋友告诉我某部电影非常值得一看时，那也是一个证明。在这两种情况下，证明非常满足可信度标准。我相信了这些证明，采取了行动，并为此感到高兴。­­

In both cases, it was very important to know well the source of the testimony in order to apply the criteria of credibility. In the case of the job-related testimony, it was important to know something about the writing standards of the testifier (my colleague) and especially important to know the extent of conflict of interest, if any. I have repeatedly found that teachers and advisers give misleading, overgenerous testimonials about their own students and advisees. I suppose that this is partly because of strong concern for the welfare of the student and partly because it is to the teacher’s credit for the student to be well-placed. In the case in question, there was no strong conflict of interest, as far as I could see, and the colleague struck me as a scrupulously honest person. He also knew me well and realized that his reputation with me would be damaged if I discovered him to be wrong about the person. So I took his word and did not regret doing so.  
在这两种情况下，了解证词的来源以便应用可信度标准非常重要。对于与工作相关的证词，了解证人（我的同事）的写作标准是很重要的，尤其需要了解是否存在利益冲突的程度。我反复发现教师和顾问对自己的学生和被咨询者提供误导性、过于慷慨的推荐。我想这部分是因为对学生福祉的强烈关注，部分是因为学生能够取得好的成绩对教师来说是一种荣誉。在这个案例中，据我所见，并没有明显的利益冲突，而且我觉得我的同事是一个极其诚实的人。他也很了解我，知道如果我发现他对这个人的评价有误，他的声誉会受损。所以我相信了他的话，并且没有后悔这样做。­

­The principal danger with movie testimonials from friends is the possible dif ference in taste, as we all well know. We must take the friend s taste reputation into consideration. This danger exists even for testimonials by professional critics. But they also have the possibility of conflict of interest (which is not generally found for friends’ testimony about movies). Critics are under pressure from their employers and the newspapers that carry their syndicated columns, and they might well be trying to please someone or do a favor for a friend in the motion picture industry. Recently, a local critic panned a local opera production. The critic’s commentary angered some local people and the critic was fired. Critics know that their jobs are dependent to some extent on such political pressures and as a result have a continual conflict of interest.  
朋友的电影推荐存在的主要危险是口味的可能差异，我们都知道这一点。我们必须考虑朋友的口味声誉。即使是专业评论家的推荐也存在这种危险。但他们也可能存在利益冲突的可能性（这在朋友对电影的证词中通常不会出现）。评论家受到雇主和刊登他们专栏的报纸的压力，他们可能会试图取悦某人或为电影业中的朋友效劳。最近，一位当地评论家批评了一部当地的歌剧制作。评论家的评论激怒了一些当地人，结果他被解雇了。评论家知道他们的工作在一定程度上取决于这种政治压力，因此他们不断面临利益冲突。

It should be clear, then, that there are cases of testimonial that we should not trust, but there are also cases that we should trust. Testimonial is not automatically a fallacy. The criteria for judging the credibility of sources are useful in judging whether to believe testimonials.  
应该清楚的是，有些见证我们不应该相信，但也有一些我们应该相信的见证。见证并不自动成为谬误。评判来源可信度的标准在判断是否相信见证时是有用的。

Personal Attack  
个人攻击

A personal-attack argument is an attack on the character or qualifications of a person rather than a challenge to the merits of the person’s argument. Suppose you present an argument in support of the view that your volleyball team needs more practice. Suppose that someone challenges your argument on the ground that your religious preference differs from hers or that you are selfish and do not share food the way others do. Whether or not these are reasonable attacks on your character, they do not affect your argument, nor do they show anything about whether your team needs more practice. In such cases, a personal-attack argument is a fallacy.  
个人攻击论点是对一个人的品格或资格的攻击，而不是对其论点的挑战。假设你提出了一个支持你的排球队需要更多练习的论点。假设有人挑战你的论点，理由是你的宗教信仰与她不同，或者你自私，不像其他人那样分享食物。无论这些攻击是否合理，它们都不会影响你的论点，也不会证明你的队伍是否需要更多练习。在这种情况下，个人攻击论点是一种谬误。­ers do. Whether or not these are reasonable attacks on

On the other hand, an attack on the character of a witness is a standard and often appropriate maneuver by an attorney in a courtroom. This is simply the application of the criterion of reputation. If someone has repeatedly lied, and if that can be shown in court, then that is good reason for us to be dubious about the person’s testimony. Using the witness’ reputation for being a liar is a reason for suspecting the testimony would be a personal-attack argument.  
另一方面，对证人品格的攻击是法庭上律师的一种常见且常用的策略。这只是声誉标准的应用。如果某人反复说谎，并且在法庭上能够证明，那么我们有充分理由对其证词表示怀疑。利用证人作为一个撒谎者的声誉来怀疑其证词，是一种人身攻击的论证。­cation of the criterion of reputation. If someone has

If a physician has taken a bribe for illegal drug prescriptions, then we have a right to be suspicious about his recommendation that he perform an expensive operation. Noting the bribe in an argument against the physician’s recommendation is a personal-attack argument, but it is not necessarily a fallacy.  
如果一位医生因非法药物处方而收受贿赂，那么我们有权对他建议进行昂贵手术持怀疑态度。在反对医生建议时提到贿赂是一种人身攻击的论证，但不一定是谬误。­

The important thing is whether the attack on the person is relevant, that is, whether it bears on the matter at hand. A person’s reputation for lying is relevant to our decision whether to take the person’s word. A person’s reputation for bribery is relevant to whether we should accept the person’s recommendation about something from which he or she would profit. This is so even if the person’s argument in support of the recommendation looks good. There are many ways in which a person can slant things or deliberately ignore evidence without our realizing it.  
重要的是攻击个人是否相关，也就是说，它是否与手头的问题有关。一个人的谎言声誉与我们决定是否相信他的话相关。一个人的贿赂声誉与我们是否应该接受他或她对某事的推荐相关，尤其是他或她会从中获利。即使这个人对推荐的论据看起来很好，这一点也是如此。一个人可以以许多方式歪曲事实或故意忽略证据，而我们却没有意识到。­port of the recommendation looks good. There are many ways in which a person can slant things or deliberately ignore evidence without our realizing it.

In summary, these supposed fallacies of credibility (transfer, appeal to authority, testimonial, and personal attack) are sometimes fallacies and sometimes not. For the first three, you should apply the criteria for credibility and judge on that basis. For personal attack, you must also decide whether the attack is relevant.   
总之，这些所谓的可信度谬误（转移、权威引用、证词和人身攻击）有时是谬误，有时不是。对于前三种，您应该根据可信度标准进行评判。对于人身攻击，您还必须决定攻击是否相关。

Chapter Summary  
章节摘要

The ideas in this chapter apply to judging the acceptability of reasons (part of the R in FRISCO). The focus has been on judging the credibility of sources of reasons. If a reason comes from a credible source, that helps to make the reason acceptable.  
本章的观点适用于判断理由的可接受性（FRISCO中的R部分）。重点是判断理由来源的可信度。如果一个理由来自可信的来源，那有助于使理由变得可接受。

­tion, established procedures, known risk to reputation, ability to give reasons, and careful habits in similar areas. The set is not exhaustive. You will probably think of others in specific situations.You have considered eight criteria for judging the credibility of sources, the first four of which are basic. These criteria are background experience and knowledge, lack of apparent conflict of interest, agreement with others equally qualified, reputation, established procedures, known risk to reputation, ability to give reasons, and careful habits in similar areas. The set is not exhaustive. You will probably think of others in specific situations.  
你已经考虑了八个评判信息来源可信度的标准，其中前四个是基本的。这些标准包括背景经验和知识、没有明显利益冲突、与其他同样有资格的人达成一致、声誉、已建立的程序、已知的声誉风险、能够给出理由以及在类似领域中的谨慎习惯。这个集合并不是穷尽的。在特定情况下，你可能会想到其他标准。

These criteria apply to personal, public, and vocational situations in which you are trying to decide whether to believe what someone says or what you have read. They also apply to position-paper-writing situations, when you want to cite credible sources to support your reasons. If your sources are not credible, they do not provide legitimate support.  
这些准则适用于个人、公共和职业情境，您在这些情境中试图决定是否相信某人所说的话或您所阅读的内容。它们还适用于撰写立场论文的情境，当您希望引用可靠的来源来支持您的理由时。如果您的来源不可靠，它们就不能提供合法的支持。

The eight credibility criteria do not automatically yield a judgment about the credibility of a source. Your own good judgment is also needed to determine the application of the criteria and their weighting. Good judgment depends heavily on the basic critical thinking dispositions, including being alert for alternatives, looking at things from others’ points of view, being tentative, and trying to be well-informed.  
八个可信度标准并不能自动产生对来源可信度的判断。您还需要自己的良好判断力来确定标准的应用和权重。良好的判断力在很大程度上依赖于基本的批判性思维倾向，包括对替代选择的警觉、从他人角度看问题、持有暂定态度以及努力获取充分信息。

You have also considered some of the fallacy labels people sometimes use when judging the credibility of sources. It is important to understand the meaning of these terms when they are used so that you will not be intimidated and so that you will be able to respond to the implied accusation. Sometimes these things are fallacies and sometimes not:  
你还考虑了人们在评判来源可信度时有时会使用的谬误标签。理解这些术语的含义很重要，这样你就不会感到害怕，并且能够对暗指的指责做出回应。有时这些事情是谬误，有时则不是：

1. *Transfer is an attempt to transfer acceptance of someone’s expertise in one area to some other area. This is usually a fallacy, but not always.  
   转移是试图将某人在一个领域的专业知识转移到另一个领域的尝试。这通常是一种谬误，但并非总是如此。*
2. *Appeal to authority is an attempt to get someone to believe something on the basis of the expertise of someone else. Whether this is a fallacy depends on whether the criteria of credibility are satisfied.  
   权威诉求是试图让某人基于他人的专业知识来相信某事。这是否是谬误取决于可信度标准是否得到满足。*
3. *Testimonial is a source’s testimony in support of a position. Whether this is a fallacy depends on the degree of satisfaction of the criteria of credibility.  
   证言是支持某个立场的来源证词。是否这是一种谬误取决于可信度标准的满足程度。*
4. *Personal-attack argument is an argument against a statement that points out some defect in the maker of the statement. Whether this is a fallacy depends in part on whether the defect is relevant to the content of the statement.  
   人身攻击论证是针对陈述的一种论证，指出陈述的制作者存在某种缺陷。这是否是一种谬误在一定程度上取决于这个缺陷是否与陈述的内容相关。*

Check-Up 3C

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.   
如果为假，则将其更改为真。尝试以一种能显示您理解的方式进行。

**3:16 To appeal to an authority is to commit a fallacy.  
3:16 向权威求证是犯了一个谬误。**

**3:17 It is generally foolish to accept testimonials as a basis for action.  
3:17 通常接受证明作为行动基础是愚蠢的。**

**3:18 Personal attack arguments are almost always fallacious.  
3:18 个人攻击的论点几乎总是谬误的。**

**3:19 In judging an argument, it can be relevant to show that the person offering the argument would profit from your accepting the conclusion.  
在评判一个论点时，展示提出该论点的人从你接受结论中获利可能是相关的。**

Short Answer  
简答题

For each of the following items, apply one or more of these labels (remember that in applying the label you are not committed to calling the item a fallacy):  
对于以下每个项目，请应用一个或多个标签（记住，在应用标签时，您不必将该项目称为谬论）：

1. Transfer  
   转移
2. Appeal to authority  
   权威论证
3. Testimonial  
   推荐书评
4. Personal-attack argument  
   人身攻击论证
5. No reason for thinking that it is any of the above  
   没有理由认为它是以上任何一种。

3:20 A friend says, “The early-morning Amtrak train is the best way to get to Chicago, all things considered.”  
3:20 一位朋友说，考虑到一切，清晨的美铁火车是去芝加哥的最佳方式。

3:21 Another friend says, “My sister, who should know because she some­times rides that train, tells me that the early morning train is not the best way to get to Chicago.”

**3:22** The first friend says, “Don’t pay any attention to her—she is prejudiced.”

3:23 A football quarterback, who won the best-player-of-the-year award, advises us that Glittering Oats has more nutritive value than any other cereal and that it is responsible for his football prowess.  
3:21 另一个朋友说，我的姐姐，她有时乘坐那班火车，告诉我早上的火车不是去芝加哥的最佳方式。3:22 第一个朋友说，别理她——她有偏见。3:23 一位获得年度最佳球员奖的橄榄球四分卫建议我们，闪闪发光的燕麦比其他任何谷物都有更多的营养价值，并且它是他橄榄球技能的原因。

3:24 Sarah Steinfeld, a Grand Master chess player, advises us that Glittering Oats has more nutritive value than any other cereal and that it is responsible for her skill in chess.  
3:24 Sarah Steinfeld, 一个国际象棋大师，告诉我们，闪亮燕麦比其他任何谷物都有更多的营养价值，并且它是她在国际象棋中技艺出众的原因。

3:25 A juror says, “You can’t believe the defendant. He even looks like a liar.” 3:26 A famous movie director tells us that the president’s economic ideas are foolish.  
3:25 一个陪审员说，你不能相信被告。他看起来就像个骗子。3:26 一位著名电影导演告诉我们，总统的经济观念是愚蠢的。

**3:27 A defender of the president’s economic ideas tells us that a noted economist supports the president’s economic ideas.  
3:27 一位总统经济理念的捍卫者告诉我们，一位著名经济学家支持总统的经济理念。**

3:28 A teacher says, “The preferred spelling of the plural of bus is buses, according to Webster’s dictionary, so you should spell it that way.”  
3:28 一位老师说，根据韦氏词典，bus的复数最好拼写为buses，所以你应该以这种方式拼写。

3:29 A professional football player reports, “I drink Hugh’s Brew because it’s good for me and I like it. You’ll like it too.”  
3:29 一名职业足球运动员报告说，我喝休斯啤酒因为它对我有好处，而且我喜欢它。你也会喜欢它的。

3:30 A letter to an editor of a newspaper reads, “You are bound to have a biased view of the importance of protecting local business. After all, your employer is a member of the business-oriented country club. You should mention this when you advocate increased police protection downtown and your readers should be duly skeptical of what you say.”

3:31 The defense attorney says, “My client is innocent of the charge of murder because she was defending herself against attack.”

3:32 A friend advises, “When you limber up your muscles, you should

stretch them and hold them stretched without inducing a lot of pain. You should not make a series of painful stretches of short duration.  
3:30 一封给报纸编辑的信中写道，您对保护本地企业的重要性肯定有偏见。毕竟，您的雇主是一个以商业为导向的乡村俱乐部的成员。当您提倡增加市中心的警察保护时，您应该提到这一点，您的读者应该对您所说的话持怀疑态度。3:31 辩护律师说，我的客户对谋杀指控是无辜的，因为她是在自卫中进行辩护。3:32 一位朋友建议说，当您活动肌肉时，您应该拉伸它们并保持拉伸状态，而不会引起很多疼痛。您不应该进行一系列短时间的痛苦拉伸。

That’s what the coach says.”  
那是教练说的。

Medium Answer  
中等答案

­ment, “We have to be wary because it is to the prosecutor’s interest to win the case. In his presentation, therefore, he might well 3:33 In the jury room, one of the jurors said about the prosecutor’s argument, “We have to be wary because it is to the prosecutor’s interest to win the case. In his presentation, therefore, he might well have left out some important facts. Besides, he slurred his words and was practically shouting at us. I don’t trust people who do that.” What do you think of the juror’s reasons for being wary of the prosecutor’s argument? Why?  
3:33在陪审团室里，一名陪审员对检察官的辩论表示警惕，因为检察官有兴趣赢得这个案件。因此，在他的陈述中，他很可能遗漏了一些重要的事实。此外，他说话含糊不清，几乎对我们大声呼喊。我不相信那样做的人。你对陪审员对检察官辩论持警惕态度的理由有何看法？为什么？

3:34—3:37 For each of the following items, find an example in a newspaper or magazine. Referring to relevant criteria of credibility, defend your judgment in writing and attach a copy of the item. You might find that you can use an item more than once. You may do so.  
3:34—3:37 对于以下每个项目，请在报纸或杂志中找到一个例子。根据相关的可信度标准，以书面形式为您的判断辩护，并附上该项目的副本。您可能会发现可以多次使用一个项目。您可以这样做。

3:34 An appe.il to authority that you accept.  
3:34 一个你接受的权威上诉。

3:35 A testimonial that you accept.  
3:35 一个你接受的推荐。

3:36 A testimonial that you do not accept.  
3:36 一个你不接受的推荐。

3:37 A case that you would label as fallacious transfer.  
3:37 一个你会标记为谬误推理的案例。

Suggested Answers for Chapter 3  
第三章的建议答案

**Check-Up 3A**

3:1 T 3:2 F 3:3 T

**3:2 People other than experts can satisfy the background-experience-and- knowledge criterion if the statement is in the everyday realm and the speaker has sufficient everyday knowledge and experience.  
3:2 除了专家以外的人，如果陈述属于日常领域，并且说话者拥有足够的日常知识和经验，也可以满足背景经验和知识的标准。**

**3:4, 3:5, and 3:6 These are up to you. Review what you have said.  
3:4, 3:5, and 3:6 这些由你决定。回顾你所说的内容。**

**Check-Up 3B**

3:7 F 3:8 T 3:9 F 3:10 F 3:11 T 3:12 F

**3:7 If a procedure is an established one, the chances are that it is correct, but it might not be.  
3:7 如果一个程序是一个已经建立的程序，那么它很有可能是正确的，但也有可能不是。**

**3:9 For credibility purposes, vagueness has both advantages and disadvantages.  
为了可信度，模糊性既有优势也有劣势。**

**3:10 Even if a statement-maker knows that there is no way to check his or her statement, the statement might be credible, depending on the satisfaction of the other criteria.  
即使一个陈述者知道没有办法检查他或她的陈述，根据其他标准的满足程度，这个陈述可能是可信的。**­isfaction of the other criteria.

**3:12 If a person is careless in one kind of activity, this carelessness is suggestive of possible carelessness in similar kinds of activity.  
如果一个人在某种活动中不小心，这种不小心可能暗示着在类似的活动中也可能不小心。**­tive of possible carelessness in similar kinds of activity.

**3:13, 3:14, and 3:15 Again, these are up to you. Review what you have said. Make sure that your overall judgment is clearly stated.  
3:13，3:14和3:15。再次，这些由您决定。回顾您所说的内容。确保您的总体判断清晰明确。**

**Check-Up 3C**

**3:16 F 3:17** F **3:18** F **3:19** T

To appeal to an authority is to commit a fallacy if the authority is not qualified on the topic.  
向权威求证，如果该权威在该主题上没有资格，那么就是一种谬误。

**3:16**

**3:17**

**3:18 3:20 3:25 3:30**

It is foolish to accept testimonials as a basis for action if the source is not qualified.  
如果来源不合格，接受推荐信作为行动依据是愚蠢的。

Personal attack arguments are sometimes fallacious.  
个人攻击的论点有时是谬误的。

**C 3:21 B 3:22 D 3:23 A&C 3:24 A&C**

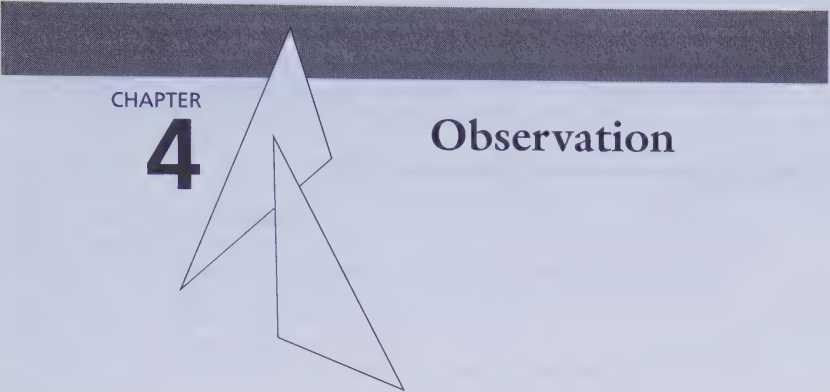
**D 3:26 A 3:27 B 3:28 B 3:29 A&C**

**D 3:31 E 3:32 B**

*Note:* As is, 3:31 is not a testimonial, but would be if the attorney said, “My client is innocent of murder because I know her well and know that she would never murder anyone.”

**3:33 Each reason is a case of personal attack. However, the juror’s first precaution is well taken. The prosecutor has a conflict of interest, so we could not depend on him to present both sides of the matter. (We could not depend on the defense attorney to present both sides, either.) The attack on the prosecutor’s argument that was based on the prosecutor’s speech habits was not legitimate. Those traits were not relevant to the strength of his argument.  
注意：3:31不是一个证言，但如果律师说，我的客户对谋杀案无罪，因为我很了解她，知道她绝对不会杀人，那么它就是一个证言。3:33每个理由都是一种人身攻击。然而，陪审员首先采取了很好的预防措施。检察官存在利益冲突，所以我们不能依赖他来提出双方观点。（我们也不能依赖辩护律师来提出双方观点。）基于检察官言辞习惯的对检察官论点的攻击是不合法的。这些特点与他的论点的强度无关。**­caution is well taken. The prosecutor has a conflict of interest, so we could not depend on him to present both sides of the matter. (We could not depend on the defense attorney to present both sides, either.) The attack on the prosecutor’s argument that was based on the prosecutor’s speech habits was not legitimate. Those traits were not relevant to the strength of his argument.

**3:34-3:37 Again, these are up to you. Be sure to review what you have said.  
3:34-3:37 再次，这取决于您。请确保回顾您所说的内容。**



Have you ever been sure that you saw or heard something, and then learned that someone else saw or heard something different? This happens to me. For example, when I am playing tennis with one particular person, I sometimes see the ball land on the line and he says it landed outside of the line.  
你是否曾经确信自己看到或听到了某件事，然后得知其他人看到或听到了不同的事情？这种情况经常发生在我身上。例如，当我和某个特定的人打网球时，有时我看到球落在线上，而他却说球落在线外。

­rectness, they can help. Like the criteria for credibility, these are There are criteria that are useful in such situations. You can apply them to your own observations and to the reports of others. Although they do not guarantee correctness, they can help. Like the criteria for credibility, these are used in the R element of the FRISCO approach to critical thinking: judging the acceptability of the reasons (including evidence). Observation statements usually serve as reasons in an argument. The pathologist’s observations, for example, served as reasons for her conclusion that the knife stroke was of only moderate force.  
在这种情况下有一些有用的标准。你可以将它们应用到你自己的观察和他人的报告中。虽然它们不能保证正确性，但它们可以提供帮助。就像可信度的标准一样，这些标准被用于FRISCO批判性思维方法的R要素：判断理由（包括证据）的可接受性。观察陈述通常作为论证中的理由。例如，病理学家的观察作为她得出刀伤仅有中等力度的结论的理由。­ment of the FRISCO approach to critical thinking: judging the acceptability of the reasons (including evidence). Observation statements usually serve as reasons ­clusion that the knife stroke was of only moderate force.

The discussion of observation in this chapter is applicable to your papers in which you defend a position (and to narrative papers in which you simply try to report an occurrence). Some of your reasons in position papers will be observations made by you or by others. These reasons will be justified roughly to the extent that they satisfy the criteria of observation statements presented here. In particular, (to give a summary in advance) they will be justified as observations roughly to the extent that they come from a credible source, are really observations (as opposed to being conclusions), are based on the use of appropriate technology, were made by a competent, careful, unbiased observer under good conditions, are directly reported by the observer, and are based on or corroborated by records of the observation.  
本章中对观察的讨论适用于您在论述立场的论文中（以及在叙述性论文中，您仅仅试图报告一个事件）。在立场论文中，您的一些理由将是您或他人所做出的观察。这些理由将在很大程度上通过满足此处提出的观察陈述的标准来证明其合理性。特别是（提前概括一下），它们将通过来自可信源的观察、真实观察（而非结论）、基于适当技术的观察、由胜任、细心、公正的观察者在良好条件下进行的观察、直接由观察者报告以及基于或与观察记录相印证来证明其合理性。­petent, careful, unbiased observer under good conditions, are directly reported by the observer, and are based on or corroborated by records of the observation.

Credibility Criteria  
可信度标准

­Whether the report of the observation is made by you or by someone else, the eight criteria for credibility apply. You are already familiar with these criteria (and should realize that both my opponent and I in the tennis match have a conflict of interest). But these eight criteria are not enough. There is also a set of criteria that apply espe cially to observation, whether you or someone else is doing it. Again, the criteria are only approximate guides. They cannot be applied automatically. One must use good judgment and pay close attention to the situation (the 5 in FRISCO).  
无论观察报告是由您还是其他人制作的，都适用八个可信度标准。您已经熟悉这些标准（并且应该意识到我和对手在网球比赛中存在利益冲突）。但这八个标准还不足够。还有一套特别适用于观察的标准，无论是您还是其他人在进行观察。同样，这些标准只是大致指南，不能自动应用。必须运用良好的判断力，并密切关注情况（FRISCO中的5个）。

Conclusions Versus Observations  
结论与观察

­An acquaintance reported that he saw a stranger stealing a friend’s bicycle. Actually, all that the acquaintance observed was that a person he did not know took the bicycle out of the rack and rode off with it. Because the friend had given the person permission, it was not a case of stealing. My acquaintance concluded that the bike had been stolen, but only observed its removal. The observation that the bike was removed was more dependable than the conclusion that the bike had been stolen. In general, observations are more dependable than the conclusions based on them.  
一位熟人报告说他看到一个陌生人偷了朋友的自行车。实际上，熟人所观察到的只是一个他不认识的人从架子上拿走了自行车并骑走了。因为朋友已经允许了这个人，所以这不是一起偷窃案件。我的熟人得出结论说自行车被偷了，但只是观察到了它被拿走了。观察到自行车被拿走的事实比得出自行车被偷的结论更可靠。总的来说，观察比基于观察的结论更可靠。­mission, it was not a case of stealing. My acquaintance concluded that the bike had

In the courtroom, witnesses (except experts) are not allowed to offer their con­clusions. They are allowed to say only what they have observed. For example, in Arlene’s trial, a police officer reported that he saw a depression in the snow by the passenger side of Al’s automobile. He was asked whether the depression was caused by someone falling down. The defense attorney objected on the ground that the question called for a conclusion. The judge sustained the objection and the question was withdrawn. The police officer observed the depression in the snow, but he was not allowed to report his conclusion about its cause. The policy of prohibiting con­clusions is supposed to protect the jury from undue influence and to minimize the errors in the testimony. (The jurors are expected to infer conclusions, however.)

Although the preference of observations over conclusions is usually a good idea, in this particular situation, I thought it was unfortunate that we could not benefit from the police officer’s conclusion. Without a photograph, his conclusion about the depression was likely to be helpful in finding out about its shape and its cause. Although an ingenious attorney could have drawn more observational information out of the police officer, the officer’s conclusion would have been helpful too. Other people’s interpretations are often helpful in developing our own, provided that we are careful. How would you have felt in this case?  
在法庭上，证人（专家除外）不被允许提出自己的结论。他们只能说出他们所观察到的事实。例如，在阿琳妮的审判中，一名警官报告说他看到了奥尔的汽车乘客座位旁边的雪地上有一个凹陷。有人问他这个凹陷是否是由有人摔倒引起的。辩护律师以问题要求得出结论为由提出了反对意见。法官支持了这个反对意见，问题被撤回了。警官观察到了雪地上的凹陷，但他不被允许报告关于其原因的结论。禁止得出结论的政策旨在保护陪审团免受不当影响，并减少证词中的错误。（然而，陪审团预期能够推断出结论。）虽然通常情况下，优先考虑观察而非结论是一个好主意，但在这种特殊情况下，我认为不能从警官的结论中获益是不幸的。没有照片，他关于凹陷的结论可能对了解其形状和原因有所帮助。虽然一个聪明的律师可能会从警官那里获得更多的观察信息，但警官的结论也将是有帮助的。他人的解释通常有助于我们自己的发展，前提是我们要小心。在这种情况下，你会有什么感受？

This prohibition of conclusions by witnesses in the courtroom does not extend to experts drawing conclusions in their own specialties. The pathologist was permitted to state her conclusion about the strength of the knife stroke. The assumption is that experts are better able to draw conclusions in their own fields than are jurors.  
证人在法庭上被禁止得出结论，但专家在自己的专业领域中得出结论是被允许的。法医被允许陈述她对刀伤力度的结论。假设是专家在自己的领域比陪审团更能得出结论。­ted to state her conclusion about the strength of the knife stroke. The assumption is that experts are better able to draw conclusions in their own fields than are jurors.

Why Distinguish Observations from Conclusions?  
为什么要区分观察和结论？

­pert) witnesses, there are good reasons for the rule. Furthermore, it is well for us all Despite my discomfort with the rigid courtroom prohibition of inferring by (nonexpert) witnesses, there are good reasons for the rule. Furthermore, it is well for us all to be sensitive to the problem out of court. When someone witnesses something, we should be alert for any conclusions in the report of the event, as in the report of the alleged bicycle theft.  
尽管我对法庭严格禁止（非专家）证人推断感到不舒服，但这个规则有其合理之处。此外，我们都应该对法庭之外的问题保持敏感。当有人目击某事时，我们应该对事件的报告中的任何结论保持警觉，就像对所谓的自行车盗窃案的报告一样。

A witness reports: “Right after the accident, the driver emerged from the car in a drunken stupor.” But possibly the driver was dizzy from the shock of the accident. The proposition that the driver was drunk is a conclusion, and is less dependable than

the observation on which it was based. This does not mean that we should totally ignore the witness’ conclusion. The witness did see the circumstances, and might have taken much into account in drawing the conclusion. But we should be careful not to accept the witness’ conclusion without asking the witness further questions about the situation, which is what the courts call cross-examination. I hesitate to use the term in everyday circumstances because it suggests a hostile confrontation, but a mild version of cross-examination is almost always in order when we face a witness’ conclusion.  
一个证人报告说：事故发生后，司机醉醺醺地从车里出来。但是司机可能是因为事故的冲击而头晕。司机醉酒的说法是一个结论，比起它所基于的观察来说，它的可靠性较低。这并不意味着我们应该完全忽视证人的结论。证人确实看到了情况，并且在得出结论时可能考虑了很多因素。但我们应该小心，不要在没有进一步询问证人有关情况的情况下接受证人的结论，这就是法庭所称的交叉询问。我不愿意在日常情况下使用这个术语，因为它暗示了一种敌对的对抗，但当我们面对证人的结论时，几乎总是需要进行一种温和的交叉询问。

Jim reported that he saw Martine out with Karl in the Blue Cloud. His seeing Martine and Karl at The Blue Cloud was an observation. But his report that they were out together, given that he glimpsed them only briefly, was a conclusion in that situation. They might have accidentally met at The Blue Cloud, and not have been “out together” at all. In this case, if it matters to us whether Martine was out with Karl, it can be quite important to distinguish the observation from the conclusion. We should generally be more ready to accept the observation than the conclusion based on it. Jim might be a very careful concluder, and might well be right, but many people are not careful concluders and everyone makes mistakes sometimes in drawing conclusions from accurate observations. So there is an important distinction here. Do not claim to have observed what actually is a conclusion.  
吉姆报告说他在蓝云酒吧看到马丁和卡尔。他在蓝云酒吧看到马丁和卡尔只是一个观察结果。但是他报告他们一起外出的结论，考虑到他只是瞥见了他们一眼，这在那种情况下是一个结论。他们可能在蓝云酒吧偶然相遇，并没有一起外出。在这种情况下，如果我们关心马丁是否和卡尔一起外出，区分观察结果和结论就非常重要。我们通常更愿意接受观察结果而不是基于观察结果的结论。吉姆可能是一个非常谨慎的结论者，也可能是正确的，但很多人不是谨慎的结论者，每个人有时都会在从准确的观察中得出结论时犯错误。所以这里有一个重要的区别。不要声称观察到的实际上是一个结论。­ing conclusions from accurate observations. So there is an important

This is an area to exhibit the critical thinking dispositions “try to be well- informed” and “withhold judgment when the evidence and reasons are insufficient.” In other words, be careful, though not overly skeptical.  
这是一个展示批判性思维倾向的领域，试图在证据和理由不足时保持充分了解并保留判断。换句话说，要小心谨慎，但不要过于怀疑。

+ Making the Distinction Between Observations and Conclusions  
区分观察和结论

Beware. In discussions of observations and conclusions, it is easy to fall into the trap of thinking that there really are no observations, only conclusions. Some challenger might claim, for example, that Jim’s apparent observation statement, “I saw Karl at the Blue Cloud last night,” was really only a conclusion. The challenger might hold that Jim saw someone who looked, talked, and danced like Karl, but who might not really have been Karl. So, the challenger might claim that the statement “I saw Karl at the Blue Cloud last night” was inferred from the fact that the person looked, talked, and danced like Karl, and so could only be a conclusion. The challenger could go on: “Jim was only inferring that it was The Blue Cloud, because all he really could observe was that it had the appearance and atmosphere of the Blue Cloud and a sign outside saying ‘Blue Cloud.’” Once a challenger gets going this way, there is no place to stop, if the challenger wants to carry on and neglects the practical features of the situation.  
小心。在观察和结论的讨论中，很容易陷入这样的误区，即真正没有观察，只有结论。例如，某个挑战者可能声称，吉姆表面上的观察陈述“我昨晚在蓝云见到卡尔”实际上只是一个结论。挑战者可能认为吉姆看到的是一个看起来、说起话来和跳舞的人很像卡尔，但可能并不是真正的卡尔。因此，挑战者可能声称，“我昨晚在蓝云见到卡尔”这个陈述是从这个人看起来、说起话来和跳舞像卡尔这个事实推断出来的，因此只能是一个结论。挑战者还可以继续说：吉姆只是推断那是蓝云，因为他真正能观察到的只是它具有蓝云的外观和氛围，以及外面写着“蓝云”的标志。一旦一个挑战者以这种方式开始，如果挑战者想要继续并忽视情境的实际特征，就没有停下来的地方。­ing ‘Blue Cloud.’” Once a challenger gets going this way, there is no place to stop, if the challenger wants to carry on and neglects the practical features of the situation.

There is at least a two-part response possible, the first part of which depends heavily on the situation (the S in FRISCO): Jim knows Karl well and could not have failed to recognize him in that situation, and to deny the existence of observations is to destroy our ability to make and apply in a readily understandable way the point that observations are generally more reliable than the conclusions that are based on them. This is an important point to be able to make and apply, as is shown by the great emphasis it receives in the courts and by numerous examples from our own personal experiences.  
至少有两种可能的回应，第一部分严重依赖于情况（FRISCO中的S）：吉姆很了解卡尔，不可能在那种情况下没有认出他，否认观察的存在将破坏我们能够以一种容易理解的方式进行观察并应用的能力，而观察通常比基于它们的结论更可靠。这是一个重要的观点，我们需要能够进行观察和应用，这一点在法庭上得到了极大的强调，并通过我们自己的个人经验中的许多例子得到了证明。­sonal experiences.

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However, the way the distinction between observations and conclusions is actually drawn in a particular case depends on the situation. Some statements are obviously conclusions in any situation. For example, “The best things in life are free,” “The same side of the moon always faces the earth,” and “Arlene is not guilty of murder” would be conclusions under any circumstances that I can imagine. But some statements that in a given situation are observations could, in another situation, be conclusions. Consider Jim’s statement, “I saw Karl at The Blue Cloud last night.” This was an observation statement when I heard it. But imagine a different situation. Suppose that Karl had an identical twin brother who had just arrived in town, and that Jim knew this. Suppose that Jim knew Karl very well, being familiar with the ring he wears, his speech habits, and his clothing. Suppose further that Jim, after seeing this person in a dimly lit Blue Cloud, approached him, noted his ring and clothing, and engaged him in conversation. Suppose that Jim then said to himself, “This must be Karl, not Karl’s brother.” Then his report to me that he saw Karl was not an observation statement, but was a conclusion.  
然而，在特定情况下，观察和结论之间的区别实际上取决于情况。有些陈述在任何情况下都显然是结论。例如，生活中最美好的事情是免费的，月球的同一面始终面向地球，阿琳不是谋杀的罪犯，这些陈述在我能想象的任何情况下都是结论。但在某种情况下，一些在给定情况下是观察的陈述在另一种情况下可能是结论。考虑吉姆的陈述，我昨晚在蓝云酒吧见到了卡尔。当我听到这句话时，它是一个观察陈述。但想象一个不同的情况。假设卡尔有一个刚到镇上的同卵双胞胎兄弟，吉姆知道这一点。假设吉姆非常了解卡尔，熟悉他戴的戒指、他的说话习惯和他的服装。进一步假设吉姆在昏暗的蓝云酒吧看到这个人后，走近他，注意到他的戒指和服装，并与他交谈。假设吉姆随后对自己说，这一定是卡尔，不是卡尔的兄弟。那么他向我报告他看到卡尔的陈述就不是一个观察陈述，而是一个结论。­­ously conclusions in any situation. For example, “The best things in life are free,” “The same side of the moon always faces the earth,” and “Arlene is not guilty of mur­­vation statement, but was a conclusion.

­ing that the speedometer was recently checked, that the tires are new, and that he is compensating for being off to the side, then a repeat of his statement would be a con­clusion because it is now being supported. So the observation-conclusion distinction depends on what is known and acceptable without defense in the situation (the S in Sometimes just a challenge can make a conclusion out of what seemed to be an observation statement. Suppose that my companion, while looking routinely at the speedometer in a car, says, “We are going 55 miles per hour.” This could justifiably pass as an observation. Suppose that I challenge the statement. If he defends it by saying that the speedometer was recently checked, that the tires are new, and that he is compensating for being off to the side, then a repeat of his statement would be a conclusion because it is now being supported. So the observation-conclusion distinction depends on what is known and acceptable without defense in the situation (the S in FRISCO). There is not a sharp line separating observations from conclusions.  
有时候，仅仅一个挑战就可以从一个观察陈述中得出结论。假设我的伙伴在车上例行地看着速度表，说：“我们以每小时55英里的速度行驶。” 这可以被认为是一个观察。假设我对这个陈述提出质疑。如果他辩护说速度表最近被检查过，轮胎是新的，并且他在补偿车辆偏离一侧的情况下，那么他再次说出这个陈述就是一个结论，因为现在有了支持。因此，观察和结论之间的区别取决于在情况中已知和可接受的东西（FRISCO中的S）。观察和结论之间没有明确的界线。

Summary  
摘要

On the face of it, there is an obvious distinction between observation statements and conclusions. Observation statements report what is observed. Conclusions state what is inferred from what is observed and other things. Generally, there is more room for error in inferring conclusions than in securing the observations on which thev are based. That is why it is often good practice, when someone offers a conclusion, to ask for the observations and other evidence on which it is based. That is, ask, “Just what exactly did you see?” or “What exactly did you hear?” Be careful, though not overly skeptical.  
表面上，观察陈述和结论之间存在明显的区别。观察陈述报告所观察到的事实。结论陈述了从所观察到的事实和其他事物中推断出的内容。通常，在推断结论方面比获得观察结果方面更容易出错。这就是为什么当有人提出结论时，经常会要求提供所基于的观察和其他证据的好做法。也就是说，要问：你到底看到了什么？或者你到底听到了什么？不过要小心，不要过度怀疑。

+Under special situations, a statement that looks like an observation report might actually be a low-level conclusion. Then it must be judged as a conclusion. The reasons and inferences supporting it must be judged for their adequacy, or its actual observational source must be judged for credibility and satisfaction of reasonable criteria for an observation (some criteria will be provided later in this chapter). The distinction between observations and conclusions is not precise, and often depends on the situation (the S in FRISCO).  
在特殊情况下，一个看起来像观察报告的陈述实际上可能是一个低级结论。那么它必须被判断为结论。支持它的原因和推理必须被判断为足够，或者必须对其实际的观察来源进行可信度和满足合理观察标准的判断（一些标准将在本章后面提供）。观察和结论之间的区别并不精确，并且往往取决于情况（FRISCO中的S）。­teria for an observation (some criteria will be provided later in this chapter). The dis­tinction between observations and conclusions is not precise, and often depends on

Check-Up 4A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**4:1 Observations are generally more reliable than conclusions inferred from them.  
观察结果通常比从中推断出的结论更可靠。**

**4:2 In decisions about whether to believe an observation report by someone else, the eight credibility criteria apply, as well as special criteria for observation.  
4:2在决定是否相信他人的观察报告时，适用八个可信度标准，以及观察的特殊标准。**­one else, the eight credibility criteria apply, as well as special criteria for observation.

Short Answer  
简答题

Classify each of the italicized statements as an observation report (O) or a conclusion (C). If in doubt, imagine and describe in writing a situation in which your doubt would be resolved, and dien make your judgment.  
将每个斜体陈述分类为观察报告（O）或结论（C）。如果有疑问，请想象并书面描述一个能解决你疑问的情况，然后作出判断。

**4:3 The barometer now reads 30.10 inches and it is 11 A.M.  
4:3 现在气压计读数为30.10英寸，现在是上午11点。**

**4:4 The barometer read 29.92 inches at 7 a.m.  
4:4 早上7点，气压计读数为29.92英寸。**

**4:5 So the weather will clear up.  
4:5 天气会放晴。**

**4:6 The ambulance driver said, “I arrived at 11:10 p.m.”  
4:6 救护车司机说，我在晚上11:10到达。**

**4:7 The ambulance driver said, “He was dead when I arrived.”  
4:7 救护车司机说，我到达时他已经死了。**

**4:8 Γhe ambulance driver said, “He could not have been dead very long.”  
4:8 救护车司机说，他不可能已经死很久了。**

**4:9 The director said, “On page 65 of my script, these words appear: cA rose by any other name would smell as sweet.’”  
4:9 导演说，在我的剧本第65页上，出现了这些词：cA rose by any other name would smell as sweet.**

**4:10 The director said, “That means that you don’t change something just by changing its name.”  
4:10 导演说，这意味着仅仅通过改变名字并不能改变某物。**

**4:11 My companion, while looking at the speedometer, said, “This vehicle is traveling at 60 miles per hour.”  
4:11 我的同伴看着速度表说，这辆车以每小时60英里的速度行驶。**

**4:12 My companion, while still looking at the speedometer, said, “1 observe that you are exceeding the speed limit.”  
4:12 我的同伴，一边看着速度表，说道，我注意到你超过了限速。**

The Process of Observing  
观察的过程

So far, we have considered the distinction between conclusions and observations and the importance of minimal concluding in an observation report. Let us turn now to the actual process of observing, and some criteria for making judgments about observations. As with the credibility criteria you considered in the previous chapter, these criteria do not apply themselves automatically. Good judgment and sensitivity are required in applying them.  
到目前为止，我们已经考虑了结论和观察之间的区别，以及在观察报告中进行最小结论的重要性。现在让我们转向实际的观察过程，并对观察进行判断的一些标准。与您在上一章中考虑的可信度标准一样，这些标准不会自动应用。在应用它们时需要良好的判断力和敏感性。­vations. As with the credibility criteria you considered in the previous chapter, these criteria do not apply themselves automatically. Good judgment and sensitivity are required in applying them.

Appropriate Technology  
适当技术

Some observations, like the observation of Saturn’s rings from a space ship, require elaborate technology. Others, like Jim’s seeing Martine and Karl at the Blue Cloud, require only Jim’s eyes (which, though not high technology, were the appropriate technology for that situation). Space ship or television technology was not only unnecessary for the observation of Martine and Karl, but it would have interfered with the actions of the subject of the observation. Martine and Karl might well have gone somewhere else if they knew there was a television camera at the Blue Cloud.  
一些观察，比如从太空船上观察土星的环，需要复杂的技术。而另一些观察，比如吉姆在蓝云酒吧看到马丁和卡尔，只需要吉姆的眼睛（虽然不是高科技，但对于那种情况来说是合适的技术）。太空船或电视技术不仅对于观察马丁和卡尔是不必要的，而且会干扰观察对象的行动。如果他们知道蓝云酒吧有电视摄像机，马丁和卡尔很可能会去别的地方。

The general rule here is vague: The technology of the observation should be appropriate for the subject being observed and for the information required. In order to apply this criterion, you must know something about the subject and the available technology. Otherwise, you must place your faith in someone else’s judgment about these. Then you must depend on your application to the other person of the criteria of credibility. This is because in effect you would be taking someone’s word that the technology was appropriate.  
这里的一般规则很模糊：观察的技术应该适用于被观察的对象和所需的信息。为了应用这个标准，你必须了解一些关于对象和可用技术的知识。否则，你必须相信别人对这些问题的判断。然后，你必须依赖于你对他人可信度标准的应用。这是因为实际上你将相信某人的话，即技术是适当的。

Observation Conditions  
观察条件

­ducive to observation.If the Blue Cloud had been very smoky, it would have been much more difficult for Jim to identify Martine. Identification of the North Star can be made difficult or impossible by clouds, haze, moonlight, and sunlight. The conditions must be conducive to observation.  
如果蓝云很烟雾弥漫，吉姆要辨认马丁会更加困难。北极星的辨认可能会因为云雾、霾、月光和阳光而变得困难或不可能。观察的条件必须有利。

Observer's Ability

­ing up the line across the top of the mercury’s surface with some point on the scale, estimating the correct reading on the basis of the position of a point between the lines on a scale, etc.). It involves knowing to check and recheck the observed phenome­non and the condition of the equipment and surroundings by answering such ques­tions as these: Is the barometer straight up and down? Am I avoiding parallax distor­tion? (Parallax distortion comes from the observer’s eyes being off to the side, or too high or low, so that the reading on the scale is different from the one that would be obtained from a position directly in front. I mention parallax distortion because it can interfere in so many different situations that one should generally be aware of it.) Am I reading the scale right (misreading a scale being another widespread enemy of accu­racy)? Do I get the same reading when I observe again? Is there enough light for me to be sure?Observer’s ability is generally crucial to the making of a reliable observation. This holds for such diverse activities as recognizing people, tracking animals, reading barometers, and determining the composition of the sun by using a spectroscope. Observer ability involves background knowledge (for example, knowing what Karl looks like, knowing what a raccoon track looks like, knowing that elevation above sea level affects barometers, knowing the spectroscopic display of sodium, etc.). It also involves doing certain things well (for example, focusing and aiming a telescope, lining up the line across the top of the mercury’s surface with some point on the scale, estimating the correct reading on the basis of the position of a point between the lines on a scale, etc.). It involves knowing to check and recheck the observed phenomenon and the condition of the equipment and surroundings by answering such questions as these: Is the barometer straight up and down? Am I avoiding parallax distortion? (Parallax distortion comes from the observer’s eyes being off to the side, or too high or low, so that the reading on the scale is different from the one that would be obtained from a position directly in front. I mention parallax distortion because it can interfere in so many different situations that one should generally be aware of it.) Am I reading the scale right (misreading a scale being another widespread enemy of accuracy)? Do I get the same reading when I observe again? Is there enough light for me to be sure?  
观察者的能力通常对于可靠观察的进行至关重要。这适用于识别人物、追踪动物、读取气压计以及通过使用光谱仪确定太阳的组成等各种活动。观察者的能力涉及背景知识（例如，知道卡尔长什么样子，知道浣熊的足迹长什么样子，知道海拔对气压计的影响，知道钠的光谱显示等）。它还涉及到做某些事情的能力（例如，对着望远镜进行对焦和瞄准，将水银表面上的线与刻度上的某个点对齐，根据刻度上两条线之间的点的位置估计正确的读数等）。它还涉及到通过回答以下问题来检查和重新检查观察到的现象以及设备和周围环境的状况：气压计是直立的吗？我避免了视差畸变吗？（视差畸变是由于观察者的眼睛偏离一侧，或者过高或过低，导致刻度上的读数与从正面位置获得的读数不同。我提到视差畸变是因为它可能干扰很多不同的情况，所以人们通常应该意识到它。）我读对了刻度（错误读取刻度是另一个广泛存在的准确性敌人）？当我再次观察时，我得到相同的读数吗？有足够的光线让我确定吗？

Lastly, observer ability includes having the senses needed by the observer (that is, sight, hearing, etc.) in good enough condition. To read a barometer, for example, one’s eyes must be functioning well (though, perhaps with help, such as eveglasses).  
最后，观察者能力包括拥有观察者所需的感官（即视觉、听觉等）处于良好状态。例如，要读取气压计，眼睛必须功能正常（尽管可能需要一些帮助，比如眼镜）。

­tion, the most that can be required for all cases is this: The observer’s ability must be adequate for the observation. However, things such as parallax, misreading, failure to check and recheck, and defective senses are often important enough to rate special mention as dangers.Because the important features of observer ability vary from situation to situation, the most that can be required for all cases is this: The observer’s ability must be adequate for the observation. However, things such as parallax, misreading, failure to check and recheck, and defective senses are often important enough to rate special mention as dangers.  
由于观察者能力的重要特征因情况而异，对于所有情况而言，所能要求的最多就是观察者的能力必须足够以进行观察。然而，像视差、误读、未经核对和反复核对以及感官缺陷等问题常常足够重要，值得特别提及作为危险因素。

Observer Attention, Lack of Bias, Care  
观察者注意，缺乏偏见，关心

Inattentive, biased, and careless observers are a significant source of error, as we all well know from our own errors when inattentive, biased, or careless. Fatigue, drugs, alcohol, and distractions often cause inattention. However, when under such influences, observers often do not realize their reduced dependability, even when we ourselves are the observers.  
不专注、有偏见和粗心的观察者是错误的重要来源，我们都很清楚，因为我们自己在不专注、有偏见或粗心时也会犯错误。疲劳、药物、酒精和干扰经常导致不专注。然而，在受到这些影响时，观察者通常不会意识到他们的可靠性降低，即使我们自己是观察者。­ences, observers often do not realize their reduced dependability, even when we our­selves

Often observers tend to “see” what they want to see or expect to see, even if it does not occur. You need only to survey the news media today to find examples. Protections against such bias should be used, such as obtaining observers who have no conflict of interest and who are open to seeing what actually occurs rather than what they are sure is going to occur. In experiments where human beings are identifying different products, it is best that the judgers do not know what they are identifying (as in Coke vs. Pepsi identification tests, which require such a “blind” procedure).  
"观察者经常倾向于看到他们想看到或期望看到的东西，即使它并没有发生。你只需要浏览今天的新闻媒体就能找到例子。应该采取防止这种偏见的保护措施，比如选择没有利益冲突并愿意看到实际发生情况的观察者，而不是他们确信会发生的情况。在人们辨认不同产品的实验中，最好是评判者不知道他们正在辨认的是什么（比如可口可乐和百事可乐的辨认测试，需要进行这样的盲测程序）。”

In some situations, even double-blind procedures are appropriate. For example, in the testing of medicines, it is often best for the person dispensing the medicines (as well as the patients) not to know whether the material they are dispensing is the thing being tested or a placebo. This is because the dispensers of the medicine might communicate the nature of the dose to the patient, often inadvertently. The term doubleblind is used to indicate that neither the subjects nor the persons dealing with the subjects know what is being dispensed.  
在某些情况下，甚至双盲程序也是合适的。例如，在药物测试中，最好的情况通常是发药人员（以及患者）不知道他们正在发放的物质是被测试的物质还是安慰剂。这是因为发药人员可能会无意中向患者传达剂量的性质。双盲一词用于指示受试者和处理受试者的人员都不知道正在发放的是什么。­*­blind*

Summary  
摘要

The process of observation should use appropriate technology, be conducted under good conditions, and be done by an observer who is skilled enough for the type of observation being made and who is attentive, unbiased, and careful. If the actual observation is not done well, any inferences we draw from the observations are suspect.  
观察的过程应该使用适当的技术，在良好的条件下进行，并由熟练的观察者进行，观察者应该专注、公正和细心。如果实际观察不好，我们从观察中得出的任何推论都是可疑的。­

Observation Reports  
观察报告

In general, the closer the observation report to the observation, the better. This closeness is not only closeness in time but also closeness of the reporter to the observation. Rejection of hearsay evidence and emphasis on records are attempts to maintain this closeness.  
一般来说，观察报告与观察之间越接近越好。这种接近不仅是时间上的接近，还包括报告人与观察之间的接近。拒绝传闻证据并强调记录是为了保持这种接近。­­

Hearsay  
传闻

The prohibition of hearsay is another fairly rigid rule in the courts. Roughly speaking, hearsay is testimony that reports what someone else said with the intention of persuading the listener of the truth of what was said. Rumors are standard examples of hearsay. Babette reported to Sarah, who has an interest in Jon, “Manuel told me that he saw Jon out with Martine at the Blue Cloud.” That is hearsay, and Sarah should be careful in accepting such a report.  
传闻的禁止是法庭上另一个相当严格的规定。粗略地说，传闻是指报告他人所说的话，以说服听者所说的内容的真实性。谣言是传闻的典型例子。巴贝特向对乔恩感兴趣的莎拉报告说，曼努埃尔告诉我他在蓝云见到乔恩和马丁。这是传闻，莎拉在接受这样的报告时应该小心。­

When people report what other people say, they often do not get the words exactly the same. Manuel actually said that he saw Jon and Martine at the Blue Cloud. But Babette did not quote him exactly and produced a statement (“out with”) different in meaning from Manuel’s, perhaps getting Jon in trouble with Sarah.  
当人们报告其他人说的话时，他们通常不能完全准确地表达出来。曼努埃尔实际上说他在蓝云酒店见到了乔恩和马丁。但巴贝特没有完全引用他的话，并提出了一份与曼努埃尔的意思不同的声明，可能会让乔恩陷入与莎拉的麻烦中。­ferent in meaning from Manuel’s, perhaps getting Jon in trouble with Sarah.

Not every report of what someone else has said is hearsay. If a person yelled “Fire!” in a theater, and someone reported that fact in a trial of the person for neg ligent behavior (because there was no fire), the testimony would not be hearsay. In order to be hearsay, there must also be the intention that someone will take the testimony as support for the original person’s assertion (in this case, that would be the assertion that there was a fire). But the point of the testimony was not to show that there was a fire, but rather to show that the person yelled “Fire” and might therefore have been responsible for the ensuing riot.  
不是每一份关于他人所说的报告都是传闻。如果一个人在剧院里大喊“火！”并且有人在对该人进行玩忽职守的审判中报告了这个事实（因为没有火灾），这份证词不算是传闻。要成为传闻，还必须有意愿让他人将证词作为原始人的主张的支持（在这种情况下，主张是有火灾发生）。但证词的目的不是为了证明有火灾发生，而是为了证明这个人大喊“火”，因此可能对随后的骚乱负有责任。­­timony as support for the original person’s assertion (in this case, that would be the assertion that there was a fire). But the point of the testimony was not to show that there was a fire, but rather to show that the person yelled “Fire” and might therefore have been responsible for the ensuing riot.

­tioned in front of the house whether another police officer said he saw footprints in the back of the yard. The prosecutor then asked for more details about what the other police officer said about the footprints. The defense attorney objected. Under­standably, the judge sustained the objection, so the question was withdrawn. Its answer would have been hearsay, as was the answer to the previous question, which was stricken from the record.In Arlene’s trial, the prosecuting attorney asked a police officer who was stationed in front of the house whether another police officer said he saw footprints in the back of the yard. The prosecutor then asked for more details about what the other police officer said about the footprints. The defense attorney objected. Understandably, the judge sustained the objection, so the question was withdrawn. Its answer would have been hearsay, as was the answer to the previous question, which was stricken from the record.  
在阿琳的审判中，控方律师询问一名驻扎在房子前面的警官，是否有另一名警官说他在院子后面看到了脚印。然后，检察官要求进一步了解另一名警官对脚印的说法的细节。辩方律师提出了异议。可以理解的是，法官支持了这个异议，所以这个问题被撤回了。它的回答将会是传闻，就像之前的问题的回答一样，已经从记录中删除了。

One reason for the courtroom prohibition of hearsay is that people are often wrong about what other people say they saw. They are wrong about this more often than the original observer is wrong. Another reason is that a witness giving hearsay cannot be confronted, cross-examined, or questioned for more details about the event. For example, the police officer stationed in the front of the house would have been unable to give more details than he himself was given about the footprints in the snow around Al’s car. He could not be cross-examined about those footprints.  
法庭禁止传闻的一个原因是人们对其他人所说的他们看到的事情经常是错误的。他们对此的错误比原始观察者的错误更频繁。另一个原因是作证的人不能被对抗、交叉审问或就事件的更多细节进行询问。例如，驻扎在房子前面的警官无法提供比他自己所知道的有关阿尔斯汽车周围雪地上的脚印更多的细节。他不能就那些脚印进行交叉审问。

­tance of the possibility of cross-examination this way:Iohn H. Wigmore, a standard authority on legal evidence, defends the importance of the possibility of cross-examination this way:  
约翰·H·威格莫尔，法律证据的标准权威，以以下方式捍卫了交叉审问的重要性：

Why this insistence on the opportunity to cross-examine? Because the experience of the last three centuries of judicial trials has demonstrated convincingly that in disputed issues one cannot depend on the mere assertion of anybody, however plausible, without scrutiny into its basis. All the weaknesses that may affect a witness’ trustworthiness—observation, memory, bias, interest, and the like— may otherwise lurk unrevealed; modifying circumstances omitted in his tale may give his facts an entirely different effect, if disclosed; and cross-examination is the best way to get at these.[[4]](#footnote-4) (Note Wigmore’s emphasis on the importance of the situation—the S in *FRISCO.)*

A good example of the utility of confrontation and cross-examination arose in Arlene’s trial. She and Al were the only ones in the dining room at the time of his stabbing. So she was the only available source of a first-hand account. Although the defense attorney had the right not to have her called to the stand, he chose to call her. It looks suspicious if the defendant refuses to testify and be cross-examined.  
为什么如此坚持进行交叉审问？因为过去三个世纪的司法审判经验已经令人信服地证明，在争议问题上，不能仅仅依赖于任何人的单纯断言，无论其多么有道理，都需要对其基础进行审查。可能影响证人可信度的所有弱点——观察、记忆、偏见、利益等等——可能会隐藏不露；如果披露，被忽略在他的故事中的修饰情况可能会给他的事实带来完全不同的影响；而交叉审问是了解这些情况的最佳途径。【5】（注意Wigmore对情境重要性的强调——FRISCO中的S。）在Arlene的审判中，对抗和交叉审问的实用性得到了很好的体现。在他被刺伤的时候，只有她和Al两人在餐厅里。因此，她是唯一可靠的第一手资料来源。尽管辩护律师有权不让她上庭作证，但他选择了传唤她。如果被告拒绝作证和接受交叉审问，看起来会很可疑。

She testified that when trying to escape from him, she grabbed the knife from the cabinet top and, in desperation, swung it around behind her w ithout even looking at him. If she had not been on the stand, then her attorney would presumably have said something to that effect. That would have been hearsay. He could not have been cross-examined about it. Even if he had been, oddities in the story could not have been explored because the best he could do is simply repeat w'hat she had told him.   
她作证说，当试图逃离他时，她从橱柜顶上抓起刀子，绝望地将它摆动在身后，甚至没有看他。如果她没有在证人席上，那么她的律师可能会说出类似的话。那将是传闻。他无法对此进行交叉审问。即使他被问到了，故事中的奇怪之处也无法探究，因为他所能做的就是简单地重复她告诉他的事情。

­nation, though he protected her from the embarrassment of refusing to testify. The prosecuting attorney proceeded to ask her whether she In choosing to call her to the stand, he exposed her to the risk of cross-examination, though he protected her from the embarrassment of refusing to testify. The prosecuting attorney proceeded to ask her whether she is left- or right-handed. She said she is right-handed. The placement of the knife, the cabinet, and the wall required her to swing at him with her left hand, if her swing was backhanded, as she said. When the attorney pointed this out, she agreed and said she swung with her left hand. On request she demonstrated the action. The prosecutor then showed her a diagram of the room and the furniture and contended that the victim could not have been in a place where he could be hit in the way he was hit if she swung the way she said. This could not have come out, if we had been given only the defense attorney’s account of what she said, without cross-examination. Incidentally, the jury later acted out the stabbing in accord with her description and found the description implausible.  
在选择传唤她上庭时，他让她面临被盘问的风险，但也保护她免于拒绝作证的尴尬。检察官随后询问她是左撇子还是右撇子。她回答说她是右撇子。刀子、橱柜和墙壁的位置要求她用左手挥动，如果她的挥动是反手的话，就像她所说的那样。当律师指出这一点时，她同意并说她用左手挥动。应要求，她示范了这个动作。检察官随后向她展示了房间和家具的图示，并声称如果她挥动的方式是她所说的那样，受害者不可能处在被打击的位置。如果我们只听取了辩护律师对她所说的陈述，而没有进行盘问，这一点是无法得知的。顺便说一句，陪审团后来根据她的描述模拟了刺杀行为，并发现这个描述不可信。

Although there are good reasons for the prohibition of hearsay in the courts, exceptions are allowed. Reporting someone’s dying words (such as Al’s saying, “Arlene stabbed me,” to Arlene’s father) is often allowable.  
尽管法庭禁止传闻有其合理理由，但也允许例外情况。报告某人临终遗言（例如艾尔说，阿琳刺了我，对阿琳的父亲）通常是允许的。

In daily life, we often offer and accept hearsay. Often, this is perfectly all right. For example, in marking a checklist, a copilot records what the pilot says he sees. The copilot asks, “Gear-down lights [on]?” The pilot says “Check” or something like that, meaning that the lights that show that the landing gear is down are lit. The copilot, without actually looking at the lights, checks the box by that item and thus makes a hearsay record. The procedure is quite appropriate.  
在日常生活中，我们经常提供和接受传闻。通常情况下，这是完全可以的。例如，在标记一个清单时，副驾驶员记录飞行员所说的内容。副驾驶员会问，起落架灯亮了吗？飞行员会说，检查或类似的话，意思是显示起落架已放下的灯亮了。副驾驶员并没有真正看灯，只是勾选了该项目的方框，从而形成了一份传闻记录。这个过程是非常合适的。­lot,

Although there are legitimate exceptions, hearsay is often still dangerous. Generally, it is better to get closer to the observation than to use an intermediary. Much gossip is hearsay, and often is distorted, as we all well know.  
虽然有合理的例外情况，传闻通常仍然是危险的。一般来说，与其使用中间人，更好的办法是接近观察。许多闲言碎语都是传闻，而且常常被扭曲，我们都很清楚。

An interesting way to show the unreliability' of second-hand, third-hand, and even more remote observation reports is to play a game called “Telephone.” Have a friend write down in two sentences a description of something the friend has seen, allowing no one else to see the writing at that time. Then the friend, unheard by the rest of the group, tells a second friend what is written. The second friend, unheard by the rest, tells a third, then on to a fourth. This should be enough, but more can be added. The last in the line gives aloud the report as he or she believes it to be. Discrepancies from the original are usually interesting.  
展示二手、三手甚至更远的观察报告的不可靠性的一种有趣方式是玩一个叫做电话的游戏。让一个朋友用两句话写下他所见到的事物的描述，此时不允许其他人看到写作。然后这个朋友，不被其他人听到，告诉第二个朋友写了什么。第二个朋友，不被其他人听到，告诉第三个朋友，然后依次传递给第四个。这应该足够了，但也可以添加更多。最后一个人按照他或她认为的方式大声宣读报告。与原始内容的差异通常很有趣。

Records  
记录

We are all familiar with the phenomenon of bad memories. Mine is particularly bad. The longer the time since an event, the more likely it is that I have forgotten the details—often the entire event. For most people, reports of long-ago events are less dependable than recent reports.  
我们都熟悉记忆不好的现象。我的记忆尤其糟糕。时间越久远，我就越有可能忘记细节，甚至整个事件。对于大多数人来说，关于很久以前的事件的报道不如最近的报道可靠。

­cant to the observer can be better remembered than more recent events of lesser sig­nificance. Furthermore, older people sometimes remember long-ago events much more clearly than recent ones.There are exceptions. For example, distant events that were particularly significant to the observer can be better remembered than more recent events of lesser significance. Furthermore, older people sometimes remember long-ago events much more clearly than recent ones.  
有例外情况。例如，对观察者来说特别重要的遥远事件比较不重要的最近事件更容易记住。此外，年长者有时对很久以前的事件记忆更清晰。

­ducing a system of records brings in another possible source of error, records are gen­erally much better than memory, although they can be altered. When I record the carGenerally, the safest way to ensure accuracy is to make a record. Although introducing a system of records brings in another possible source of error, records are generally much better than memory, although they can be altered. When I record the car mileage at the beginning of a trip, my numbers are occasionally difficult to read, but my record is almost always better than my memory.  
通常，确保准确性的最安全方法是做记录。尽管引入记录系统会带来另一个可能的错误来源，但相比记忆，记录通常要好得多，尽管它们可以被修改。当我在旅行开始时记录汽车里程时，我的数字有时很难读，但我的记录几乎总是比我的记忆更好。

Great emphasis on records is found in the courtroom, and for good reason. On things that can be recorded, records are less prone to simple error than memories and there is usually less opportunity to alter a record without getting caught than to alter one’s report of something one remembers. For example, an erasure of my mileage number might well show, but a switch in what I decide to report from my memory would go undetected.  
法庭上非常重视记录，这是有充分理由的。对于可以记录的事物，记录比记忆更不容易出现简单错误，而且通常更难在不被发现的情况下篡改记录，相比之下，篡改对某件事情的记忆报告则更容易不被察觉。例如，我的里程数被擦除可能会被发现，但是我决定从记忆中报告的内容的改变则可能不会被察觉。

­fidence in the observation records offered in evidence. They are not rigid rules; they depend on the particular situation. Roughly speaking, they try to ensure that the correct observation was recorded in the first place and that the record was adequately protected from alteration. Among other things, they emphasize the following four guidelines:There is an elaborate set of guidelines used in courtrooms to help us have confidence in the observation records offered in evidence. They are not rigid rules; they depend on the particular situation. Roughly speaking, they try to ensure that the correct observation was recorded in the first place and that the record was adequately protected from alteration. Among other things, they emphasize the following four guidelines:  
法庭上有一套详细的指南，用于帮助我们对提供作为证据的观察记录产生信心。它们并不是严格的规则；它们取决于具体情况。大致上，它们试图确保正确的观察首先被记录下来，并且记录得到了充分的保护，以防止被篡改。除其他事项外，它们强调以下四个指南。

The record is made by the observer. (This eliminates an extra possible source of error.)  
观察者记录。(这样可以消除一个额外的可能误差来源。)

The observer (who, it is hoped, is also the record maker) is the one who gives the report, rather than someone else. (This eliminates an extra possible source of error and enables cross-examination).  
观察者（希望也是记录制作者）是提供报告的人，而不是其他人。（这消除了一个额外的可能错误来源并使得交叉审问成为可能）

The observer claims to remember that at the time of making the record he or she believed it to be correct, or the observer has the habit of making correct records.  
观察者声称记得在记录时他或她相信它是正确的，或者观察者有做正确记录的习惯。­rect records.

There is corroboration of the records. (Corroboration is agreement that comes from some other source.)  
记录有证实。(证实是来自其他来源的一致意见。)

For each of these four guidelines, can you think of a case you know in which it was violated (with some sort of distortion resulting from the violation)?  
对于这四个准则中的每一个，你能想到一个你所知道的违反它的案例吗（由于违反而导致某种扭曲）？

­lines I have mentioned are the most important general ones. Different situations call for different emphases and kinds of application, so you must be sensitive to the situ­ation in order to apply these guidelines properly, and (perhaps) to develop some that Actually, there are many more guidelines used in the courts for specific kinds of situations. Legal practice depends on accuracy of observation reports. But the guidelines I have mentioned are the most important general ones. Different situations call for different emphases and kinds of application, so you must be sensitive to the situation in order to apply these guidelines properly, and (perhaps) to develop some that arc special for the type of situation you find.  
实际上，在法院中针对特定情况有许多更多的指导方针。法律实践依赖于观察报告的准确性。但是我提到的这些指导方针是最重要的一般性指导方针。不同的情况需要不同的强调和应用方式，所以你必须对情况敏感，以便正确应用这些指导方针，并（也许）为你所遇到的情况开发一些特殊的指导方针。

For example, it was important to determine whether the knife was lying out in plain view before the stabbing. If it was, then Arlene’s claim that she just grabbed it without thinking much about it would be more plausible. If it was not lying in plain view, then the stabbing would have seemed to be more deliberate and to have required more thought by Arlene.  
例如，重要的是要确定在刺伤之前刀子是否摆在明显的视野中。如果是的话，那么阿琳的说法，她只是随手拿起来而没有多想，会更有道理。如果不是摆在明显的视野中，那么刺伤看起来就更加有预谋，需要阿琳更多的思考。

­tive’s notes on Arlene’s original statement about the stabbing. For this record, Arlene was the observer and the detective a hearsay recorder of Arlene’s observation. Unfortunately, Arlene had an obvious conflict of interest. It was in her interest for the jury to believe that the knife was lying in plain sight. Given this conflict of inter­est, it was important to get and record corroborating testimony from other members There was a written record of evidence about the knife’s location: the detective’s notes on Arlene’s original statement about the stabbing. For this record, Arlene was the observer and the detective a hearsay recorder of Arlene’s observation. Unfortunately, Arlene had an obvious conflict of interest. It was in her interest for the jury to believe that the knife was lying in plain sight. Given this conflict of interest, it was important to get and record corroborating testimony from other members of her family (who also had a conflict of interest). Other corroboration from visitors would also have been helpful, but it was not available.   
关于刀具位置的书面证据有记录：侦探对阿琳的原始陈述关于刺伤的笔记。对于这份记录，阿琳是观察者，侦探是阿琳观察的传闻记录者。不幸的是，阿琳存在明显的利益冲突。她希望陪审团相信刀子就在眼前。鉴于这种利益冲突，从她家其他成员（他们也存在利益冲突）那里获取并记录证实证词非常重要。来访者的其他证实也会有帮助，但可惜没有这样的证词可用。

­roboration. The question was Further examination of Arlene would not have been as much help as such corroboration. The question was a simple one. Was the knife on the cabinet top or not? This was a case in which the guideline calling for corroboration was more important than the guideline calling for the observer (Arlene) to make the report to the jury.  
进一步对阿琳进行检查并没有像这样的证实那样有太大帮助。问题很简单。刀子是放在橱柜顶部还是不是？这是一个案例，在这个案例中，要求证实的指导方针比要求观察者（阿琳）向陪审团报告的指导方针更重要。

In another situation, however, it was more important to satisfy the report-by- observer guideline than the corroboration guideline. This concerned the nature of the wound. The pathologist testified that the wound did not involve bones and was clean, directed downward at about 45 degrees, and about 2.5 inches deep. Was it so clean that the knife had to go in and out at the same angle (45 degrees)? If so, the jury might conclude that the knife stroke could not have been made the way Arlene described.  
然而，在另一种情况下，满足按观察者报告的准则比协作准则更为重要。这涉及到伤口的性质。病理学家证明伤口没有涉及骨头，是干净的，向下倾斜约45度，深约2.5英寸。刀子进出时是否如此干净，以至于必须以相同的角度（45度）进入和退出？如果是这样的话，陪审团可能会得出结论，阿琳描述的刀伤不可能是这样造成的。

­ten record. Corroboration by others was not especially important here. She was accepted as an expert without conflict of interest. So this was a case in which the report-by-observer guideline was more important than the corroboration guideline.The pathologist’s written record merely said “clean.” So, under questioning, she needed to give further details, which would come from her memory, not the written record. Corroboration by others was not especially important here. She was accepted as an expert without conflict of interest. So this was a case in which the report-by-observer guideline was more important than the corroboration guideline.  
病理学家的书面记录只是简单地写着'干净'。因此，在被询问时，她需要提供更多细节，这些细节将来自于她的记忆，而不是书面记录。他人的证实在这里并不特别重要。她被接受为一位没有利益冲突的专家。因此，这是一个报告者指南比证实指南更重要的案例。

­lines. You must use your own good judgment in applying them and in developing special ones to fit particular situations. But even though there is variation in the degree of emphasis on the guidelines, the guidelines as a whole make a good basis for a judgment.The point is that different situations call for different emphases on the guidelines. You must use your own good judgment in applying them and in developing special ones to fit particular situations. But even though there is variation in the degree of emphasis on the guidelines, the guidelines as a whole make a good basis for a judgment.  
重点是不同的情况需要对指南进行不同的强调。在应用它们和制定适应特定情况的特殊指南时，您必须运用自己的判断力。尽管在对指南的强调程度上存在差异，但整体上，这些指南构成了一个很好的判断基础。

Summary  
摘要

A report of an observation is generally more dependable if made by the observer. Furthermore, if the observer makes the report in person, then the observer can be questioned and unclear points clarified—an advantage.  
如果观察者亲自进行观察并进行报告，那么观察的报告通常更可靠，而且可以对观察者进行质询和澄清不明确的问题，这是一个优势。

­ceptible to deliberate deception. But records can be altered and mistakes can creep in, making corroboration desirable.It is generally desirable to base observation reports on records made at the time of observation. Records are usually better than memories, and are generally less susceptible to deliberate deception. But records can be altered and mistakes can creep in, making corroboration desirable.  
通常最好基于观察时的记录来进行观察报告。记录通常比记忆更可靠，一般不容易受到故意欺骗的影响。但是记录可能会被修改，错误可能会出现，因此需要相互证实。

Check-Up 4B

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

­one else say is called 4:13 Any testimony in which a witness reports what he or she heard someone else say is called hearsay.  
4:13 任何一个证人报告他或她听到别人说的话的证词被称为传闻。

**4:14 Hearsay testimony is always improper in a court of law.  
4:14 法庭上总是不允许传闻证词。**

4:15 Observation reports by the observer are generally to be preferred over others’ reports of these observation reports.  
4:15 观察员的观察报告通常优先于其他人对这些观察报告的报告。

4:16 Generally, records and memories are equally reliable sources of observation reports.  
一般来说，记录和记忆都是观察报告的可靠来源。­vation reports.

4:17 The guidelines for presenting and requesting observation records are equally important in each situation.   
4:17呈现和请求观察记录的准则在每种情况下同样重要。

Short Answer  
简答题

For the italicized material in each of Items 4:18 through 4:23, mark one or more of A, B, C, and D, or choose E for “None of these”:  
对于4:18到4:23中每个项目中的斜体材料，请标记A、B、C和D中的一个或多个，或选择E表示没有这些选项：

1. The italicized material is hearsay.  
   斜体部分是传闻。
2. The italicized material is a presentation by the observer of a record of an observation, the record having been made by the observer.  
   斜体材料是观察者对观察记录的展示，该记录是由观察者制作的。
3. The italicized material is a presentation by someone (not the observer) of a record of an observation, the record having been made by the observer.  
   斜体部分是由某人（不是观察者）对观察记录进行的演示，记录是由观察者进行的。
4. The italicized material is a presentation by someone (not the observer) of a recor d of an observation, the record having been made by a third person (also not the observer).  
   斜体材料是由某人（不是观察者）对观察记录的呈现，该记录是由第三人（也不是观察者）制作的。
5. None of these.  
   没有其中任何一个。

4:18 Arlene’s father said “I heard Al shout, ‘Arlene, you stabbed me.,r, (This served as evidence that Arlene stabbed Al.)  
4:18 阿琳的父亲说，我听到阿尔喊道，'阿琳，你刺伤了我。'（这作为阿琳刺伤阿尔的证据。）

4:19 “1saw Martine and Karl out together at the Blue Cloud,” said Jim.  
4:19 我看到Martine和Karl一起在蓝云酒吧，

4:20 Jim said, “I wrote in my notebook that I saw Martine in the Blue Cloud at 11:00 p.m.”  
4:20吉姆说，我在笔记本上写着我在晚上11点在蓝云中看到了马丁。

4:21 The person investigating the crash of the airliner reported, “ *There was a check in the box by the phrase on the checklist, ‘Gear-down lights [on]3.* Presumably the copilot made the check after asking the pilot whether those lights were lit.”

4.22 Sir James Cottrell-Fiske said, “I wrote in my diary for November 18 that *I saw a V-2 rocket buzzing over London.”* (This was offered by Cottrell-Fiske as evidence that V-2s were in operation by that time.)

4:23 Detective Pulaski said, *“Detective Jones found Al,s keys in a pocket of Arlene,s purse, with the pocket zipped closed. Detective Jones found the purse on the dining room floor.* Detective Jones wrote this information down in her report made out at 3 A.M. the next morning, and she told me about it as well. Unfortunately, Detective Jones has left the state to take a position elsewhere, so she cannot give this report in person.”

Medium Answer  
中等答案

4:24 In a newspaper or magazine, find one observation statement. Copy or present enough of the selection in which it appears for your instructor to understand what is going on. Underline the statement. Classify the observation statement as you have just done with the previous ones (one or more of A-D or E) and tell whether you believe it and why.  
4:21 调查飞机失事的人报告说，清单上的短语“起落架灯[开]”旁边有一个勾。可以推测副驾驶在询问飞行员那些灯是否亮后进行了检查。 4:22 詹姆斯·科特雷尔-菲斯克爵士说，我在11月18日的日记中写道，我看到一枚V-2火箭在伦敦上空飞行。（科特雷尔-菲斯克爵士提供这个证据表明V-2火箭在那个时候已经开始运行。） 4:23 普拉斯基侦探说，琼斯侦探在阿琳的钱包口袋里发现了艾尔的钥匙，口袋拉链是合上的。琼斯侦探在第二天凌晨3点填写的报告中记录了这些信息，并且也告诉了我。不幸的是，琼斯侦探已经离开这个州去其他地方工作，所以她无法亲自提供这份报告。 中等回答4:24 在报纸或杂志中，找到一个观察陈述。复制或呈现足够的选段让您的教师能够理解正在发生的事情。在观察陈述下划线。像之前一样对观察陈述进行分类（A-D或E中的一个或多个），并告诉您是否相信它以及原因。

Making an Overall Appraisal of an Observation Statement  
对观察陈述进行整体评估

­teria. My rough attempts to do this for the statement as uttered by Arlene, “The knife was in plain sight on the cabinet” and tor the pathologist’s statement, “The wound was about 2.5 inches deep,” are in Table 4.1.For convenience in summarizing your reactions to an observation statement, you can make a chart like the credibility chart and include the credibility criteria. You can make it detailed with a line for each concern, or make fewer lines by grouping the criteria. My rough attempts to do this for the statement as uttered by Arlene, “The knife was in plain sight on the cabinet” and tor the pathologist’s statement, “The wound was about 2.5 inches deep,” are in Table 4.1.   
为了方便总结对观察陈述的反应，您可以制作一个类似可信度图表的图表，并包括可信度标准。您可以为每个关注点细化一行，或者通过分组标准来减少行数。我试图为Arlene所说的陈述（刀子就在橱柜上）以及病理学家的陈述（伤口大约有2.5英寸深）做了一些初步的尝试，结果见表4.1。

TABLE 4.1 Judging Observation Statements  
表4.1 判断观察陈述

1. Credibility of source  
来源的可信度

|  |  |  |
| --- | --- | --- |
|  | *Arlene’s statement ‘'The knife was in plain sight on the cabinet.3’* | *Pathologist’s statement aThe wound was about 2½ inches deep.”* |
| a. Background experience or knowledge | Strong | Strong |
| b Lack of conflict of interest | Very weak | Strong |
| c Agreement with others who come out as well as, or better, on other criteria | Satisfactory | No judgment |
| d. Reputation | No judgment | Strong |
| e. Established procedures | Strong | Strong |
| f Known risk to reputation | Satisfactory | Strong |
| g. Ability to give reasons | Strong | Strong |
| h Careful habits | Uncertain | Strong |
| Summary: Credibility | Weak | Strong |
| 2. Minimal concluding involved (observation rather than inference) | |  |
|  | Strong | Strong |
| 3. The process of observation a Appropriate technology | Strong | Strong |
| b. Observation conditions | Strong | Strong |
| c Observer ability | Strong | Strong |
| b. Observation attention, bias, care | Weak | Strong |
| Summary Process of observation | Satisfactory | Strong |
| 4. The report  a. Nonhearsay b Records | Strong | Strong |
| i Records made by observer | Weak | Strong |
| ii Report made by observer | Strong | Strong |
| iii Observer claims to remember correctness, or has habit of being correct | Strong | Strong |
| iv Corroboration of record | Satisfactory | None |
| Summary The report | Satisfactory | Strong |
| Summary of all my judgments: | Uncertain | Very probably true |

­ing (observation, rather than concluding), the process of observation, and the report. If one seeks a little more detail, one could substitute three subcategories from the process of observation (technology, conditions, and observer) and two from report (nonhearsay and records), making seven crucial categories in all (credibility, minimal concluding, technology, conditions, observer, nonhearsay, and records). Other orga­nizing arrangements of relevant factors are possible. What organizing arrangement do you like, given some situation with which you are familiar? Think about it.Although there are eighteen criterion-based judgments before the grouped and final judgments in Table 4.1, one could group the criteria to make, for example, four judgments before the final judgment. The four could be credibility, minimal concluding (observation, rather than concluding), the process of observation, and the report. If one seeks a little more detail, one could substitute three subcategories from the process of observation (technology, conditions, and observer) and two from report (nonhearsay and records), making seven crucial categories in all (credibility, minimal concluding, technology, conditions, observer, nonhearsay, and records). Other organizing arrangements of relevant factors are possible. What organizing arrangement do you like, given some situation with which you are familiar? Think about it.  
尽管在表4.1中有18个基于标准的判断在分组和最终判断之前，但可以将这些标准分组，例如，在最终判断之前进行四个判断。这四个判断可以是可信度、最小结论（观察而非结论）、观察过程和报告。如果需要更详细的信息，可以从观察过程中替换三个子类别（技术、条件和观察者），以及从报告中替换两个子类别（非口头证词和记录），总共形成七个关键类别（可信度、最小结论、技术、条件、观察者、非口头证词和记录）。其他相关因素的组织安排也是可能的。在你熟悉的某种情况下，你喜欢哪种组织安排？请考虑一下。

­arate judgments. The final judgment must take into account the relative importance of your separate judgments, given the situation.No matter how the relevant factors are organized, there is no precise line that separates fully reliable from fully unreliable observation statements, and you must not simply keep score. One overall judgment must be made, taking into account the separate judgments. The final judgment must take into account the relative importance of your separate judgments, given the situation.  
无论相关因素如何组织，都没有明确的界线将完全可靠的观察陈述与完全不可靠的观察陈述分开，你不能简单地记分。必须做出一个总体判断，考虑到各个独立判断。最终判断必须考虑到你的独立判断在情况下的相对重要性。

I would have judged Arlene’s statement to be probably true if I had given roughly equal weighting to each of the four major categories that I used. But actu­ally, I felt that she had much to gain by lying about this. Consider: The knife’s being in plain sight could have suggested its use to a frightened person, making her use of it more readily interpretable as a thoughtless act. Under this interpretation, she would not have known that what she was doing “caused a strong probability of great bodily harm,” which became a crucial condition for murder in this case. So the con­flict of interest criterion was very important. This criterion also made the corrobora­tion from her family less helpful because they also had a conflict of interest. So I gave the rating “uncertain” to Arlene’s observation statement. On the other hand, I judged the pathologist’s statement to be very probably true because that statement came out so very well on all the criteria that seemed important in that situation. (Note the importance of the situation in this process, the S in *FRISCO.)*

­ble attention seems acceptable.Perhaps you have noticed that there is some duplication in the criteria. Corroboration of a record (under records) might simply be achieved by agreement with others (under credibility). Because corroboration is verv important, such double attention seems acceptable.  
如果我对我所使用的四个主要类别给予了大致相等的权重，我本来会认为阿琳娜的陈述可能是真实的。但实际上，我觉得她在撒谎方面有很多好处。想想看：刀子放在明显的地方可能会向一个害怕的人暗示使用它，使她的行为更容易被解释为一种无思考的行为。根据这种解释，她可能不知道她的所作所为会造成严重的身体伤害的强烈可能性，而这在这个案件中成为了谋杀的一个重要条件。因此，利益冲突的标准非常重要。这个标准也使得她家人的证词变得不那么有帮助，因为他们也存在利益冲突。所以我对阿琳娜的观察陈述给予了不确定的评价。另一方面，我认为病理学家的陈述非常可能是真实的，因为在那种情况下，这个陈述在所有看起来重要的标准上都表现得非常好。（注意在这个过程中情况的重要性，FRISCO 中的 S）也许你已经注意到，在这些标准中有一些重复。记录的证实（在记录下）可能只需通过与他人的一致（在可信度下）来实现。由于证实非常重要，这种重复关注似乎是可以接受的。

The credibility criterion “ability to give reasons” requires a special interpreta­tion when applied to observation statements. If someone actually gives a reason to support a statement, then the statement becomes a conclusion rather than an obser­vation. My suggestion is to let ability to give reasons here mean ability to give rea­sons in defense of the observation procedure that was used. This could be a simple defense of a simple procedure. For example, Jim should have been able to say, if asked, “Just looking around at the Blue Cloud was all I had to do. It is a small, well- lighted place, it was not crowded, and the air was clear.”

Note that I judged both statements strong for observer’s skill because I felt that each person had sufficient skill to make the observation being made. You might be tempted to judge Arlene negatively here because no special ability is required to observe a knife in plain sight. But remember all that matters is that the observer have enough ability for the type of observation being made. Arlene satisfied that requirement.  
可信度标准给予理由的能力，在应用于观察陈述时需要进行特殊解释。如果有人实际上给出了支持陈述的理由，那么该陈述就变成了结论而不是观察。我的建议是，在这里给予理由的能力指的是能够为所使用的观察程序提供理由的能力。这可以是对简单程序的简单辩护。例如，吉姆应该能够说，如果被问到，我只需要四处看看蓝云就行了。这是一个小而明亮的地方，人不多，空气清新。请注意，我认为这两个陈述对观察者的技能都很强，因为我觉得每个人都有足够的技能来进行所做的观察。你可能会因为阿琳观察到一个明显可见的刀而对她进行负面评价，但请记住，重要的是观察者对所做观察的类型具有足够的能力。阿琳满足了这个要求。

Finally, note that I judged Arlene weak on “Record made by observer.”   
最后，注意我判断阿琳在观察者记录中是脆弱的。

Although the police later questioned her and secured a statement from her, she did not at the time of the killing write anything down or tape record her observations about Al’s death. This is not to say that she should have done so. Not making a record at the time of observation did detract from the reliability of her observations. Therefore, I judged her observation report weak here—the same score I would give to anyone else who did not make an immediate record of an observation.  
虽然警方后来对她进行了询问并取得了她的陈述，但她在谋杀发生时并没有记录下任何内容或录音她对阿尔斯死亡的观察。这并不意味着她应该这样做。观察时不做记录确实减弱了她观察的可靠性。因此，我认为她的观察报告在这里是薄弱的——对于任何没有立即记录观察的人，我都会给予同样的评分。

I suggest that you examine each value I have assigned and try to see why I did what I did. In my assignments, I naturally took more information into account than you can know. Knowing the situation is very important, so do not expect complete agreement between us. Rather, seek to understand roughly how I arrived at my judgments, given what you already know about the trial.  
我建议你检查我分配的每个值，并尝试理解我为什么这样做。在我的分配中，我自然考虑了比你所知道的更多信息。了解情况非常重要，所以不要期望我们之间完全一致。相反，试着大致了解我是如何根据你已经了解的审判情况做出判断的。­ments, given what

The fact that your judgments inevitably depend on your appraisal of a situation does not mean that just any judgment is acceptable. Clearly, Arlene’s observation statement was not as dependable as the pathologist’s statement.  
你对情况的评估不可避免地影响你的判断，并不意味着任何判断都是可以接受的。显然，阿琳的观察陈述不如病理学家的陈述可靠。

Chapter Summary  
章节摘要

In this chapter, you have considered a number of criteria for observations. When you are considering observation statements, the criteria for credibility also apply. Application of each criterion requires good judgment, as does weighting them and making an overall judgment. These criteria should be used not only for discussion and grounding of inferences in your personal, vocational, and civic situations, but for vocational or civic position papers that depend on observations for one or more reasons in support of your views.  
在本章中，您已经考虑了一些观察的标准。当您考虑观察陈述时，可信度的标准也适用。每个标准的应用都需要良好的判断力，同样需要对它们进行权衡和做出整体判断。这些标准不仅应用于您个人、职业和公民情境中的讨论和推理基础，还应用于依赖观察作为一个或多个原因支持您观点的职业或公民立场文件。­

Although loose and vague to an extent, the criteria are useful. Some statements are more dependable than others, as an application of the criteria can show. But you must keep the whole situation in mind and be flexible, vigilant, and careful.  
虽然有些宽泛和模糊，但这些标准是有用的。一些陈述比其他陈述更可靠，通过应用这些标准可以看出来。但你必须牢记整个情况，并保持灵活、警惕和谨慎。

Observation comes under the R in FRISCO and depends on the S. It is used in judging the acceptability of reasons (including evidence).  
观察是FRISCO中的R，并且依赖于S。它用于判断理由（包括证据）的可接受性。

Check-Up 4C

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows you understand.  
如果为假，则将其改为真。尝试以一种能展示你理解的方式来做到。

**4:25 Skill in observing is required only where technology is involved.  
观察技能只在涉及技术的情况下需要。**

**4:26 All really reliable observations require special technology.  
所有真正可靠的观察都需要特殊的技术。**

**4:27 After rating an observation statement according to each of the criteria for judging observation statements, you should judge as unreliable any statement that receives less than strong ratings for at least two criteria.  
4:27 根据评判观察陈述的每个标准对观察陈述进行评分后，对于至少有两个标准评分低于强度的陈述，您应该判断其不可靠。**

**4:28 Agreement by several people on an observation statement is the most important criterion for observation statements.  
4:28几个人对观察陈述的一致意见是观察陈述的最重要标准。**

Medium Answer  
中等答案

**4:29 Take the one statement you considered for 4:24, identify it, and use the suggested system for assigning judgments. Use a level of complexity of the system with which you feel comfortable for the situation, Reach a final judgment and explain why you made your final judgment. Then explain why you used the degree of complexity of the system that you did use. Was your judgment helped by the suggested system for assigning values? Why?  
4:29 将您在4:24中考虑的那个陈述找出来，并使用建议的系统来进行判断。对于这种情况，请使用您感到舒适的系统复杂程度。做出最终判断，并解释您为什么做出了最终判断。然后解释您为什么使用了您所使用的系统复杂程度。您的判断是否受到了建议的系统对于赋值的帮助？为什么？**­ity of the system with which you feel comfortable for the situation, Reach a final judgment and explain why you made your final judg­ment. Then explain why you used the degree of complexity of the sys­tem that you did use. Was your judgment helped by the suggested sys­tem for assigning values? Why?

**4:30 Do the same for an observation statement made by a friend. Be sure to quote the statement and describe the situation.  
4:30 做同样的事情，朋友的观察陈述。确保引用陈述并描述情况。**

**4:31 Is the full set of observation criteria too elaborate for your purposes? Why? If it is too elaborate, develop an alternative and apply it in a situation you describe. Comment on the usefulness of your system for the situation you have described.  
4:31完整的观察标准对您的目的来说是否过于繁琐？为什么？如果过于繁琐，制定一个替代方案并应用于您描述的情境中。对于您所描述的情境，评论您的系统的实用性。**­ation you describe. Comment on the usefulness of your system for the situation you have described.

Suggested Answers for Chapter 4  
第四章的建议答案

Reminder: In some cases different answers are as good as the ones given. If one of your answers is different from the one suggested, then either try to satisfy yourself that yours really is all right or else try to figure out why it is not.  
提醒：在某些情况下，不同的答案与给出的答案一样好。如果你的答案与建议的答案不同，要么尽量确信你的答案是正确的，要么试着弄清楚为什么不是。

**Check-Up 4A**

**4:1** T **4:2** T **4:3 O**

**4:7 C 4:8 C 4:9 O**

**4:4 O 4:5 C 4:6 O 4:10 C 4:11 O 4:12 C**

**Check-Up 4B 4:13 F 4:14 F**

**4:15 T 4:16 F**

**4:17 F**

**4:13 Roughly speaking, hearsay is testimony in which a witness reports something that he or she heard someone else say (and the testimony is intended to support the claim that what was said was true).  
4:13 粗略地说，传闻是指证人报告自己听到别人说的事情（并且证词旨在支持所说的内容是真实的）**

**4:14 Hearsay testimony is usually improper in a court of law.  
4:14 法庭上通常不允许传闻证词。**

**4:16 Generally, records are more reliable than memories.  
一般来说，记录比记忆更可靠。**

**4:17 The weighting of the guidelines for presenting and requesting observation records varies with the situation.  
4:17 展示和请求观察记录的指南的权重因情况而异。**­vation records varies with the situation.

**4:18 A 4:19 E 4:20 B 4:21 D 4:22 B 4:23 A & C 4:24 This is up to you. I will be asking you about this one again.  
4:18 A 4:19 E 4:20 B 4:21 D 4:22 B 4:23 A & C 4:24 This is up to you. I will be asking you about this one again.**

**Check-Up 4C**

**4:25 F 4:26 F 4:27 F 4:28 F**

**4:25 Skill in observing is often required even when technology is not involved.  
即使没有涉及技术，观察技巧通常也是必需的。**

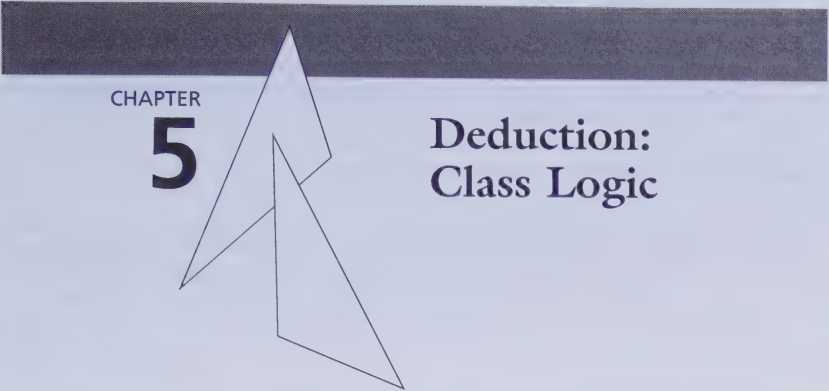
**4:26 Many reliable observations do not require special technology.  
4:26 许多可靠的观察不需要特殊技术。**

**4:27 There are no precise score cutoff points for reliability of observation statements.  
4:27观察陈述的可靠性没有精确的分数截点。**

**4:28 Corroboration of an observation statement is often very important, but not always the most important thing.  
4:28 观察陈述的证实通常非常重要，但并不总是最重要的事情。**

**4:29 and 4:30 these are up to you. Be sure that you have taken the situation into account in making your judgment.  
4:29和4:30由您决定。请确保在做出判断时考虑了情况。**

**4:31 Check your alternative with some friends or associates.  
4:31 与一些朋友或同事核对您的备选方案。**



In Chapters 2, 3, and 4, our primary concerns were with analyzing arguments and appraising reasons. Now we turn to inference (FRISCO’S I), the step from the reason^) to the conclusion.  
在第2、3和4章中，我们的主要关注点是分析论证和评估理由。现在我们转向推理（FRISCOS I），即从理由到结论的步骤。­son^) to the conclusion.

In Chapters 5 and 6, we shall look only at one kind of inference, basically the kind that has interested professional logicians: deductive inference. However, the approach to deductive inference in this book will be different from theirs because our purpose in critical thinking is practical and general, theirs theoretical and abstract, making theirs heavily symbolic. Although their symbolic approach is very valuable for certain purposes of philosophers, mathematicians, computer scientists, and some odt- ers, it has drawbacks when used as a guide to the practical reasoning of people actu­ally deciding what to believe or do. One drawback is the difficulty for most people of understanding its systems at even an elementary level. A second is that most of these systems are occasionally misleading as guidelines to reasoning.[[5]](#footnote-5)

Because the approach to deductive logic you will see here is simple, practical, more intuitive, and usable from the outset of your study, there is much value in it. But if you are looking for an elegant, abstract, symbolic system, you will not find it here. For that, you should go to a standard deductive-logic textbook.  
在第5章和第6章，我们只会看一个类型的推理，基本上是那些专业逻辑学家感兴趣的类型：演绎推理。然而，本书中的演绎推理方法与他们的方法不同，因为我们在批判性思维中的目的是实际和普遍的，而他们的目的是理论和抽象的，因此他们的方法非常符号化。尽管他们的符号化方法对于哲学家、数学家、计算机科学家和其他一些人的某些目的非常有价值，但在实际决定信仰或行动时，它们也有缺点。其中一个缺点是大多数人难以理解其系统，即使是在初级水平上也是如此。第二个缺点是大多数这些系统有时会误导推理的指导方针。[6]因为你将在这里看到的演绎逻辑方法简单、实用、更直观，并且从你学习的开始就可以使用，所以它具有很大的价值。但如果你在寻找一种优雅、抽象、符号化的系统，你在这里找不到。对于那样的系统，你应该去看一本标准的演绎逻辑教材。

In this chapter, you will be introduced to the meaning of the central question in deductive inference: Does a conclusion follow necessarily from one or more other propositions? You will also learn a few specific techniques for handling some standard kinds of deductive arguments. These will give you a good start, but realize that there are many other techniques and possible refinements.  
在本章中，您将了解演绎推理中核心问题的含义：结论是否必然由一个或多个其他命题推出？您还将学习一些处理一些标准演绎论证类型的具体技巧。这些将为您提供一个良好的起点，但请意识到还有许多其他技巧和可能的改进。

­For some people, the material in Chapters 5 and 6 is easy. For others, it is dif ficult. If it is difficult for you, find someone for whom it is easy, and ask for help. If it is easy for you, help someone. By so doing, both parties will actually learn much more than they would otherwise.  
对于一些人来说，第5章和第6章的内容很容易。对于其他人来说，它很困难。如果对你来说很困难，请找一个对他们来说很容易的人寻求帮助。如果对你来说很容易，请帮助别人。通过这样做，双方实际上会学到比他们原本能学到的更多。

Deductive Validity and Invalidity  
演绎有效性和无效性

Let us start with the basic concept in deductive inference: deductive- validity. To say that an argument is deductively valid is to say that its conclusion follows necessarily from its reasons. That is to say, if you accept the reasons in a deductively valid argument, you are thereby automatically committed to accepting the conclusion. In a deductively valid argument, it would be contradictory to reject the conclusions if you accept the reasons. Consider this argument:  
让我们从演绎推理的基本概念开始：演绎有效性。说一个论证是演绎有效的，意味着它的结论必然从其理由中推出。也就是说，如果你接受了演绎有效的论证中的理由，那么你自动地承诺接受结论。在一个演绎有效的论证中，如果你接受了理由，拒绝结论将是矛盾的。考虑以下论证：­ment, you are thereby automatically committed to accepting the conclusion. In a deductively valid argument, it would be contradictory to reject the conclusions if you accept the reasons. Consider this argument:

Example 5:1

­nitely is a cat. So, it follows that Ben is an animal.Look, you do realize that if Ben is a cat, then Ben is an animal. And Ben definitely is a cat. So, it follows that Ben is an animal.  
看，你要明白如果Ben是一只猫，那么Ben就是一只动物。而且Ben肯定是一只猫。所以，可以得出结论Ben是一只动物。

As usual, the first thing is to identify the conclusion (the Fin FRISCO), which is “Ben is an animal.” Then we look for the reasons (FRISCO,s R'), which arc a and b in Example 5:2. Reducing the argument to its minimum features, it becomes:  
通常情况下，首先要确定结论（Fin FRISCO），即Ben是一只动物。然后我们寻找原因（FRISCO，s R'），在例子5:2中是a和b。将论点简化为其最小特征，变成：

Example 5:2

1. If Ben is a cat, then Ben is an animal.  
   如果Ben是一只猫，那么Ben就是一只动物。
2. Ben is a cat.  
   Ben是一只猫。
3. Therefore, Ben is an animal.  
   因此，本是一只动物。

In this argument, the conclusion follows necessarily from the combination of reasons, a and b. That is, if you accept a and b, you are automatically committed to accepting c. There is no way to avoid it. The argument is deductively valid. Make sure that you see this utter unavoidability of the conclusion, given the reasons. It is the essential feature of deductive validity.  
在这个论证中，结论必然地由原因a和b的组合得出。也就是说，如果你接受了a和b，就自动地承认了c。没有任何逃避的方法。这个论证是演绎有效的。确保你看到了这个结论的无法避免性，考虑到这些原因。这是演绎有效性的基本特征。

This concept of deduction is different from that of Sherlock Holmes. Generally, his “deduced” conclusions were based on inductive inference, a type of inference we shall consider soon, starting in Chapter 8. His conclusions generally were supported by very strong evidence, but were not absolutely unavoidable. For example, in The Sign of the Four, when he concluded that a man with a wooden leg had been in the victim’s room, there were other possible explanations for the fact that there were marks on the floor like the marks that would have been made by a wooden leg. The marks on the floor might have been made by someone else in order to implicate the man with the wooden leg. Thus, we are not inescapably committed to Holmes’ conclusion on the basis of his evidence. At best, most of his “deduced” conclusions followed “beyond a reasonable doubt,” the standard used in criminal trials in contemporary courts.   
这种演绎的概念与福尔摩斯的不同。一般来说，他的演绎结论是基于归纳推理的，这是一种我们将在第8章中讨论的推理类型。他的结论通常有很强的证据支持，但并非绝对不可避免。例如，在《四签名》中，当他得出一个有木腿的人曾经在受害者的房间时，地板上有像木腿留下的痕迹这一事实时，还有其他可能的解释。地板上的痕迹可能是其他人为了诬陷有木腿的人而故意留下的。因此，我们并不必根据他的证据无可避免地接受福尔摩斯的结论。最好的情况是，他的大多数演绎结论都是在合理怀疑的基础上得出的，这是当代法庭上刑事审判所使用的标准。­clusion on the basis of his evidence. At best, most of his “deduced” conclusions fol­lowed “beyond a reasonable doubt,” the standard used in criminal trials in contem­porary courts.

Deductive validity is a much more stringent standard. Given the reasons in a deductively valid argument, there is absolutely no way to avoid the conclusion. But as you will come to see, this standard is an ideal about which we often need to make compromises in practical situations. More about these compromises later. But before you can consider the compromises, you must become familiar with the ideal.  
演绎有效性是一个更为严格的标准。在一个演绎有效的论证中，鉴于所给的理由，绝对没有办法避免得出结论。但正如你将会看到的，这个标准是一个我们在实际情况中常常需要妥协的理想。稍后会详细讨论这些妥协。但在你考虑妥协之前，你必须熟悉这个理想。

Note that it is only the relationship between the reasons and the conclusion that we are talking about when we call an argument deductively valid. We are not talking about the conclusion—or the premises—in themselves. In particular, to call an argument deductively valid is not to say that the conclusion is true. Here is an example of a deductively valid argument with a false conclusion:  
请注意，当我们称一个论证为演绎有效时，我们只是在讨论原因和结论之间的关系。我们并不是在讨论结论或前提本身。特别地，称一个论证为演绎有效并不意味着结论是真实的。以下是一个结论错误但演绎有效的论证示例：­ment deductively valid is

Example 5:3

**a. Whales are large fish.  
鲸鱼是大型鱼类。**

b All large fish lay eggs.  
所有大鱼都会产卵。

**c. Therefore, whales lay eggs.  
因此，鲸鱼下蛋。**

In Example 5:3, if you accept a and b, you are automatically committed to accepting c, so the argument is deductively valid, even though the conclusion and the first premise are false.  
在例子5:3中，如果你接受a和b，那么你自动地承认了c的存在，所以这个论证在逻辑上是有效的，尽管结论和第一个前提是错误的。

There is a use for deductive arguments that lead to false conclusions. Such arguments are a way to show that one or more of the reasons are false: If a deductively valid argument has a false conclusion (as in Example 5:3), then we know that at least one of the reasons is false. Otherwise, the conclusion would have to be true because the argument is deductively valid. Suppose that there are only two reasons in a deductively valid argument with a false conclusion (as in Example 5:3). Then, if one of the reasons is true, the other must be false (because at least one has to be false). In Example 5:3, if we assume that b is true and c is false, then a must be false. Therefore, the deductive validity and the assumptions that c is false and b is true establish that a is false. That is, they establish that whales are not large fish. This is the standard kind of reasoning used in rejecting hypotheses.  
推理论证有时会得出错误的结论，这样的论证是用来证明其中一个或多个原因是错误的：如果一个推理有效的论证有一个错误的结论（如例子5:3），那么我们就知道至少有一个原因是错误的。否则，结论必须是真的，因为论证是有效的。假设一个推理有效的论证只有两个原因，但有一个错误的结论（如例子5:3）。那么，如果其中一个原因是真的，另一个必须是假的（因为至少有一个必须是假的）。在例子5:3中，如果我们假设b是真的而c是假的，那么a必须是假的。因此，推理的有效性和假设c是假的、b是真的可以确定a是假的。也就是说，它们确定了鲸鱼不是大鱼。这是拒绝假设时使用的标准推理方式。­ments ­

You will read more about this later, but I discussed the example here to show that a deductively valid argument can have a false conclusion, and that there is a practical use for deductively valid arguments with false conclusions.  
稍后您将会了解更多，但我在这里讨论这个例子是为了展示一个演绎有效的论证可以有一个错误的结论，并且演绎有效的论证带有错误结论有实际应用。­

Deductive invalidity  
演绎无效

A deductively invalid argument is one in which the conclusion does not necessarily follow from the reasons. Here is one:  
推理无效的论证是指结论不一定从理由中得出。这是一个例子：

Example 5:4

1. Fish are vertebrates.  
   鱼是脊椎动物。
2. Mammals are vertebrates.  
   哺乳动物是脊椎动物。
3. Therefore, fish are mammals.   
   因此，鱼是哺乳动物。

­brates, does not require that fish be mammals. Here is another deductively invalid argument:The fact that fish and mammals share a common characteristic, being vertebrates, does not require that fish be mammals. Here is another deductively invalid argument:  
鱼和哺乳动物共享一个共同特征，即脊椎动物，并不意味着鱼就是哺乳动物。这里是另一个演绎无效的论证：

Example 5:5

1. Whales are vertebrates.  
   鲸鱼是脊椎动物。
2. Mammals are vertebrates.  
   哺乳动物是脊椎动物。
3. Therefore, whales are mammals.  
   因此，鲸鱼是哺乳动物。

In Example 5:5, even though the conclusion and the reasons are true, the conclusion does not follow necessarily from the reasons given. As in the fish argument, the fact that whales and mammals share a common characteristic does not require that whales be mammals. Whales are mammals, but this is not necessarily established by their sharing this common characteristic. If you do not see this, substitute fish for whales in Example 5:5. This substitution exhibits the deductive invalidity of the argument in Example 5:5. This sort of substitution is helpful in seeing deductive invalidity (or validity) when your beliefs about truth interfere with your judgments about deductive validity, or when the argument is too complicated or abstract for you to comprehend comfortably.  
在例子5:5中，尽管结论和原因是正确的，但结论并不必然地由给出的原因得出。就像鱼的论点一样，鲸鱼和哺乳动物共享一个共同特征并不意味着鲸鱼一定是哺乳动物。鲸鱼是哺乳动物，但这并不是通过它们共享这个共同特征来确定的。如果你没有看到这一点，在例子5:5中用鱼替代鲸鱼。这种替代展示了例子5:5中的演绎无效性。当你对真理的信念干扰了你对演绎有效性的判断，或者当论证对你来说过于复杂或抽象而无法舒适地理解时，这种替代是有帮助的。­clusion does not follow necessarily from the reasons given. As in the fish argument, ­ment in Example 5:5. This sort of substitution is helpful in seeing deductive invalid­

Examples 5:4 and 5:5 are helpful in several ways:  
例子5:4和5:5在多个方面都很有帮助。

They exhibit deductively invalid relationships.  
他们展示了演绎上的无效关系。

Example 5:5 shows that an argument can have a true conclusion even though it is deductively invalid.  
例子5:5表明，即使一个论证在逻辑上是无效的，它也可以有一个真实的结论。

­structing a similar argument, the validity or invalidity' of which is easy to see.Together, the examples exhibit one technique for evaluating an argument: constructing a similar argument, the validity or invalidity' of which is easy to see.  
一起，这些例子展示了评估论证的一种技巧：构建一个类似的论证，其有效性或无效性很容易看出来。

It is important to realize that deductive invalidity is often not a fatal flaw in an argument. Many good arguments are deductively invalid. An example was presented early in Chapter 2: the prosecutor’s proof beyond a reasonable doubt that Arlene performed the act that caused Al’s death.  
意识到演绎无效通常并不是一个论证的致命缺陷是很重要的。许多好的论证都是演绎无效的。在第二章的早期，举了一个例子：检察官无可置疑地证明了阿琳实施了导致阿尔死亡的行为。­formed the act that caused Al’s death.

Summary  
摘要

We have begun to look at one standard kind of inference: deductive inference. It is different from what Sherlock Holmes generally called ’’deduction,” but is similar in basic spirit, though not in detail, to the deduction of symbolic logic. However, ours is the deduction of everyday reasoning. It is easier to learn this at the outset, and it avoids the occasionally misleading features of symbolic logic. It also lacks the elegance of symbolic logic, but it has practical uses, as you will see.  
我们已经开始研究一种标准的推理方式：演绎推理。它与福尔摩斯通常所称的推理不同，但在基本精神上相似，尽管细节上不同于符号逻辑的推理。然而，我们的推理是日常推理的一种。从一开始学习这种推理更容易，并且避免了符号逻辑中偶尔会误导的特点。它也缺乏符号逻辑的优雅，但它有实际用途，您将会看到。

To say that an argument is *deductively valid* is to say that if the reasons are accepted, the conclusion must necessarily also be accepted. The truth of the reasons requires the truth of the conclusion if the argument is deductively valid. To say that an argument is not deductively valid is to say that the conclusion does not follow nec­essarily—although it might be true and well-established by the reasons, perhaps even proved beyond a reasonable doubt

­ment to be deductively invalid does not show the conclusion to be false. A deduc­tively valid argument can have a false conclusion, if at least one of the reasons is false. It can also have a true conclusion together with false reasons. But showing an argu­ment to be deductively valid, if the reasons are true, establishes that the conclusion is true. Furthermore, showing the conclusion of a deductively valid argument to be false establishes that at least one of the reasons is false.A deductively invalid argument can have a true conclusion, so showing an argument to be deductively invalid does not show the conclusion to be false. A deductively valid argument can have a false conclusion, if at least one of the reasons is false. It can also have a true conclusion together with false reasons. But showing an argument to be deductively valid, if the reasons are true, establishes that the conclusion is true. Furthermore, showing the conclusion of a deductively valid argument to be false establishes that at least one of the reasons is false.  
说一个论证是演绎有效的，意味着如果理由被接受，结论也必须被接受。如果论证是演绎有效的，理由的真实性需要结论的真实性。说一个论证不是演绎有效的，意味着结论不一定成立，尽管它可能是真实的，并且由理由很好地证实，甚至可能被证明无可置疑。一个演绎无效的论证可以有一个真实的结论，所以证明一个论证是演绎无效的并不能证明结论是错误的。一个演绎有效的论证可以有一个错误的结论，如果至少有一个理由是错误的。它也可以有一个真实的结论和错误的理由。但是，如果理由是真实的，证明一个论证是演绎有效的，可以确立结论是真实的。此外，证明一个演绎有效的论证的结论是错误的，可以确立至少有一个理由是错误的。

In brief, any combination is possible but the combination of deductive validity, all true reasons, and a false conclusion. If you have any two of the three, you cannot have the third.  
简而言之，任何组合都是可能的，但是演绎有效性、所有真实的理由和一个错误的结论的组合是不可能的。如果你拥有其中两个，就不能拥有第三个。

­cialty’. Try to apply these ideas to examples in your own specialty, as well as to the examples provided here.Although these points were illustrated with some examples, digesting them and feeling comfortable with them will probably require practice with and discussion of many more examples, including some that apply these basic ideas to your own specialty’. Try to apply these ideas to examples in your own specialty, as well as to the examples provided here.  
虽然这些观点通过一些例子进行了说明，但要理解并对其感到舒适可能需要通过更多的实例练习和讨论，包括一些将这些基本思想应用于您自己专业领域的例子。尝试将这些思想应用于您自己专业领域的例子，以及提供的例子。

Check-Up 5A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**5:1 A deductively valid argument is one in which the conclusion follows  
5:1 一个演绎有效的论证是指结论符合的论证。**

necessarily from the reasons.  
必然来自原因。

5:2 If an argument is deductively valid, acceptance of the reasons commits you to accepting the conclusion.  
5:2 如果一个论证是演绎有效的，接受理由就意味着你必须接受结论。

5:3 Deductive validity is equivalent to proof beyond a reasonable doubt.  
5:3演绎有效等同于合理怀疑之外的证明。

5:4 If the conclusion of an argument is true, then the argument must be deductively valid.  
5:4 如果一个论证的结论是真的，那么这个论证必须是演绎有效的。

5:5 If the conclusion of an argument is false, then the argument must be deductively invalid.  
5:5 如果一个论证的结论是错误的，那么这个论证必定是演绎无效的。

5:6 If the conclusion of a deductively valid argument is false, then one or more of the reasons is false.  
如果一个演绎有效的论证的结论是错误的，那么其中一个或多个理由是错误的。

5:7 If the conclusion of an argument is false and the reasons are true, then the argument is deductively invalid.  
如果一个论证的结论是错误的，而原因是真实的，那么这个论证在演绎上是无效的。

Short Answer  
简答题

For each of the following arguments, decide whether you think it is deductively valid or deductively invalid. Use your basic understanding of deductive validity as I have explained it: If you accept the reasons, you are thereby committed to accepting the conclusion.  
对于以下每个论证，请判断您认为它是演绎有效还是演绎无效。根据我所解释的演绎有效性的基本理解来判断：如果您接受了理由，那么您就必须接受结论。

**5:8 a. FIouses are buildings.  
5:8 a. 房屋是建筑物。**

1. Buildings are structures.  
   建筑物是结构。
2. Therefore, houses are structures.   
   因此，房屋是建筑物。

**5:9 a. Motorcycles are vehicles.  
5:9 a. 摩托车是车辆。**

1. Vehicles are mechanical contraptions.  
   车辆是机械装置。
2. Therefore, motorcycles are mechanical contraptions.  
   因此，摩托车是机械装置。

**5:10 a. Houses are structures.  
5:10 a. 房屋是建筑物。**

1. Homes are structures.  
   房屋是建筑物。
2. Therefore, houses are homes.  
   因此，房屋是家。

**5:11 a. Birds have wings.  
5:11 a. 鸟有翅膀。**

1. Ostriches are birds.  
   鸵鸟是鸟类。
2. Therefore, ostriches have wings.  
   因此，鸵鸟有翅膀。

**5:12 a. No vehicles are permitted.  
5:12 a. 不允许车辆通行。**

1. Motorcycles are vehicles.  
   摩托车是车辆。
2. Therefore, no motorcycles are permitted.  
   因此，不允许摩托车。

Class Logic, Using a Circle System  
逻辑类，使用圆形系统

­tem for dealing with class logic arguments.Next, we shall consider one common type of deductive logic—class logic—the type that deals with relationships among classes and individuals. We shall use a circle system for dealing with class logic arguments.  
接下来，我们将考虑一种常见的演绎逻辑类型——类逻辑——它处理类与个体之间的关系。我们将使用一个圆圈系统来处理类逻辑论证。

Inclusion  
包含

In this circle system, deductive arguments are represented by a set of circles (called Euler circles2) and Vs, each circle representing a class. Xs represent individuals.  
在这个圆圈系统中，演绎论证由一组圆圈（称为欧拉圆圈2）和V组成，每个圆圈代表一个类。X代表个体。

First, I shall represent the argument in Check-Up Item 5:8 with circles, so check back and read that argument. The purpose here is to show how the system works. You already know that the argument is deductively valid.  
首先，我将用圆圈表示检查项目5:8中的论点，所以请回去阅读那个论点。这里的目的是展示系统如何工作。你已经知道这个论点是演绎有效的。

Diagram 5:1, using one circle, represents the class of buildings:  
图5:1，使用一个圆圈，代表建筑类别。

Diagram 5:1

buildings  
建筑物

To show that the class of houses is included in the class of buildings, a circle for houses is put inside the circle for buildings:  
为了显示房屋类别包含在建筑类别中，将房屋的圆圈放在建筑的圆圈内部：

Diagram 5:2

buildings — houses

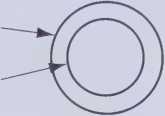
2. This system is largely based on one developed by Leonhard Euler, a Swiss mathematician. Professor William Rapaport has suggested useful changes.   
这个系统在很大程度上基于瑞士数学家莱昂哈德·欧拉开发的系统。威廉·拉帕波特教授提出了一些有用的改变。

Diagram 5:2 is a picture of the relationship stated by reason a in Check-Up Item 5:8. That reason is, ‘'Houses are buildings.” The fact that the circle for houses is inside the circle for buildings pictures the relationship between houses and buildings that is asserted in reason λ. It shows that houses are buildings; that is, the class of houses is included in the class of buildings. If that picturing is not clear to you, think about it for a while. This is an example of the basic relationship in this circle approach.  
图5:2是根据检查项目5:8中的原因a所陈述的关系的图片。那个原因是，'房屋是建筑物。房屋的圆圈在建筑物的圆圈内部表示了在原因λ中断言的房屋和建筑物之间的关系。它显示了房屋是建筑物的事实；也就是说，房屋类别包含在建筑物类别中。如果这种描绘对你来说不清楚，请花一些时间思考。这是圆圈方法中基本关系的一个例子。

Although the word all is not in the original proposition, we draw diagrams as if it were, that is, as if the original were “A// houses are buildings.” It is generally a good idea to do this, unless there is reason from the context not to do so.  
虽然原命题中没有包含"all"这个词，但我们在绘制图表时会假设它存在，也就是说，假设原命题是A//房子是建筑物。通常情况下，这样做是一个好主意，除非上下文中有理由不这样做。

Diagram 5:3 pictures the relationship asserted in reason b, “Buildings are structures.”  
图5:3

Diagram 5:3

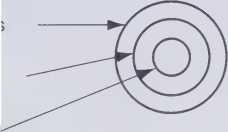


structures

buildings

­ings. The diagrams can be combined, drawing the circle for buildings only once, as in Diagram 5:4, which you could form by placing Diagram 5:2 over Diagram 5:3.Note that Diagrams 5:2 and 5:3 have a circle in common: the circle for buildings. The diagrams can be combined, drawing the circle for buildings only once, as in Diagram 5:4, which you could form by placing Diagram 5:2 over Diagram 5:3.  
请注意，图表5:2和5:3有一个共同的圆：建筑物的圆。可以将这些图表合并，只需绘制一次建筑物的圆，就像图表5:4中所示，你可以将图表5:2放在图表5:3上方形成。

Diagram 5:4



houses

structures

buildings

Notice that by combining the diagrams for the two reasons (a and b), I have made a diagram that shows that the conclusion is inescapable. That is, Diagram 5:4 shows that the circle for houses is unavoidably inside the circle for structures, which is to say that houses are structures. There is no way to avoid diagramming the conclusion, given the diagrams of the reasons.  
请注意，通过将两个原因（a和b）的图表结合起来，我制作了一个显示结论不可避免的图表。也就是说，图表5:4显示，房屋的圆圈无可避免地在结构的圆圈内部，也就是说房屋是结构。鉴于原因的图表，无法避免地要绘制出结论的图表。­clusion, given the diagrams of the reasons.

The Basic Circle-System Validity Test  
基本圆系统有效性测试

The circle diagram exhibits the validity of the argument of Check-Up Item 5:8. It does this by showing that diagramming the reasons forces us to diagram the conclusion. Here is the circle diagram test for deductive validity:  
圆形图表展示了Check-Up项目5:8的论证的有效性。它通过展示将原因进行图表化迫使我们将结论进行图表化来实现这一点。这是演绎有效性的圆形图表测试：

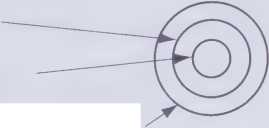
**Can diagramming the reasons force us to diagram the conclusion? If so, the argument is deductively valid. If not, the argument is deductively invalid.   
能够将原因进行图解能够迫使我们将结论进行图解吗？如果是这样，那么这个论证是演绎有效的。如果不是这样，那么这个论证是演绎无效的。**

Apply this test to the next example, Check-Up Item 5:9.  
将此测试应用于下一个示例，检查项目5:9。

1. Motorcycles are vehicles.  
   摩托车是车辆。
2. Vehicles are mechanical contraptions.  
   车辆是机械装置。
3. Therefore, motorcycles are mechanical contraptions.  
   因此，摩托车是机械装置。

­gram is usually enough:Putting the two reasons in the same diagram gives Diagram 5:5. You ordinarily do not need to draw two separate diagrams when combining two reasons. One diagram is usually enough:  
将这两个原因放在同一张图中得到图5:5。当结合两个原因时，通常不需要绘制两个单独的图表。通常一个图表就足够了。

Diagram 5:5



vehicles

motorcycles

mechanical contraptions

Diagram 5:5 shows the argument in Check-Up Item 5:9 to be deductively valid. Diagramming the reasons forced me to diagram the conclusion. The circle for motorcycles is unavoidably included in the circle for mechanical contraptions, which is what the conclusion asserts.  
图5:5显示了检查项目5:9中的论证是演绎有效的。将原因进行图表化迫使我也要对结论进行图表化。摩托车的圆圈不可避免地包含在机械装置的圆圈中，这正是结论所断言的。

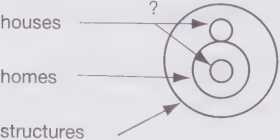
­vant. For example, do not infer from Diagram 5:5 that most mechanical contraptions are vehicles.Do not be influenced by the relative size of the circles. Relative size is irrelevant. For example, do not infer from Diagram 5:5 that most mechanical contraptions are vehicles.  
不要受到圆圈的相对大小的影响。相对大小是无关紧要的。例如，不要从图表5:5推断出大多数机械装置都是车辆。

­lidity. Check-Up Item 5:10 is an invalid argument:Next, I shall show the use of this basic circle system to exhibit deductive invalidity. Check-Up Item 5:10 is an invalid argument:  
接下来，我将展示使用这个基本的圆圈系统来展示演绎无效性。Check-Up Item 5:10是一个无效的论证。

1. Houses are structures.  
   房屋是建筑物。
2. Homes are structures.  
   房屋是建筑物。
3. Therefore, houses are homes.  
   因此，房屋是家。

­sible to diagram the reasons without diagramming the conclusion:Diagram 5:6 shows this argument to be invalid because it shows that it is possible to diagram the reasons without diagramming the conclusion:  
图5:6显示该论证是无效的，因为它表明可以在不画出结论的情况下画出原因的图表。

Diagram 5:6



­clusion. 1 he cιιcle foι houses docs not need to be inside the circle for homes, as isI did lull justice to the reasons, but managed to avoid diagramming the conclusion. 1 he cιιcle foι houses docs not need to be inside the circle for homes, as is shown by the upper one of the alternative circles for houses. That shows the argument to be invalid.  
我对原因做了简略的说明，但设法避免绘制出结论的图表。房屋的圆圈不需要在家庭的圆圈内，就像房屋的另一个替代圆圈的上方所示。这表明该论证是无效的。­ment to be invalid.

The circle for houses could also be in the circle for homes, as is shown by the lower of the alternative circles for houses. This lower circle is not absolutely necessary to show invalidity. But in my experience, most students find that including this sort of thing helps them to feel comfortable with their diagrams.  
房屋的圆圈也可以在家的圆圈中，就像房屋的备选圆圈中的较低圆圈所示。这个较低的圆圈并不是绝对必要的来显示无效性。但根据我的经验，大多数学生发现包括这种类型的内容有助于他们对图表感到舒适。

Summary  
摘要

This basic circle system is useful when we are judging the deductive validity of arguments that involve the relationships of classes. A circle represents a class, and a circle within another circle shows that the smaller is included in the larger. If, after drawing the circle relationships for the reasons in an argument in one diagram, we find that we have unavoidably diagrammed the conclusion, the argument is deductively valid. Otherwise, it is not.  
这个基本的圆圈系统在我们判断涉及类别关系的论证的演绎有效性时非常有用。一个圆圈代表一个类别，一个圆圈在另一个圆圈内表示较小的类别包含在较大的类别中。如果在一个图表中为论证中的理由绘制圆圈关系后，我们发现我们不可避免地在图表中绘制了结论，那么这个论证是演绎有效的。否则，它就不是演绎有效的。­ments ­ing the circle relationships for the reasons in an argument in one diagram, we

The procedure for the basic type of argument we have been considering is first to draw two circles to represent one reason. Then add the other reason to the same diagram, but usually add only one circle because the other circle generally should already be there. This circle for the second reason should go inside or outside the circle that is already there, depending on whether it is included in or includes the other. (They can also overlap and there can be more classes and circles, but those are refinements I shall let you add, if you need to do so.) Then check to see whether the conclusion was also diagrammed and, if so, whether it was unavoidably diagrammed. If it was unavoidably diagrammed, judge the argument deductively valid. If not, it is deductively invalid.  
我们一直在考虑的基本类型的论证程序是首先画两个圆来代表一个理由。然后将另一个理由添加到同一图表中，但通常只添加一个圆，因为另一个圆通常应该已经存在。第二个理由的这个圆应该在已经存在的圆的内部或外部，这取决于它是否包含在其他圆中或包含其他圆。（它们也可以重叠，并且可以有更多的类和圆，但这些是我让你添加的细化内容，如果你需要的话。）然后检查是否也对结论进行了图表化，并且如果是这样，是否是不可避免地进行了图表化。如果是不可避免地进行了图表化，则判断该论证为演绎有效。如果没有，则是演绎无效的。­cle that ­ments ­clusion

The strategy in diagramming an argument is to keep the conclusion in mind and, giving the reasons every chance to show their power, to try not to diagram the conclusion. If the diagramming of the reasons does not inescapably commit us to diagramming the conclusion, the argument is deductively invalid. The strategy in doing these diagrams is to work against the conclusion, but to be fair to it. We are not trying to represent the world as we know it, but rather to represent the requirements of the reasons as stated, and to see what possibilities are still allowed.  
图解论证的策略是要牢记结论，并且给予理由充分的机会展示它们的力量，尽量不去图解结论。如果图解理由并不必然导致我们图解结论，那么这个论证就是演绎无效的。在进行这些图解时的策略是反对结论，但要对其公正。我们不是试图代表我们所知的世界，而是要代表所陈述的理由的要求，并看看仍然允许的可能性有哪些。­­ing

A helpful way to show the deductive invalidity of an argument is to draw alternate circles for a crucial class, with a question mark by the junction of their arrows. One of these circles should be so placed that it denies the conclusion. The other is consistent with the conclusion.  
显示论证的演绎无效的一种有用方法是为一个关键类别绘制替代的圆圈，并在它们的箭头交汇处加上一个问号。其中一个圆圈应该被放置在否定结论的位置。另一个圆圈与结论一致。­

Check-Up 5B

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

5:13 In the circle system, one circle is used to represent a whole proposition.  
在圈子系统中，一个圈子用来表示一个完整的命题。

5:14 To show that Class A is included in Class B, the circle for A is put inside the circle for B.   
为了显示A类包含在B类中，将A的圆圈放在B的圆圈内部。

**5:15 To represent the proposition Turtles are egg layers, the circle for egg layers is put inside the circle for turtles.  
5:15 为了表示乌龟是卵生动物的命题，卵生动物的圆圈被放在乌龟的圆圈内。**

**5:16 If a conclusion is unavoidably diagrammed in the diagramming of the reasons, then the argument is deductively valid.  
如果在推理图表中不可避免地将结论绘制在图表中，那么这个论证是演绎有效的。**

Short Answer  
简答题

Diagram each of the following propositions. Label the diagram. Make sure that the points of the arrows touch the circles to which they point.  
对以下命题进行图解。标记图表。确保箭头的端点接触到它们指向的圆圈。

**5:17** Harleys are motorcycles.

**5:18 Canoes are boats.  
独木舟是船。**

**5:19 Basketballs are spheres.  
5:19 篮球是球形的。**

**5:20 Bananas are magnets.  
5:20 香蕉是磁铁。**

**5:21 Spheres are round objects.  
5:21 球体是圆形的物体。**

**5:22 Magnets are pieces of fruit.  
5:22 磁铁是水果的一部分。**

Here are some deductively valid arguments. Diagram them in a way that shows them to be deductively valid. Label each diagram completely and make sure that the arrow points touch the circles to which they point.  
这里有一些演绎有效的论证。以一种能够显示它们演绎有效的方式进行图示。完整地标记每个图示，并确保箭头指向相应的圆圈。

**5:23 a. Harleys are motorcycles.  
哈雷是摩托车。**

1. Motorcycles are vehicles.  
   摩托车是车辆。
2. Therefore, Harleys are vehicles.  
   因此，哈雷摩托车是车辆。

**5:24 a. Canoes are boats.  
独木舟是船。**

1. Boats are vehicles.  
   船是交通工具。
2. Therefore, canoes are vehicles.  
   因此，独木舟是交通工具。

**5:25 a. Basketballs are spheres.  
5:25 a. 篮球是球形的。**

1. Spheres are round objects.  
   球体是圆形物体。
2. Therefore, basketballs are round objects.  
   因此，篮球是圆形物体。

**5:26 a. Bananas are magnets.  
5:26 a. 香蕉是磁铁。**

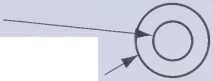
1. Magnets are pieces of fruit.  
   磁铁是水果。
2. Therefore, bananas are pieces of fruit.  
   因此，香蕉是水果。

Subject Class and Predicate Class  
主题类和谓词类

In the proposition “Houses are buildings,” the subject class is houses because houses is the subject of the sentence. The predicate class is buildings, and is in the predicate of the proposition. In propositions like this, the circle for the subject class goes inside of the circle for the predicate class because the proposition says that the subject class is included in the predicate class (the “inside-outside” rule). You can see that this is the way it was drawn in Diagram 5:2. There are exceptions to this inside-outside rule for drawing circles, so be careful. Make sure that the diagram actually represents what is intended. Use the inside-outside rule for drawing circles only as a temporary crutch.   
在命题“房屋是建筑物”中，主类是房屋，因为房屋是句子的主语。谓类是建筑物，并且位于命题的谓语中。在这样的命题中，主类的圆圈在谓类的圆圈内，因为命题说主类包含在谓类中（内外规则）。你可以看到这是在图5:2中绘制的方式。绘制圆圈的内外规则有例外情况，所以要小心。确保图表实际上代表了预期的内容。只将内外规则用于绘制圆圈作为临时支撑。

­sive class is the predicate class, which may be created by changing the predicate to consist of a noun or noun phrase and making sure that either the word Sometimes these classes do not explicitly appear in a proposition, so you often have to transform a proposition in order to create explicit classes. Most often, the elusive class is the predicate class, which may be created by changing the predicate to consist of a noun or noun phrase and making sure that either the word is or the word are is used to connect the two parts of the proposition.  
有时这些类别在命题中并不明确出现，所以你经常需要转换一个命题以创建明确的类别。最常见的情况是谓词类别，可以通过将谓词改为由名词或名词短语组成，并确保使用“is”或“are”来连接命题的两个部分来创建。

For example, the proposition Houses are expensive does not contain a predicate class. There is a subject class, houses, but the word expensive is an adjective, not the label for a class. So, we make a predicate class, perhaps expensive things, and leave the word are between the two parts. Thus, you transform Houses are expensive into Houses are expensive things in order to have two classes connected by an is or are. The new proposition is diagrammable in the circle system, as you can see:  
例如，命题“房子很贵”不包含谓词类。有一个主语类，房子，但是贵这个词是形容词，不是类的标签。因此，我们创建一个谓词类，也许是贵的东西，并在两个部分之间保留are这个词。因此，你将“房子很贵”转化为“房子是贵的东西”，以便有两个由is或are连接的类。新的命题可以在圆圈系统中进行图示，如下所示：

Diagram 5:7

houses

expensive things  
昂贵的东西

*Birds have wings is an example of a sentence without an is or an are. How would you transform that proposition into an is or are relationship between two classes? Circles inside of circles can explicitly represent only an is or are relationship, not a have relationship.  
鸟有翅膀"是一个没有"is"或"are"的句子的例子。你如何将这个命题转化为两个类之间的"is"或"are"关系？圆圈内的圆圈只能明确表示"is"或"are"关系，而不能表示"have*

Here are some possibilities that would work: Birds are winged creatures, Birds are creatures with wings, Birds are things that have wings, and The bird is a winged creature. The main problem is to create a predicate class that does justice to the meaning of the original sentence. I like winged creatures best, so would diagram Birds have wings as follows:  
这里有一些可行的可能性：鸟是有翅膀的生物，鸟是有翅膀的生物，鸟是有翅膀的东西，而鸟是有翅膀的生物。主要问题是创建一个能够体现原句意思的谓词类。我最喜欢有翅膀的生物，所以将“鸟有翅膀”绘制成下面这样：

Diagram 5:8

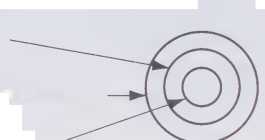
birds

winged creatures  
有翅膀的生物

Sometimes classes are labeled in such a way that the labels do not look like class labels, such as the ostrich and a bird in The ostrich is a bird. The proposition means the same as Ostriches are birds, and is diagrammed in Diagram 5:9.  
有时候，课程的标签可能不像课程标签那样，比如在"The ostrich is a bird"中的鸵鸟和鸟。这个命题的意思与"Ostriches are birds"相同，并在图5:9中进行了图解。

Diagram 5:9

ostriches birds   
鸵鸟

Now try to diagram the following argument, which is Check-Up Item 5:11:  
现在尝试绘制以下论证的图表，这是检查项目5:11。

Example 5:6

1. Birds have wings.  
   鸟有翅膀。
2. The ostrich is a bird.  
   鸵鸟是一种鸟。
3. Therefore, the ostrich has wings.  
   因此，鸵鸟有翅膀。

If necessary, rewrite the argument, perhaps as follows:  
如果需要的话，可以将论点重新写成以下方式：

Example 5:7

1. Birds are winged creatures.  
   鸟是有翅膀的生物。
2. Ostriches are birds.  
   鸵鸟是鸟类。
3. Therefore, ostriches are winged creatures.  
   因此，鸵鸟是有翅膀的生物。

In Example 5:7, each proposition consists of two class terms connected by the word are, so the diagram showing the argument to be deductively valid can be made using only nouns (or noun phrases) as labels. This rewriting step is not necessary, as long as you know that it is implied, and as long as you use class terms to label the circles:  
在例子5:7中，每个命题由两个类别术语连接而成，所以展示推理有效性的图表可以只使用名词（或名词短语）作为标签。这个重写步骤并非必要，只要你知道它是暗示的，并且只要你使用类别术语来标记圆圈。

Diagram 5:10

winged creatures ostriches  
有翅膀的生物鸵鸟

Note that in order to fit the system, the reasons and the conclusion had to be modified. This is common. You will often have to use your ingenuity.  
请注意，为了适应系统，原因和结论必须进行修改。这是常见的情况。您经常需要发挥自己的创造力。

Specific Class Members and Universal Terms  
具体类成员和通用术语

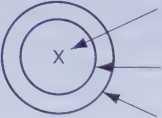
The following argument refers to a specific person, Juan:  
以下论点涉及特定人物胡安：

Example 5:8

1. All of the members of the basketball team are tall.  
   篮球队的所有成员都很高。
2. Juan is a member of the basketball team.  
   Juan是篮球队的成员。
3. Therefore, Juan is tall.  
   因此，胡安很高。

It does not make sense to represent Juan by a circle because Juan is not a class. We can represent him with an X:   
用一个圆圈来代表Juan是没有意义的，因为Juan不是一个类。我们可以用一个X来代表他：

Diagram 5:11



Juan

members of the basketball team

tall people

Note that a predicate class, tall people, had to be created out of the adjective tall.  
请注意，形容词"tall"需要创建一个谓词类"高个子"。

Note also that the words, all of the, are left out of the diagramming of the noun phrase, all of the members of the basketball team. This is because the circle labeled with “members of the basketball team'” automatically represents them all. To say all in the diagram would duplicate what is already said by the circle. The boundaries of a circle contain every one of the group or class that is represented by the circle, so words such as all, every, and each are generally omitted from diagrams. The boundaries do the job these words do in the sentences.  
还要注意，在名词短语的示意图中，诸如“所有的”之类的词被省略了，比如“篮球队的所有成员”。这是因为标有“篮球队成员”的圆圈自动代表了所有成员。在示意图中使用“所有”一词会重复圆圈已经表达的意思。圆圈的边界包含了由圆圈代表的群体或类别中的每个人，因此像“所有的”、“每个”等词通常在示意图中被省略。边界在句子中起到了这些词的作用。

Summary  
摘要

In attempting to represent a sentence by a circle, we sometimes need to transform the proposition so that it connects exactly two classes, using either the word is or the word are. Predicate adjectives must be transformed into nouns, and other verbs than is or are must be changed in a way that captures the meaning of the original proposition. Doing this often makes the result somewhat different from the ways we ordinarily speak, so the result should usually be converted back to ordinary speech.  
在试图用一个圆圈来表示一个句子时，我们有时需要转换命题，使其连接恰好两个类别，可以使用is或are这两个词。谓语形容词必须转换为名词，而除了is或are之外的其他动词必须以捕捉原始命题意思的方式进行改变。这样做通常会使结果与我们通常说话的方式有所不同，因此通常应将结果转换回普通语言。­sition. Doing this often makes the result somewhat different from the ways we ordi­narily speak, so the result should usually be converted back to ordinary speech.

A member of a class is represented by an X. Universal terms such as all, every, and each are generally left out of diagrams because their meaning is already conveyed by the boundaries of the circles.  
一个类的成员由X表示。普遍术语，如全部、每个和每一个，通常在图表中被省略，因为它们的含义已经通过圆圈的边界传达了。

If you do not make these transformations—at least mentally—then when things get complex, as they will, confusion will often result.  
如果你不进行这些转变，至少在心理上，那么当事情变得复杂时，就会经常产生困惑。

Check-Up 5C

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**5:27 In a standard class-inclusion proposition, the subject class is represented by the inner circle.  
5:27 标准的包含类命题中，主题类由内部圆表示。**­sented by the inner circle.

**5:28 Putting one circle inside another indicates that the class represented by the inner circle is included in the class represented by the outer circle.  
5:28 将一个圆放在另一个圆内表示内圆所代表的类别包含在外圆所代表的类别中。**

**5:29 Before diagramming a proposition like chairs can burn, one must at least mentally transform the proposition into a proposition composed of two classes (represented by nouns or noun phrases) connected by the word is or the word are.   
5:29 在绘制像椅子可以燃烧这样的命题之前，至少要在心里将命题转化为由两个类别（由名词或名词短语表示）通过is或are连接的命题。**

5:30 The proposition Grasshoppers can fly is in the recommended idealized form ready to be diagrammed.  
5:30 草蜢可以飞的命题处于推荐的理想化形式，可以进行图解。

5:31 The subject of the proposition All office chairs are uncomfortable is represented in a diagram by the words office chairs, the word all being omitted.  
5:31 这个命题的主题是办公椅都不舒服，在图表中用办公椅这个词来表示，省略了所有这个词。

Short Answer  
简答题

Here are some propositions to practice diagramming. Diagram each and label the parts in foil with nouns or noun phrases. Make sure that the arrows touch the circles.  
这里有一些用来练习绘图的命题。将每个命题绘制成图表，并用名词或名词短语在箔纸上标注各个部分。确保箭头与圆圈相连。

5:32 All the chairs in this room are wooden.  
这个房间里的所有椅子都是木制的。

5:33 All wooden things can burn.  
所有木制物品都可以燃烧。

5:34 Raoul plays soccer.

5:35 All soccer players are in good physical shape.  
5:35 所有足球运动员身体状况良好。

Here are some more deductively valid arguments. Diagram them (using circles) in a way that shows them to be deductively valid. Label the diagrams completely.  
这里有一些更多的演绎有效的论证。用圆圈的方式将它们绘制成图表，以显示它们的演绎有效性。完整地标记这些图表。

5:36 a. All parallelograms are quadrilaterals.  
所有平行四边形都是四边形。

1. All quadrilaterals are plane figures.  
   所有四边形都是平面图形。
2. Therefore, all parallelograms are plane figures.  
   因此，所有平行四边形都是平面图形。

5:37 a. All the chairs in this room are wooden.  
这个房间里的所有椅子都是木制的。

1. All wooden things can burn.  
   所有木制品都可以燃烧。
2. Therefore, all the chairs in this room can burn.  
   因此，这个房间里的所有椅子都可以燃烧。

5:38 a. Raoul plays soccer.  
5:38 a. Raoul踢足球。

1. All soccer players are in good physical shape.  
   所有足球运动员身体状况良好。
2. Therefore, Raoul is in good physical shape.  
   因此，Raoul身体状况良好。

5:39 a. Magic Mountain is by Thomas Mann.  
5:39 a. Magic Mountain is by Thomas Mann.

1. All of Thomas Mann’s books are good.  
   托马斯·曼的所有书都很好。
2. Therefore, Magic Mountain is a good book.  
   因此，魔法山是一本好书。

The following deductively valid arguments are written in more natural form. For each, (a) state the conclusion and (b) make a circle diagram of the argument to show it to be deductively valid. Make sure that the diagram is properly labeled.  
以下推理有效的论证以更自然的形式书写。对于每个论证，(a)陈述结论，(b)绘制一个圆形图表以显示其推理有效。确保图表标签正确。

5:40 All mayors are politicians. Nobody can doubt that. Furthermore, all politicians are deeply concerned about taxes. Therefore, all mayors are deeply concerned about taxes.  
5:40 所有市长都是政治家。没有人能怀疑这一点。此外，所有政治家都对税收问题深感关切。因此，所有市长都对税收问题深感关切。

5:41 Because Sarah Washington is a mayor, and all mayors are deeply concerned about taxes, it must be true that Sarah Washington is deeply concerned about taxes.  
5:41 因为Sarah Washington是一位市长，而所有市长都非常关心税收，所以Sarah Washington肯定非常关心税收。­cerned about taxes, it must be true that Sarah Washington is deeply concerned about taxes.

5:42 All literary works that have fascinated me have had an influence on my life. Because all of Chekhov’s short stories have fascinated me, they have all had an influence on my life.   
5:42 所有让我着迷的文学作品都对我的生活产生了影响。因为所有的契诃夫的短篇小说都让我着迷，它们都对我的生活产生了影响。

5:43 All unwanted plants are weeds. We do not want the wheat in our corn field. Therefore, those wheat plants are weeds.  
5:43 所有不需要的植物都是杂草。我们不希望玉米地里有小麦。因此，那些小麦植物是杂草。

5:44 Anything that interferes with people’s desires is unjust. Because zoning interferes with people’s desires, it is certainly unjust.  
任何干涉人们欲望的事物都是不公正的。因为分区干涉了人们的欲望，所以它肯定是不公正的。

5:45 Anything that promotes the good life is just. Because zoning promotes the good life, it is just.  
5:45 任何促进美好生活的事物都是公正的。因为分区促进了美好生活，所以它是公正的。

Exclusion  
排除

­resented by two completely separate circles. For example, the proposition Just as class inclusion is represented by one circle inside another, class exclusion is represented by two completely separate circles. For example, the proposition No vehicles are permitted could be represented this way:  
正如类别包含由一个圆圈在另一个圆圈内表示，类别排除由两个完全分离的圆圈表示。例如，命题“不允许任何车辆”可以用这种方式表示：

Diagram 5:12



vehicles

things that are permitted

Diagram 5:12 says that the class of vehicles is excluded from the class of things that are permitted. Now try to diagram the argument of Example 5:9, which you have seen as Check-Up Item 5:12:  
图表5:12表明车辆类别被排除在允许的事物类别之外。现在尝试绘制你在检查项目5:12中看到的示例5:9的论证图表。

Example 5:9

1. No vehicles are permitted.  
   不允许车辆通行。
2. Motorcycles are vehicles.  
   摩托车是车辆。
3. Therefore, no motorcycles are permitted.  
   因此，不允许摩托车。

Try to diagram Example 5:9 before you read further.  
在继续阅读之前，请尝试绘制示例5:9的图表。

Diagram 5:13 exhibits the deductive validity of Example 5:9:  
图5:13展示了示例5:9的演绎有效性。

Diagram 5:13



vehicles —

motorcycles

things that are permitted

In drawing Diagram 5:13, I first drew the first reason by drawing two separate circles: one for vehicles and one for things that are permitted. Then I drew the circle for motorcycles inside the circle for vehicles, as required by the second reason. This unavoidably put the circle for motorcycles totally separate from the circle for things that are permitted, which is what the conclusion says. Therefore, the conclusion is inescapably diagrammed by diagramming the reasons, so the argument is deductively valid.   
在绘制图5:13时，我首先通过绘制两个分开的圆圈来绘制第一个原因：一个是车辆，一个是允许的事物。然后，根据第二个原因的要求，在车辆的圆圈内绘制了摩托车的圆圈。这不可避免地将摩托车的圆圈与允许的事物的圆圈完全分开，这正是结论所说的。因此，结论通过绘制原因来不可避免地被图示化，所以这个论证是演绎有效的。

Nonmembership  
非会员

Like exclusion, nonmembership is shown by putting the X for an individual outside of a circle. See Diagram 5:14 for one way to diagram the proposition Joan’s bike is not permitted.  
与排除类似，非成员通过将个体的X放在一个圆圈外来表示。参见图5:14，其中展示了一个描述Joan的自行车不被允许的方式。

Diagram 5:14



Joan's bike ►- X

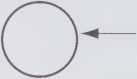
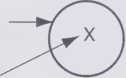
things that are permitted

In Example 5:10, the proposition diagrammed in Diagram 5:14, Joan’s bike is not permitted, is the conclusion:  
在示例5:10中，图表5:14中所示的命题，琼的自行车是不允许的，结论是：

Example 5:10

1. No motorcycles are permitted.  
   不允许摩托车。
2. Joan’s bike is a motorcycle.  
   乔安的自行车是一辆摩托车。
3. Therefore, Joan’s bike is not permitted.  
   因此，Joan的自行车不被允许。

As shown by Diagram 5:15, this conclusion is inescapable, given the reasons, so the argument is deductively valid.  
根据图5:15所示，鉴于原因，这个结论是不可避免的，因此这个论点在逻辑上是有效的。

Diagram 5:15

things that are permitted

motorcycles  
摩托车

Joan's bike

*Invalid and Valid: Terms of Condemnation  
无效和有效：谴责的条款*

and Commendation  
和表彰

In deductive logic books and courses, it is common practice to use the words invalid and valid without their being preceded by the word deductively. This practice is confusing to many people because in everyday speech, invalid by itself is a general term of condemnation of arguments and statements, and valid by itself a general term of commendation. So, it will seem to many people that, when these words are used, general commendation or condemnation is claimed. If so, and the word deductively is not used, it might then seem that we are invited to condemn all deductively invalid arguments, even if they are good arguments (like the prosecutor’s and the pathologist’s). It might also seem that we are invited to commend deductively valid but cir cular arguments (arguments that make no progress), and deductively valid arguments that have false reasons and that are offered in support of their conclusions. These invitations should be refused.  
在演绎逻辑的书籍和课程中，常常习惯性地使用无需前置词“演绎地”来修饰“无效”和“有效”这两个词。这种做法对许多人来说很困惑，因为在日常语言中，“无效”本身是对论证和陈述的一般性谴责，而“有效”本身则是一种一般性的赞扬。因此，对许多人来说，当使用这些词时，似乎在声称一般性的赞扬或谴责。如果是这样，并且没有使用“演绎地”这个词，那么似乎我们被邀请谴责所有演绎无效的论证，即使它们是好的论证（比如检察官和病理学家）。似乎还被邀请赞扬演绎有效但循环论证（没有进展的论证），以及演绎有效的论证，其理由是错误的，并且是为了支持它们的结论而提出的。这些邀请应该被拒绝。­fusing to many people because in everyday speech, ­gist’s). It might also seem that we are invited to commend deductively valid but cir­­tations should be refused.

To avoid confusion in deductive logic, 1 place the word deductively in front of the words invalid and valid (unless I actually do mean general condemnation or commendation). I urge you to do likewise, even though it is sometimes more convenient to omit the word deductively. Deductive validity is not automatic success and deductive invalidity is not automatic failure.  
为了避免演绎逻辑上的混淆，1将词语演绎地放在无效和有效的前面（除非我确实是指普遍的谴责或赞扬）。我敦促你也这样做，即使有时省略词语“演绎”更方便。演绎有效并不意味着自动成功，演绎无效也不意味着自动失败。­venient to omit the word

Summary and Comment  
摘要和评论

Class exclusion is represented by drawing circles separate from each other. Similarly, nonmembership can be represented by placing the X for the nonmember outside of the circle for the class of which it is not a member.  
类别排除通过将圆圈分开来表示。同样，非成员可以通过将非成员的X放在它不是成员的类别的圆圈之外来表示。

Because valid and invalid are in everyday speech taken to be general words for commendation and condemnation of arguments, it is best to attach the word deductively to them when we are talking about deductive validity and invalidity. Otherwise, confusion can result.  
因为有效和无效在日常语言中被视为对论证的称赞和谴责的普遍词汇，所以在谈论演绎有效性和无效性时，最好将演绎这个词与它们结合起来。否则，可能会导致混淆。*­tively*

­lapping circles.There are many other refinements for the circle system, including using overlapping circles.[footnoteRef:7] But this introduction should get you started. Develop your own adaptations of these ideas. No system will answer all questions. You need to ask yourself continuously, “Does what I am doing make sense in this situation?”  
圆系统还有许多其他的改进方法，包括使用重叠的圆圈[7]。但是这个介绍应该能让你入门。发展出你自己对这些想法的适应方式。没有一个系统能回答所有问题。你需要不断问自己，在这种情况下我所做的是否有意义？[[6]](#footnote-6)­self continuously, “Does what I am doing make sense in this situation?”

Check-Up 5D

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**5:46 Class exclusion can be represented by drawing two circles separated from each other.  
5:46 课堂排斥可以通过绘制两个相互分离的圆圈来表示。**

**5:47 Class nonmembership can be shown by drawing an X inside the class of which the individual is not a member.  
5:47 类的非成员可以通过在该个体不是成员的类内画一个X来表示。**

**5:48 You will sometimes need to make adaptations of the presented circle system to fit your situation.  
有时候，您需要根据您的情况对所呈现的圆形系统进行调整。**

**5:49 If it is possible to diagram the reasons without diagramming the conclusion, then the argument is deductively invalid.  
如果可以在不绘制结论的情况下绘制原因的图表，则该论证是演绎上无效的。**­clusion, then the argument is deductively invalid.

**5:50 In diagramming an argument, if it is possible to avoid diagramming the conclusion, then you must show this possibility.   
5:50 在绘制论证图时，如果可以避免绘制结论，则必须显示这种可能性。**

­tively valid.5:51 If it is possible to diagram the conclusion, then the argument is deductively valid.  
如果可以将结论绘制成图表，则该论证是演绎有效的。

5:52 Any argument that is deductively valid is a good argument.  
5:52 任何演绎有效的论证都是一个好的论证。

5:53 Any argument that is deductively invalid is a bad argument.  
5:53 任何演绎无效的论证都是一个糟糕的论证。

5:54 In this book, the word valid means deductively valid.  
在这本书中，有效一词意味着演绎有效。

5:55 Using invalid to mean deductively invalid can be confusing to most people.  
5:55 使用无效来表示演绎无效可能会让大多数人感到困惑。

Short Answer  
简答题

For each of the following deductively valid arguments, (a) state the conclusion and (b) draw a diagram of the argument that shows it to be deductively valid, making sure that the labels are perfectly clear.  
对于以下每个推理有效的论证，(a)陈述结论，(b)绘制一个显示其为推理有效的论证的图表，确保标签非常清晰。

5:56 No dogs are permitted in the park. Because Mike is a dog, he is not permitted in the park.  
5:56 公园内不允许携带狗。因为Mike是一只狗，所以他不被允许进入公园。

­line from this can is not permitted in this tank because the gasoline from this can is leaded gasoline.5:57 No leaded gasoline is permitted in this fuel tank. Therefore, the gasoline from this can is not permitted in this tank because the gasoline from this can is leaded gasoline.  
5:57 不允许在这个燃油箱中使用含铅汽油。因此，这个罐子里的汽油不允许放入这个燃油箱中，因为这个罐子里的汽油是含铅汽油。

5:58 Nobody under thirty-five years of age can be president. Because Tina is under thirty-five years of age, she cannot be president.  
5:58 无论谁年龄在三十五岁以下都不能成为总统。因为蒂娜年龄在三十五岁以下，所以她不能成为总统。

5:59 Twenty-year-olds are not eligible to vote. Mirabelle is twenty, so she is ineligible to vote.  
5:59 二十岁的人不具备投票资格。Mirabelle 二十岁，所以她没有资格投票。

5:60 It is clear that Sharon will have to pay the full admission price. This is because she is over eleven, and nobody over eleven does not pay the full admission price.  
5:60 很明显，Sharon将不得不支付全价门票。这是因为她超过了十一岁，而超过十一岁的人都需要支付全价门票。

5:61 Henry, on the other hand, will not pay the full admission price because he is eleven, and nobody who is eleven (or under) pays the full admission price.  
然而，亨利将不需要支付全价入场费，因为他才十一岁，而且任何十一岁（或以下）的人都不需要支付全价入场费。

5:62 Nothing written by that bureaucrat makes any sense. Because Regulation EZCOMP will be written by that bureaucrat, it will not make any sense.  
5:62那个官僚写的东西毫无意义。因为规章EZCOMP将由那个官僚编写，所以它将毫无意义。

5:63 The canteen is not open today. I am sure of this because no stores are open today and  
5:63 今天食堂不开放。我确定这一点，因为今天没有任何商店开放。

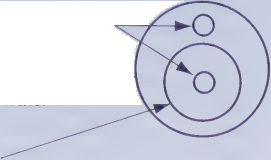
[An additional challenge for you in this item is to fill in a reason that would make the argument deductively valid. Identifying this likely assumption gives you a glimpse of this activity, which is discussed in Chapter 7.]

More Short Answer  
更多简短回答

For each of the following arguments, (a) state the conclusion and (b) make and label a diagram that shows the argument to be deductively invalid. As a reminder of a way to exhibit deductive invalidity, the first is done as an example.  
在这个项目中，给你的另一个挑战是填写一个能使论证演绎有效的理由。识别出这个可能的假设会让你一窥这个活动，该活动在第七章中有所讨论。更多简答题对于以下每个论证，(a)陈述结论并且(b)制作并标记一个图表来展示论证的演绎无效性。作为展示演绎无效性的一种方式的提醒，第一个例子已经完成。

5:64 Alligators are vertebrates that live in and out of water. But we know very well that amphibians are vertebrates that live in and out of water. Therefore, alligators are amphibians.   
鳄鱼是生活在水中和陆地上的脊椎动物。但我们非常清楚两栖动物是生活在水中和陆地上的脊椎动物。因此，鳄鱼是两栖动物。

**a. Conclusion: Alligators are amphibians b.  
结论：鳄鱼是两栖动物。**

9 alligators

vertebrates that live in and out of water  
在水中和陆地上生活的脊椎动物。

amphibians  
两栖动物

5:65 People under eighteen are not permitted to vote. Because Mark is not permitted to vote, he is under eighteen.  
18岁以下的人不得投票。因为马克不得投票，所以他未满18岁。

5:66 All good communists are opposed to the reelection of the governor. Because the members of the action committee are opposed to the reelection of the governor, the members of the action committee are good communists.  
所有好的共产主义者都反对州长的连任。因为行动委员会的成员反对州长的连任，行动委员会的成员都是好的共产主义者。

5:67 Nobody in the in-group rides a three-speed bicycle. Nobody who rides a three-speed bicycle is careless with our energy supply. From this we can see that nobody in the in-group is careless with the energy supply.  
5:67 没有任何内部成员骑三速自行车。骑三速自行车的人对我们的能源供应不会粗心大意。由此可见，内部成员没有人对能源供应粗心大意。

­cal thinkers because they are unanimously in favor of the new zoning law.5:68 People who think critically are in favor of the new zoning law. From this, it follows that the members of the planning commission are critical thinkers because they are unanimously in favor of the new zoning law.  
5:68 批判性思考的人支持新的分区法。由此可推断，规划委员会的成员是批判性思考者，因为他们一致支持新的分区法。

5:69 Propositions that have been proved beyond a reasonable doubt are true. Because the proposition that the defendant was not justified in using the force she used has not been proven beyond a reasonable doubt, that proposition is not true. (Hint: Use types of propositions for your classes, such as true propositions and propositions that have been proven beyond a reasonable doubt.  
已经被证明无可置疑的命题是真实的。因为被告不被证明无可置疑地没有理由使用她所使用的力量的命题不是真实的。（提示：为你的类使用命题类型，如真实命题和已被证明无可置疑的命题。）

More Short Answer  
更多简短回答

For each of the following arguments, (a) state the conclusion, (b) make a labeled circle diagram of the argument exhibiting whether it is valid or invalid, and (c) report your judgment with the words deductively valid (or DV) or deductively invalid (or DI).  
对于以下每个论证，(a)陈述结论，(b)制作一个带有标签的圆圈图表来展示论证的有效性或无效性，(c)用"演绎有效"（或DV）或"演绎无效"（或DI）来报告您的判断。

5:70 All squares have four right angles. Figure ABCD is a square. Therefore, figure ABCD has four right angles.  
所有的正方形都有四个直角。图形ABCD是一个正方形。因此，图形ABCD有四个直角。

5:71 All nearsighted people have difficulty seeing things far away. John has difficulty seeing things far away. Therefore, he is nearsighted.  
5:71 所有近视的人都难以看清远处的东西。约翰难以看清远处的东西。因此，他是近视。

5:72 Birds that are unable to fly are fast runners. The penguin is a bird that is unable to fly. From this it follows that the penguin is a fast runner.  
5:72 不能飞的鸟类是快速奔跑的。企鹅是一种不能飞的鸟类。由此可推断出企鹅是一种快速奔跑的动物。

5:73 Indices used to show trends in productivity should take into account changes in the cost of living. The percent increase in the Gross Domestic Product is an index used to show trends in productivity. Therefore, that index should take into account changes in the cost of living.  
应该考虑生活成本的变化来显示生产力趋势的指数。国内生产总值的百分比增长是用来显示生产力趋势的指数。因此，该指数应该考虑生活成本的变化。

5:74 The first few sentences in Marc Antony’s speech to the people of   
5:74 马克·安东尼对人民的演讲中的前几句话

Rome should be combined because these sentences are short, and short sentences should always be combined.  
罗马应该合并，因为这些句子很短，而且短句子应该总是合并。

5:75 The practice of lay investiture weakened the church. Practices weakening the church were opposed by the papacy. Therefore, there is no doubt that the practice of lay investiture was opposed by the papacy.  
5:75 世俗授职的实践削弱了教会。削弱教会的实践受到教皇的反对。因此，毫无疑问，世俗授职的实践受到了教皇的反对。­

5:76 An equilateral polygon inscribed in a circle is a regular polygon. ABCDE is a regular polygon. From this we know that ABCDE is an equilateral polygon inscribed in a circle.  
5:76 一个内切于圆的等边多边形是一个正多边形。ABCDE是一个正多边形。由此我们知道ABCDE是一个内切于圆的等边多边形。

5:77 Electric bells in complete circuits ring loudly. The front doorbell is in a complete circuit. Therefore, although we cannot hear it from here, it must be ringing loudly.  
5:77 完整电路中的电铃会响得很响。前门铃是一个完整电路。因此，虽然我们听不到这里的声音，但它一定在响得很响。

5:78 People who are not trusted by the American people are not elected president. Marguerite Blank is trusted by the American people. Therefore, she will win the presidential election.  
5:78 美国人民不信任的人不会当选总统。玛格丽特·布兰克得到美国人民的信任。因此，她将赢得总统选举。

5:79 Blaine was not trusted by the American people. This fact follows from the fact that the American people do not elect people whom they do not trust and the fact that they did not elect him.  
布莱恩不受美国人民信任。这个事实源于美国人民不会选举他们不信任的人，而且他们没有选举他。

5:80 Complementary colors are pairs of colors that, when combined, appear to be white. Blue and yellow are a pair of complementary colors. From this, you can predict that blue and yellow, when combined, will appear to be white.  
5:80 互补色是一对颜色，当它们混合在一起时，看起来是白色的。蓝色和黄色是一对互补色。由此可推测，蓝色和黄色混合在一起时，会呈现出白色。

5:81 Let us assume that plants and animals that are not closely related cannot be crossed to produce hybrids. Because the two species that we have been studying (let us call them X and T) are closely related, they can be crossed to produce hybrids.  
5:81 让我们假设不密切相关的植物和动物无法杂交繁殖。因为我们一直在研究的这两个物种（我们称之为X和T）密切相关，所以它们可以杂交繁殖。­not be crossed to produce hybrids. Because the two species that we have been studying (let us call them

5:82 I have concluded that Mary does not know the rules of punctuation. Here’s why: People who know the rules of punctuation do well in their written compositions. But Mary does not do well in her written composition, so my conclusion follows.  
我得出结论，玛丽不懂标点符号的规则。原因如下：了解标点符号规则的人在写作中表现良好。但是玛丽在她的写作中表现不佳，所以我的结论成立。

5:83 All heretics were condemned, but no true believers were heretics. Therefore, no true believers were condemned.  
5:83 所有异端都被谴责，但没有真正的信徒是异端。因此，没有真正的信徒被谴责。

5:84 “. . . none of woman born shall harm Macbeth.” But “Macduff was from his mother’s womb untimely ripp’d.” Therefore, Macduff shall harm Macbeth.  
5:84 . . . 没有一个由女人生育的人会伤害麦克白。但麦克达夫是在他母亲的子宫中被迫提前剖腹而出生的。因此，麦克达夫将会伤害麦克白。

Suggested Answers for Chapter 5  
第五章的建议答案

*Note: Different diagrams from those suggested are often at least as good as the ones given. If yours differ from the ones suggested, then either try to satisfy yourself that yours are all right, or figure out why not.  
注意：与建议的不同的图表通常至少与给出的图表一样好。如果您的图表与建议的不同，请尝试使自己满意，或弄清原因。*

**Check-Up 5A**

5:1 T 5:2 T 5:3 F 5:4 F 5:5 F 5:6 T 5:7 T

5:3 Deductive validity is not equivalent to proof beyond a reasonable doubt; the inference part of deductive validity is more demanding, but   
5:3 演绎有效性并不等同于合理怀疑之外的证明；演绎有效性的推理部分要求更高，但是

-■ the establishment of the reasons part is much less demanding—actually not demanding at all.  
建立原因部分要求较低，实际上根本不需要要求。

**5:4 Deductively invalid arguments can have true conclusions.  
5:4 推理无效的论证可以有真实的结论。**

**5:5 Deductively valid arguments can have false conclusions when they have false reasons.  
5:5 演绎有效的论证在存在错误的理由时可能会有错误的结论。**

**5:8** Deductively valid

**5:9** Deductively valid

**5:10** Deductively invalid

**5:11** Deductively valid

**5:12** Deductively valid

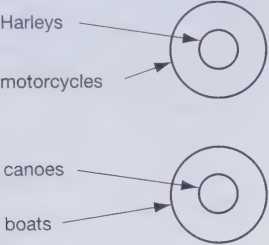
**Check-Up 5B**

5:13 F 5:14 T 5:15 F 5:16 T

**5:13 In the circle system, propositions are represented by circles and Xs.  
在圆圈系统中，命题由圆圈和X表示。**

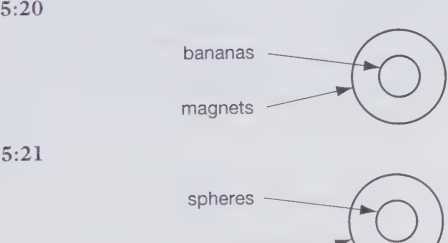
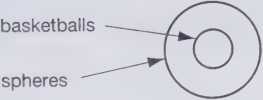
**5:15 To represent the proposition Turtles are eP[∏ layers, the circle for turtles is put inside the circle for egg layers.  
5:15 为了表示命题“乌龟是eP[∏层”的意思，乌龟的圆圈被放在蛋层的圆圈内部。**

**5:17**

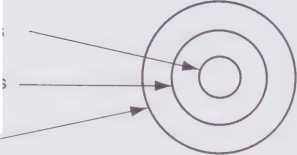
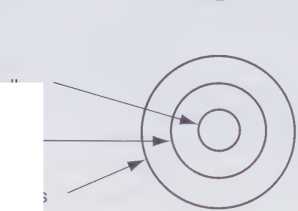
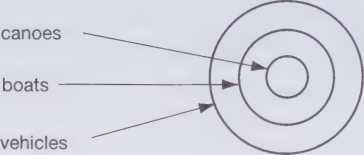
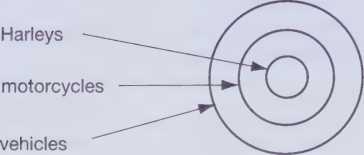
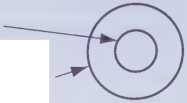


**5:18**

5:19



round objects



*5:22*

magnets

pieces of fruit

**5:23**

**5:24**

**5:25**

basketballs

spheres

round objects

5:26

pieces of fruit

bananas

magnets

Check-Up 5C

5:27 T 5:28 Γ 5:29 T 5:30 F 5:31 T

**5:30 1 he proposition Grasshoppers arc flyinp creatures '∖s in the recommended idealized form, ready to be diagrammed.   
5:30 1 he proposition Grasshoppers arc flyinp creatures '∖s in the recommended idealized form, ready to be diagrammed.**­mended idealized form, ready to be diagrammed.

|  |  |
| --- | --- |
| **5:32** | chairs in this room - *f* >v  wooden things —" '^^^'^ ∖ *J* |
| **5:33** | wooden things ∕z^ x∖  combustible objects |
| **5:34** | Raoul - ∕" "X  f\*- × I  soccer players *∖ J* |
| **5:35** | soccer players —- X^ "X  people in good physical shape *J* |
| **5:36** | parallelograms ∖ X  quadrilaterals l>A *∖—' J ∣*  plane figures ∖ / |
| **5:37** | chairs in this room ∕λ ✓—-xχ X  wooden things I \*A X-× *} I*  combustible things / |
| **5:38** | Raoul  *' f* soccer players  I ^ I I |

people in good physical shape  
身体状况良好的人们

**5:39**

*∖ / Magic Mountain*

*∣ ( χ* books by Thomas Mann

*∖ S y* good books

**5:40 a. Conclusion: All mayors are deeply concerned about taxes, b.  
5:40 a. 结论：所有市长都对税收深感关切，b.**

≡

mayors  
市长

politicians  
政治家

people deeply concerned about taxes  
人们对税收深感关切

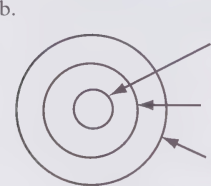
**5:41 a. Conclusion: Sarah Washington is deeply concerned about taxes, b.  
5:41 a. 结论：Sarah Washington对税收问题非常关注，b.**

≡

Sarah Washington

mayors  
市长

' people deeply concerned about taxes  
人们对税收深感关切

5:42 a. Conclusion: All Chekhov’s short stories have had an influence  
5:42 a. 结论：所有的契诃夫短篇小说都产生了影响

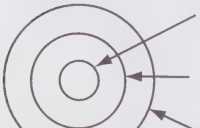
on my life.

Chekhov's short stories

things that influenced my life

literary works that fascinated me  
迷住我的文学作品

**5:43 a. Conclusion: Those wheat plants are weeds, b.  
5:43 a. 结论：那些小麦植物是杂草，b.**



the wheat in our cornfield

unwanted plants

weeds

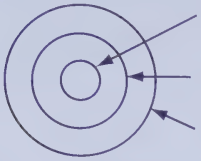
Conclusion: Zoning is unjust.  
结论：分区是不公正的。

**5:44 a.**

b.

**5:45 a.**

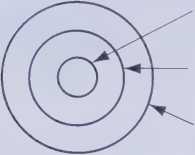
b.

things that interfere with people's desires  
干扰人们欲望的事物

zoning

unjust things

Conclusion: Zoning is just.  
结论：分区是公正的。

zoning  
分区

things that promote the good life  
促进美好生活的事物

just things  
只是事物

**Chcck-Up 5D**

**5:46 T 5:47 F 5:48 T 5:49 T 5:50 T 5:51 F**

5:52 F 5:53 F 5:54 F 5:55 T

5:47 Class nonmembership can be shown by drawing an X outside the class of which the individual is not a member.  
5:47 类的非成员可以通过在该个体不是成员的类外画一个X来表示。

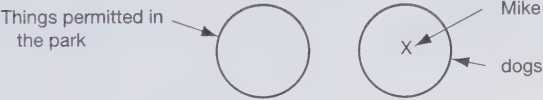
5:51 The possibility of diagramming the conclusion does not ensure deductive validity.  
5:51 图表化结论的可能性并不能确保演绎有效性。­

**5:52 Good arguments need not be deductively valid.  
5:52 好的论点不一定需要演绎有效。**

**5:53 Some good arguments are deductively invalid.  
有些好的论点是演绎上无效的。**

**5:54 In this book and in everyday language, the word valid by itself does not mean deductively valid.  
在这本书和日常语言中，单独使用的词语valid并不意味着演绎有效。**

**5:56 a. Conclusion: Mike is not permitted in the park.  
5:56 a. 结论：迈克不被允许进入公园。**

1. 

5:57 a. Conclusion: The gasoline from this can is not permitted in this tank.  
5:57 a. 结论：这个罐子里的汽油不允许放入这个油箱。

b.



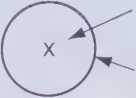
things permitted in  
this tank

gasoline from this can

leaded gasoline

*Note: The gasoline from this can could have been represented with an X instead of a circle. It does not matter.  
注意：这个罐子里的汽油可以用X代替圆圈来表示，这无关紧要。*

5:58 a. Conclusion: Tina cannot be president, b.  
5:58 a. 结论：Tina不能成为总统，b.

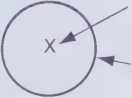


people who can be president

Tina

people under 35

5:59 a. Conclusion: Mirabelle is ineligible to vote, b.  
5:59 a. 结论：Mirabelle 无资格投票，b.

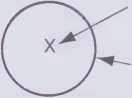
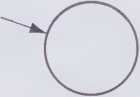


People eligible to vote

Mirabelle

twenty-year olds

5:60 a. Conclusion: Sharon will have to pay the full admission price, b.  
5:60 a. 结论：Sharon将需要支付全额门票价格，b.

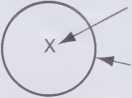


people who do not pay full admission price

Sharon

people over eleven

5:61 a. Conclusion: Henry will not have to pay the full admission price, b.  
结论：亨利不需要支付全额门票价格。

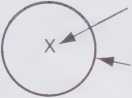


people who pay full admission price

Henry

people eleven or younger

5:62 a. Conclusion: Regulation EZCOMP will not make any sense, b.  
5:62 a. 结论：调节EZCOMP毫无意义, b.

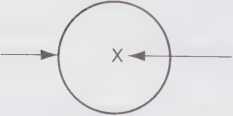


things that make sense

regulation EZCOMP

things written by that bureaucrat

5:63 a. Conclusion: The canteen is not open today.  
5:63 a. 结论：今天食堂不开放。



stores

the canteen

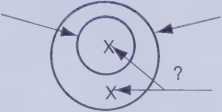
open establishments

1. Unstated reason, or assumption: The canteen is a store.  
   未明示的原因或假设：食堂是一家商店。

5:64 Done in text as an example.  
作为示例，以文本形式完成。

5:65 a. Conclusion: Mark is under eighteen.  
结论：马克未满十八岁。

b.



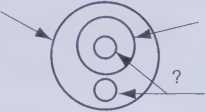
people under eighteen

people not permitted to vote

Mark

**5:66 a. Conclusion: The members of the action committee are good communists.  
5:66 a. 结论：行动委员会的成员是优秀的共产主义者。**

b.



people opposed to re­election of governor

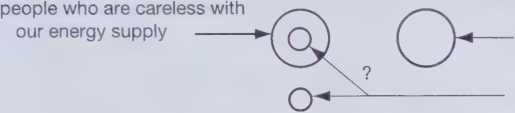
good communists

members of the

Action Committee

5:67 a. Conclusion: Nobody in the in-group is careless with the energy supply.  
5:67 a. 结论：内部群体中没有人对能源供应不慎重。

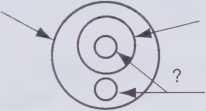
b.



people who ride three- speed bicycles

people in the in-group

**5:68 a. Conclusion: The members of the planning commission are critical thinkers, b.  
结论：规划委员会的成员是批判性思维者。**­cal thinkers, b.

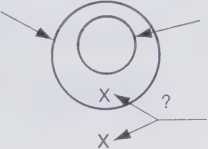


people in favor of new zoning law

people who think critically

members of the Planning

Commission



propositions that are true

**5:69 a. Conclusion: The proposition that the defendant was not justified in using the force she used is not true.  
结论：被告在使用她所使用的力量时没有正当理由的主张是不正确的。**

b.

propositions that have been proved beyond a reasonable doubt  
已经被证明超出合理怀疑的命题

the proposition that the defendant was not justified in using the force she used  
被告在使用她所使用的武力时没有合理理由。

5:70 a. Conclusion: Figure ABCD has four right angles  
结论：图形ABCD有四个直角。

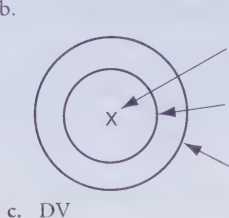


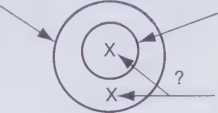
figure ABCD

squares

figures with four right angles

5:71 a. Conclusion: John is nearsighted.  
结论：约翰是近视。

b.



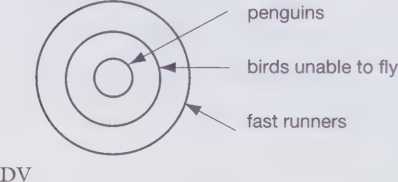
people with difficulty seeing things far away

nearsighted people

John

c. DI

5:72 a. Conclusion: The penguin is a fast runner, b.  
结论：企鹅是一个快速奔跑的动物。



5:73 a. Conclusion: The percent increase in the Gross Domestic Product is an index that should take into account changes in the cost of living.  
结论：国内生产总值的百分比增长是一个应该考虑生活成本变化的指标。

∕'''./■ the Gross Domestic Product index

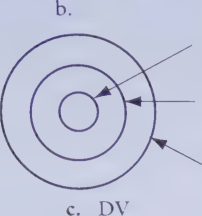
I ∣ — indices used to show trends in productivity  
我 ∣ — 用于显示生产力趋势的指数

*∖ x\*∙ ' y* "\*∖ indices that should take into account changes

in the cost of living ' in the cost of living  
生活成本中的

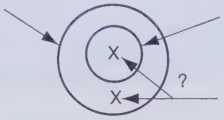
1. DV

5:74 a. Conclusion: The first few sentences in Marc Antony’s speech to the people of Rome should be combined.  
结论：马克·安东尼在罗马人民面前的演讲中的前几句话应该合并。

the first few sentences of Marc Anthony's speech sentences that should be combined  
马克·安东尼演讲的前几句话应该合并。

short sentences

*Henceforth in this set, odd-numbered answers will be omitted. A challenge!  
在这个集合中，从现在开始，奇数编号的答案将被省略。一个挑战！*

5:76 a. Conclusion: ABCDE is an equilateral polygon inscribed in a circle, b.  
结论：ABCDE是一个内切于圆的等边多边形。

regular polygons

ABCDE

equilateral polygons inscribed in circles

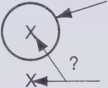
c. DI 5:77 Deliberately omitted.

5:78 a. Conclusion: Marguerite Blank will win the presidential election, b.  
5:78 a. 结论：玛格丽特·布兰克将赢得总统选举，b.

people not trusted by the American people  
美国人民不信任的人

people elected president  
人们选举的总统

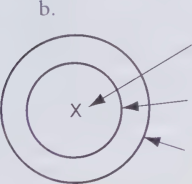
Marguerite Blank  
玛格丽特·布兰克



c. DI

5:79 Deliberately omitted.

5:80 a. Conclusion: Blue and yellow, when combined, will appear to be white.  
结论：蓝色和黄色混合在一起会呈现为白色。

pairs of colors which, when combined, appear to be white   
白色的组合看起来是白色。

blue and yellow

complementary colors

c. DV

*Note: For convenience, I treated blue and yellow together as a member of the class, pairs of colors. I hope you were able to extend the system in a way that enabled you to handle this situation in a reasonable way. You will have to do this sort of thing in the future because no system answers all the questions. You often have to be creative and sensitive in dealing with practical situations.  
注意：为方便起见，我将蓝色和黄色一起视为颜色对的成员。希望您能够以一种合理的方式扩展系统，以便能够处理这种情况。因为没有一个系统能够回答所有的问题，所以您将来经常需要在处理实际情况时具备创造力和敏感性。*

**5:81** Deliberately omitted.

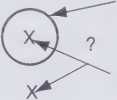
**5:82 a. Conclusion: Mary does not know the rules of punctuation, b.  
结论：玛丽不懂标点符号的规则**



people who do well in their compositions

people who follow the rules of punctuation

Mary



people who harm

Macbeth

Macduff

c. DV

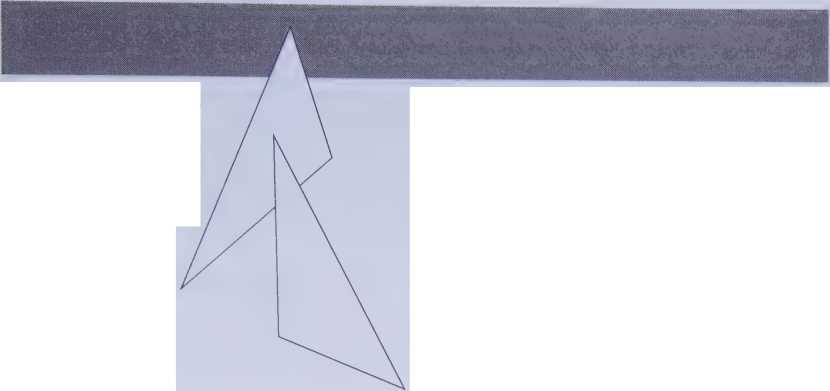
**5:83** Deliberately omitted.

**5:84** a. Conclusion: Macduff shall harm Macbeth, b.

people who are of woman born  
生于女性之中的人们

c. DI

Thought question: What then does follow?  
思考问题：接下来会发生什么？

Deduction:  
推理

CHAPTER

6

Propositional Logic  
命题逻辑

Now that you understand deductive validity and have some techniques for handling class logic, you are ready to move on to propositional logic. Here are three examples of propositional-logic arguments.  
现在你已经理解了演绎有效性并掌握了一些处理类逻辑的技巧，你可以开始学习命题逻辑了。这里有三个命题逻辑论证的例子。

Example 6:1

1. If Ben is a cat, then Ben is an animal.  
   如果Ben是一只猫，那么Ben就是一只动物。
2. *Ben is not an animal.  
   Ben不是动物。*
3. Therefore, Ben is not a cat.  
   因此，Ben不是一只猫。

Example 6:2

1. Either Arlene stabbed Al, or Arlene is innocent.  
   要么阿琳刺伤了艾尔，要么阿琳是无辜的。
2. *Arlene did not stab Al.  
   阿琳没有刺伤艾尔。*
3. Therefore, Arlene is innocent.  
   因此，阿琳是无辜的。

Example 6:3

If parking is prohibited on this street and Sybil parked there last night, then Sybil is in trouble. However, I know that Sybil is not in trouble and that parking is prohibited on this street. Therefore, she did not park there last night.  
如果在这条街上禁止停车，而且Sybil昨晚停在那里，那么Sybil会有麻烦。然而，我知道Sybil没有麻烦，而且在这条街上禁止停车。因此，她昨晚没有停在那里。*­*

You can probably see that the first two arguments are deductively valid, but you might not be sure about the third. In any case, circle techniques do not work here, so we will move on to another common set of techniques. As with class logic, there are many strategies and refinements that will be omitted. But basic ideas will be pre­sented, ideas that you can build on by yourself, or through reading other sources.1

1. Most standard elementary deductive logic texts would be helpful. For one that continues an emphasis on natural language, see my Natural Language Logic, forthcoming.   
   你可能会看到前两个论点是演绎有效的，但你可能对第三个不确定。无论如何，在这里圈圈技术是不起作用的，所以我们将转向另一组常见的技术。与课堂逻辑一样，有许多策略和改进将被省略。但基本思想将被介绍，这些思想你可以自己建立，或通过阅读其他资料来加深理解。大多数标准的初等演绎逻辑教材都会有所帮助。对于一个继续强调自然语言的教材，请参阅我的《自然语言逻辑》，即将出版。

Propositions  
命题

According to the meaning of proposition that we shall use, a proposition, roughly speaking, is either a sentence or, if embedded in a more complex sentence, could be a sentence if isolated.2 It is a set of concepts (or words) with a given meaning that can stand alone and make sense if asserted. Here are some examples of simple propositions that appear in italics in Examples 6:1, 6:2, and 6:3:  
根据我们将要使用的命题的意义，大致上说，命题要么是一个句子，要么是嵌入在更复杂的句子中，如果被孤立出来的话，也可以成为一个句子。它是一组具有给定含义的概念（或单词），如果被断言的话，可以独立存在并且有意义。以下是一些简单命题的例子，它们在示例6:1、6:2和6:3中以斜体显示：­sitions that appear in italics in Examples 6:1, 6:2, and 6:3:

Example 6:4: Some Basic Propositions  
一些基本命题

1. Ben is a cat.  
   Ben是一只猫。
2. Ben is an animal.  
   Ben是一只动物。
3. Ben is not an animal.  
   Ben不是动物。
4. Ben is not a cat.  
   Ben 不是一只猫。
5. Arlene stabbed Al.
6. Arlene is innocent.
7. Arlene did not stab Al.  
   阿琳没有刺伤艾尔。
8. Parking is prohibited on this street.  
   在这条街上禁止停车。
9. Sybil parked there last night.  
   Sybil昨晚停在那里。
10. Sybil is in trouble.  
    Sybil有麻烦了。
11. Sybil is not in trouble.  
    Sybil没有麻烦。
12. She did not park there last night  
    她昨晚没有停在那里。

Look again at the arguments in Examples 6:1, 6:2, and 6:3 to see the role that the propositions in Example 6:4 play in those arguments. Note also the role in Examples 6:1, 6:2, and 6:3 played by the words if, then, either, or, and and.  
在示例6:1、6:2和6:3中再次查看论点，以了解示例6:4中的命题在这些论点中所起的作用。还要注意在示例6:1、6:2和6:3中，如果、那么、要么、或者和和的词所起的作用。

Here are some things that are not propositions because they cannot stand alone and make sense if asserted:  
这里有一些不是命题的东西，因为它们不能独立存在并且在被断言时没有意义。

Example 6:5

1. Robins  
   罗宾斯
2. People under eighteen  
   未满十八岁的人
3. anybody is under eighteen (in “If anybody is under eighteen, then that person may not enter.”)  
   任何人未满十八岁（如果任何人未满十八岁，则该人不得进入）。­son may not enter.”)

The classes that are a and b in Example 6:5 obviously do not make sense to assert all by themselves. Suppose, for example, someone came up to you and said, “Robins.” What sense would you make of that? Of course it would make sense as an answer to a question, such as “What kinds of birds are those?” But then the speaker would implicitly be asserting a complete proposition, Those are robins, which can stand alone and make sense if asserted. But the word Kobins, without any such implication, is not an assertion.  
在示例6:5中，明显地，类a和b本身并没有意义。例如，假设有人走到你面前说：“鸟”。你会从中得出什么意义呢？当然，如果这是对一个问题的回答，比如“那些是什么鸟？”那么它就有意义了。但是说话者隐含地在断言一个完整的命题：“那些是鸟”，如果这样断言，它就可以独立存在并有意义。但是，没有这样的暗示，单独的“鸟”并不是一个断言。­cation, is not an assertion.

2. A more precise, theoretical definition of proposition would not be helpful for present purposes.   
2. 对于当前目的来说，对命题的更精确、理论性的定义并不有助于。

Even though Example 6:5c {anybody is under eighteen) has a subject and predicate, someone’s trying to assert it does not make sense, if its words mean what they mean in the complete sentence given in parentheses in that example. What would you make of someone’s coming up to you and saying, “Anybody is under eighteen,” in the sense in which it is meant in Example 6:5c? Actually, the proposition in quotes in Example 6:5c fits best under class logic because its meaning is People under eighteen may not enter.  
即使例子6:5c（任何人都未满十八岁）有主语和谓语，但有人试图断言它没有意义，如果它的词在括号中的完整句子中的意思是什么。如果有人走到你面前说，任何人都未满十八岁，就像在例子6:5c中所指的那样，你会怎么理解？实际上，例子6:5c中引号中的命题最适合使用类别逻辑，因为它的意思是未满十八岁的人不得进入。­

*If-Then Reasoning  
如果-那么 推理*

Reasoning with if-then propositions is the most important kind of propositional reasoning, so we shall start with it. The following argument is a case of if-then reasoning because it employs an if-then proposition:  
用if-then命题进行推理是最重要的命题推理类型，因此我们将从这里开始。以下论证是一种if-then推理的情况，因为它使用了一个if-then命题：­­ing

Example 6:6

1. If Ben is a cat, then Ben is an animal.  
   如果Ben是一只猫，那么Ben就是一只动物。
2. Ben is a cat.  
   Ben是一只猫。
3. Therefore, Ben is an animal.  
   因此，本是一只动物。

The first reason, a, is an if-then proposition consisting of two shorter propositions joined by the words, if and then, in appropriate places. The second reason, b, is a separate assertion of the if part. The conclusion, c, is an assertion of the then part of a.  
第一个原因，a，是一个由两个较短的命题组成的如果-那么命题，通过适当的位置由if和then连接在一起。第二个原因，b，是对如果部分的单独断言。结论，c，是对a的那部分的断言。­arate

The first (the complex) proposition asserts that the second reason is enough to entitle us to draw the conclusion. The conclusion follows necessarily from the two reasons together.  
第一个（复杂的）命题断言第二个原因足以使我们有权得出结论。结论必然地从这两个原因中得出。

This is not to say that the conclusion is true. It might very well be that Ben is not an animal. But if the reasons are true, then he must be an animal. That is, given that it is true that if Ben is a cat, then Ben is an animal, and given also that Ben is a cat, then Ben must be an animal. If those two reasons are true, there is no way to avoid the conclusion. Therefore, the argument in Example 6:6 is deductively valid.  
这并不意味着结论是正确的。本有可能本不是动物。但是如果理由是正确的，那么他必须是动物。也就是说，如果本是一只猫，那么本就是动物是真的，而且本确实是一只猫，那么本必须是动物。如果这两个理由是真的，就无法避免这个结论。因此，例子6:6中的论证是演绎有效的。

Affirming the Antecedent  
肯定前件

In Example 6:6, the /proposition has been affirmed (in b). This entitles us to draw as a conclusion the then proposition (c). Because the /part is called the antecedent and because the antecedent is separately affirmed (in reason b), the form of reasoning in Example 6:6 is called affirming the antecedent. Affirming the antecedent is a deductively valid form.  
在例子6:6中，命题已被确认（在b中）。这使我们有权得出结论，即后来的命题（c）。因为部分被称为前件，并且前件被单独确认（在原因b中），所以在例子6:6中的推理形式被称为肯定前件。肯定前件是一种演绎有效的形式。­

Antecedents and Consequents  
前因和后果

In the first reason (a) of Example 6:6, the proposition Ben is an animal is the then part of the if-then proposition. The then part of an if-then proposition is called the consequent. In the first reason of Example 6:6, Ben is an animal is the consequent.  
在示例6:6的第一个原因(a)中，命题Ben是一种动物是if-then命题的then部分。if-then命题的then部分被称为consequent。在示例6:6的第一个原因中，Ben是一种动物是consequent。

Before going on to look at other forms of reasoning, let us pause to identify antecedents and consequents. The antecedent often comes first, but it does not always do so. Sometimes the antecedent comes second and the consequent comes first (Example 6:7«), and sometimes the antecedent is inserted between parts of the consequent (Example 6∙.7b)∙.  
在继续研究其他推理形式之前，让我们先停下来确定前因和后果。前因通常在前面，但并不总是如此。有时前因在第二个位置，而后果在第一个位置（例子6:7），有时前因被插入到后果的部分之间（例子6∙.7b）∙。

Example 6:7

1. Ben is an animal if Ben is a cat.  
   如果Ben是一只猫，那么Ben是一只动物。
2. Sybil, if parking is prohibited on this street, is in trouble.  
   Sybil，如果这条街禁止停车，就麻烦了。

Examples 6.6a and 6:7a mean the same thing, even though the order is reversed. This is because the word if is attached to the same proposition {Ben is a cat) in both cases. The total if-then proposition, whatever the order (as long as if stays with Ben is a cat), tells us that Ben’s being a cat is sufficient to establish that Ben is an animal.  
例子 6.6a 和 6:7a 意思相同，尽管顺序相反。这是因为无论顺序如何（只要 if 与 Ben is a cat 在一起），单词 if 都与同一个命题 {Ben is a cat) 相连。总的 if-then 命题告诉我们，只要 Ben 是一只猫，就足以证明 Ben 是一只动物。

Note that the word if is not part of the antecedent; rather it is an indicator of the antecedent. The antecedent is the proposition coming right after the word if The consequent is the other unit of the complex proposition. The word then, if it is used, is not part of the consequent. When it appears, it is an indicator of the consequent. In Example 6:7, the word then was omitted, as it always is when the consequent comes first. Sometimes it is omitted even when the consequent comes second, as in If Ben is a cat, Ben is an animal. The word then is not really needed in front of the consequent {Ben is an animal) to make the complex proposition read smoothly. However, it can be there, as in reason a in Example 6:6.  
请注意，if这个词不是前项的一部分，而是前项的指示器。前项是紧跟在if之后的命题。后项是复合命题的另一个部分。如果使用了then这个词，它并不是后项的一部分。当它出现时，它是后项的指示器。在例子6:7中，then这个词被省略了，因为当后项在前面时，它总是被省略的。有时，即使后项在第二位，它也会被省略，例如如果Ben是一只猫，Ben是一只动物。在复合命题中，为了使读起来流畅，实际上不需要在后项{Ben是一只动物）前面加上then这个词。然而，它可以存在，就像例子6:6中的reason a一样。

­Another difference that we can usually ignore comes from the substituting of a pronoun or some similar term to refer to something already named. Hence (assuming that Ben is male) the if-then propositions in Example 6:8 are essentially the same in meaning for our purposes:  
我们通常可以忽略的另一个不同之处来自于代词或类似术语的替换，用以指代已经命名的事物。因此（假设Ben是男性），在我们的目的上，例子6:8中的if-then命题在意义上基本相同。

Example 6:8

1. If Ben is a cat, then Ben is an animal.  
   如果Ben是一只猫，那么Ben就是一只动物。
2. If Ben is a cat, then he is an animal.  
   如果Ben是一只猫，那么他就是一只动物。

Summary  
摘要

Propositions can stand alone and make sense when asserted. When two propositions are appropriately joined together by the words if and then (although then is not always needed), the result is a more complex if-then proposition). The zf part is the antecedent. The then part is the consequent. Although the antecedent usually comes first, the consequent sometimes comes first, and sometimes the antecedent comes between parts of the consequent. The substitution of a pronoun, when referring to something already named, generally does not change the meaning of an if-then proposition. When an argument consists of an if-then proposition as one reason, the affirmed antecedent as the other reason, and the consequent by itself as the conclu sion, this argument is of the form, affirming the antecedent, a deductively valid form of argument.  
命题可以独立存在并在被断言时有意义。当两个命题通过“如果”和“那么”这两个词适当地连接在一起时（尽管“那么”并不总是必需的），结果是一个更复杂的如果-那么命题。其中的“如果”部分是前件，而“那么”部分是后件。尽管前件通常在前面，但有时后件在前面，有时前件出现在后件的一部分之间。当代词代替已经命名的东西时，通常不会改变如果-那么命题的意义。当一个论证包含一个如果-那么命题作为一个原因，肯定的前件作为另一个原因，以及单独的后件作为结论时，这个论证的形式是肯定前件，是一种演绎有效的论证形式。­

Check-Up 6A

True or False?  
真或假？

If a statement is false, change a crucial word or words to make it true.  
如果一个陈述是错误的，请改变一个关键的词或词组使其变为真实。

**6:1 The if proposition in an if-then proposition is called the antecedent.  
6:1 如果-然后命题中的如果命题被称为前件。**

**6:2 The then proposition in an if-then proposition is called the consequent,  
6:2 如果-那么命题中的那个命题被称为结论,**

but only when the word then is actually there.  
但仅当单词'then'实际存在时。

**6:3 The following two complex propositions mean the same thing:  
6:3 下面两个复杂命题意思相同：**

1. If John is in school, then Mary is happy.  
   如果约翰在学校，那么玛丽就会开心。
2. Mary is happy, if John is in school.  
   如果约翰在学校，玛丽就很开心。

**6:4 In the following two complex propositions, the antecedent is the  
6:4 在下面的两个复杂命题中，前件是**

same:  
相同

1. Karl was depressed, if he lost the election.  
   如果卡尔输掉选举，他会感到沮丧。
2. Karl lost the election, if he was depressed.  
   如果卡尔感到沮丧，他就输掉了选举。

6:5 Propositions can stand alone, and do make sense if asserted.  
6:5 命题可以独立存在，并且如果被断言，是有意义的。

6:6 Tom is a turtle is a proposition.  
汤姆是一只乌龟是一个命题。

6:7 The proposition that comes first in an if-then proposition is called the antecedent.  
6:7 如果-那么命题中先出现的命题被称为前件。

6:8 The following argument is of the form, affirming the antecedent, and is deductively valid:  
6:8 下面的论证是以肯定前提为形式的，并且是演绎有效的。

1. Tom is slow, if Tom is a turtle.  
   汤姆很慢，如果汤姆是一只乌龟。
2. Tom is slow.  
   汤姆很慢。
3. Therefore, Tom is a turtle.  
   因此，汤姆是一只乌龟。

Short Answer  
简答题

For each of the following items, (a) underline the antecedent once and (b) underline the consequent twice, but do not underline if and then because they are not in these examples part of the antecedent and consequent. The first two are done as examples. If your instructor has not made another suggestion, either photocopy these pages or copy the items.  
对于以下每个项目，(a) 一次划线表示前件，(b) 两次划线表示后件，但是如果和那么不是前件和后件的一部分，则不要划线。前两个作为示例已经完成。如果您的教师没有提出其他建议，请复印这些页面或复制这些项目。

**6:9 If Tom is a turtle, then Tom is slow.  
如果Tom是一只乌龟，那么Tom就是慢的。**

**6:10 Tom is slow, if Tom is a turtle.  
6:10 Tom is slow, if Tom is a turtle.**

**6:11 If junipers are poisonous, then the cattle are in danger.  
如果柏树有毒，那么牛就会有危险。**

**6:12 The cattle are in danger, if junipers are poisonous.  
6:12 牛群有危险，如果雪松有毒。**

**6:13 If the supervisor forgot about us, then there is a shortage of concrete.  
6:13 如果主管忘记了我们，那么就会出现混凝土短缺。**

**6:14 If Terry got into the Blue Room, then she lied about her age.   
6:14 如果特里进入了蓝色房间，那么她就谎报了自己的年龄。**

6:15 If Terry lied about her age, then she got into the Blue Room.  
6:15 如果Terry谎报了她的年龄，那么她就进入了蓝色房间。

6:16 If Joanna is a liberal, then she supported the prime minister.  
6:16 如果Joanna是自由派，那么她支持首相。

6:17 Joanna, if she supported the prime minister, is a liberal.  
6:17 乔安娜，如果她支持首相，是自由派。

6:18 If Arlene admitted that she did it, then she did it.  
6:18 如果阿琳承认她做了，那么她就做了。

6:19 Martin thinks, if he is wearing a red hat, that hunters might be around.  
6:19 马丁认为，如果他戴着一顶红帽子，可能会有猎人在附近。

6:20 Arlene, if she admitted that she did it, did it.  
6:20 阿琳，如果她承认她做了，做了。

6:21 If she killed him, then she performed the act that caused his death.  
6:21 如果她杀了他，那么她就执行了导致他死亡的行为。

6:22 She killed him, if she performed the act that caused his death.  
她杀了他，如果她进行了导致他死亡的行为。

6:23 If the blood is Al’s blood, then it is type A.  
如果血液是Als血型，那么它是A型。

6:24 The blood, if it is type A, is Al’s blood.  
6:24 这血，如果是A型，就是Als的血。

6:25 Tom Jeffers, if he was seen in the hospital waiting room between 10 p.m. and midnight, did not do it.  
6:25 Tom Jeffers, 如果他在晚上10点到午夜之间被看到在医院候诊室，他没有做这件事。

6:26 If Tom Jeffers was seen in the hospital waiting room between 10 P.M. and midnight, then he did not do it.  
6:26 如果在晚上10点到午夜期间看到了汤姆·杰弗斯在医院候诊室里，那么他没有做这件事。

Affirming and Denying the  
确认和否认

Antecedent and Consequent  
前因和后果

In addition to affirming the antecedent, there are three other basic moves one can make from an if-then proposition. Two are deductively invalid, and one is deductively valid. Example 6:9 is an illustration of the move called denying the antecedent, so called because one of the reasons denies the antecedent of the other reason.  
除了肯定前提之外，还有另外三种基本的推理方式可以从一个如果-那么命题中进行。其中两种是无效的推理，而另一种是有效的推理。例子6:9是否定前提的一个示例，因为其中一个理由否定了另一个理由的前提。­tively valid. Example 6:9 is an illustration of the move called

Example 6:9

1. If Ben is a cat, then Ben is an animal.  
   如果Ben是一只猫，那么Ben就是一只动物。
2. Ben is not a cat.  
   Ben 不是一只猫。
3. Therefore, Ben is not an animal.  
   因此，Ben不是动物。

Reason b denies the antecedent of reason a and the conclusion does not necessarily follow. Even if the reasons are true, it would still be possible for Ben to be an animal. He might be a goat, for example. Denying the antecedent is a deductively invalid form.  
b的理由否定了a的前提，结论并不一定成立。即使这些理由是真实的，本仍然有可能是一只动物。例如，他可能是一只山羊。否定前提是一种无效的推理形式。­

Another deductively invalid form is affirming the consequent, so called because one reason affirms the consequent of the other reason, as in Example 6:10:  
另一种推理无效的形式是肯定后果，因为一个原因肯定了另一个原因的后果，如例子6:10所示。

Example 6:10

1. If Ben is a cat, then Ben is an animal.  
   如果Ben是一只猫，那么Ben就是一只动物。
2. Ben is an animal.  
   Ben是一只动物。
3. Therefore, Ben is a cat.  
   因此，Ben是一只猫。

Reason b affirms the consequent of reason a. Again, the conclusion does not necessarily follow. The reasons allow that Ben could be some other kind of animal than a cat, even though his being a cat would ensure his being an animal. Affirming the consequent is a deductively invalid form.  
原因b肯定了原因a的结果。再次强调，结论并不一定成立。这些原因允许本可能是除了猫以外的其他动物，尽管他是一只猫可以确保他是一只动物。肯定结果是一种无效的推理形式。

The last basic form in this series is called denying the consequent because one reason denies the consequent of the other reason, as in Example 6:11:  
这个系列中的最后一个基本形式被称为否定因果关系，因为一个原因否定了另一个原因的结果，如示例6:11。­son denies the consequent of the other reason, as in Example 6:11:

Example 6:11

1. If Ben is a cat, then Ben is an animal.  
   如果Ben是一只猫，那么Ben就是一只动物。
2. Ben is not an animal.  
   Ben不是动物。
3. Therefore, Ben is not a cat.  
   因此，Ben不是一只猫。

Reason b denies the consequent of reason a. This time, the conclusion necessarily follows. If you do not see this, consider: Assuming that the reasons are true, suppose, contrary to the conclusion, that Ben were a cat. Then according to reason λ, Ben would have to be an animal. But reason b says that he is not an animal. So, he cannot be a cat. Denying the consequent is a deductively valid form.  
原因b否定了原因a的结果。这次，结论必然成立。如果你没有看到这一点，请考虑：假设这些原因是真实的，假设与结论相反，Ben是一只猫。然后根据λ原因，Ben必须是一只动物。但是原因b说他不是一只动物。所以，他不能是一只猫。否定结果是一种演绎有效的形式。­sarily follows. If you do not see this, consider: Assuming that the reasons are true, suppose, contrary to the conclusion, that Ben

Summary So Far  
迄今为止的摘要

This chapter so far has further explored the I in FRISCO by elaborating some basic features of propositional logic, a kind of deductive logic that is in some ways similar to class logicr In propositional logic, the basic building block is the proposition, which consists of a subject and predicate, and can stand alone and meaningfully be asserted.  
到目前为止，本章进一步探讨了FRISCO中的I，通过详细阐述命题逻辑的一些基本特征。命题逻辑是一种演绎逻辑，与类逻辑在某些方面相似。在命题逻辑中，基本构建块是命题，它由主语和谓语组成，可以独立存在并有意义地被断言。

The most important propositional-logic relationship is implication, as found in if-then propositions that connect an antecedent (the ∕fpart) with a consequent (the then part). Each of these is itself a proposition.  
最重要的命题逻辑关系是蕴涵，它出现在连接前提（∕f 部分）与结论（then 部分）的 if-then 命题中。每个命题本身也是一个命题。

♦ An if-then proposition says that the truth of the antecedent proposition is enough to establish the truth of the consequent proposition. It says that the consequent must be true in order that the antecedent be true. That is, unless the consequent is true, the antecedent cannot be true. But a standard if-then proposition does not say that the truth of the consequent is enough to establish the truth of the antecedent, nor does it say that the antecedent must be true in order that the consequent be true. It is a common deductive error to think that an if-then proposition says these things.  
♦ 如果-那么命题说，前提命题的真实足以确立结论命题的真实。它说结论必须为真，前提才能为真。也就是说，除非结论为真，前提才不能为真。但是，标准的如果-那么命题并不表示结论的真实足以确立前提的真实，也不表示前提必须为真，结论才能为真。认为如果-那么命题表达这些内容是一种常见的推理错误。­quent must be true in order that the antecedent be true. That is, unless the conse­quent is true, the antecedent cannot be true. But a standard ­quent be true. It is a common deductive error to think that an

*Affirming the antecedent and denying the consequent are deductively valid moves. Affirming the consequent and denying the antecedent are deductively invalid moves.  
肯定前提并否定结论是演绎上有效的步骤。肯定结论并否定前提是演绎上无效的步骤。*

Table 6.1 summarizes the relationships among affirming and denying antecedents and consequents. Do not memorize it. Just think about its parts until you are sure that you feel comfortable with what it says in terms of your own examples.   
表6.1总结了肯定和否定前提与结论之间的关系。不要死记硬背。只需思考其各个部分，直到你确信对于自己的例子所表达的意思感到舒适为止。

TABLE 6.1 Deductive validity of the Four Basic Forms of "If-Then" Reasoning  
表6.1 四种“如果-那么”推理的演绎有效性

|  |  |  |
| --- | --- | --- |
|  | *Antecedent* | *Consequent* |
| Affirming | Deductively Valid | Deductively Invalid |
| Denying | Deductively Invalid | Deductively Valid |

Check-Up 6B

True or False?  
真或假？

If a statement is false, change a crucial word or words to make it true.  
如果一个陈述是错误的，请改变一个关键的词或词组使其变为真实。

**6:27 Affirming the antecedent is a deductively valid form.  
6:27 邀请前提是一种演绎有效的形式。**

**6:28 Denying the antecedent is a deductively invalid form.  
6:28 否定前提是一种演绎无效的形式。**

**6:29 The following is a case of denying the consequent:  
6:29 下面是一个否定因果关系的案例：**

1. If Marguerite is here, then Estelle is happy.  
   如果玛格丽特在这里，那么埃斯特尔就会很开心。
2. Estelle is not happy.  
   Estelle 不开心。
3. Therefore, Marguerite is not here.  
   因此，玛格丽特不在这里。

**6:30 Denying the consequent is a deductively invalid form.  
6:30 否定后果是一种推理上无效的形式。**

**6:31 Affirming the consequent is a deductively invalid form.  
6:31 证实因果关系是一种推理上无效的形式。**

Short Answer  
简答题

­lowing abbreviations: For For each of the following items, indicate the form of the argument, using the following abbreviations: For affirming the antecedent, use AA; for denying the antecedent, use DA; for affirming the consequent, use AC; and for denying the consequent, use DC. Also indicate whether the argument is deductively valid (DV) or deductively invalid (DI). The first one is done as an example.  
对于以下每个项目，请使用以下缩写表示论证形式：肯定前件使用AA；否定前件使用DA；肯定后件使用AC；否定后件使用DC。还要指出论证是演绎有效（DV）还是演绎无效（DI）。第一个作为示例已完成。*­quent,*

**6:32 a. If Marguerite is here, then Estelle is happy.  
6:32 a. 如果玛格丽特在这里，那么埃斯特尔很开心。**

1. Estelle is happy.
2. Therefore, Marguerite is here. AC, DI  
   因此，玛格丽特在这里。AC，DI

**6:33 a. If Joanna supported the prime minister, then she is a liberal.  
6:33 a. 如果Joanna支持首相，那么她是自由派。**

1. Joanna is not a liberal.  
   Joanna 不是自由派。
2. Therefore, Joanna did not support the prime minister.  
   因此，乔安娜不支持首相。

**6:34 a. If Joanna supported the prime minister, then she is a liberal, b. Joanna is a liberal.  
6:34 a. 如果乔安娜支持首相，那么她是自由派，b. 乔安娜是自由派。**

1. Therefore, Joanna supported the prime minister.  
   因此，乔安娜支持首相。

**6:35 a. If Joanna is a liberal, then she supported the prime minister.  
6:35 a. 如果Joanna是自由派，那么她支持首相。**

1. Joanna did not support the prime minister.  
   Joanna不支持首相。
2. Therefore, Joanna is not a liberal.  
   因此，乔安娜不是自由派。

**6:36 a. Terry, if she lied about her age, got into the Blue Room.  
6:36 a. Terry，如果她谎报了年龄，进入了蓝色房间。**

1. Terry got into the Blue Room.  
   特里进入了蓝色房间。
2. Therefore, Terry lied about her age.   
   因此，特里谎称她的年龄。

**6:37 a. Terry lied about her age, if she got into the Blue Room.  
6:37 a. Terry lied about her age, if she got into the Blue Room." "6:37 a. 特里谎报了她的年龄，如果她进入了蓝色房间。**

1. Terry did not get into the Blue Room.  
   特里没有进入蓝色房间。
2. Therefore, she did not lie about her age.  
   因此，她没有谎报年龄。

**6:38 a. The blood is type A.  
6:38 a. 血型为A型。**

1. The blood is type A, if it is Al’s.  
   血型为A型，如果是Als。
2. Therefore, the blood is Al’s.  
   因此，血液是Als。

**6:39 a. If junipers arc poisonous, then the cattle are in danger.  
6:39 a. 如果柏树有毒，那么牛就会有危险。**

1. The cattle are in danger.  
   牛群处于危险之中。
2. Therefore, junipers are poisonous.  
   因此，杜松树是有毒的。

**6:40 a. Arlene, if she admitted that she did it, did it.  
6:40 a. 阿琳，如果她承认她做了，就做了。**

1. Arlene did not do it.  
   阿琳没有做。
2. Therefore, Arlene did not admit that she did it.  
   因此，阿琳没有承认她做了这件事。

**6:41 a. Arlene admitted that she did it.  
6:41 a. 阿琳承认她做了。**

1. It Arlene admitted that she did it, then she did it.  
   阿琳承认她做了，然后她做了。
2. Therefore, Arlene did it.  
   因此，阿琳做到了。

Conversion  
转换

Exchanging the antecedent and consequent is a significant change. That is, the two statements in Example 6:12 (« and b) are very different from each other.  
交换前因和后果是一个重大的改变。也就是说，示例6:12中的两个陈述（«和b）彼此非常不同。

Example 6:12

1. If Ben is a cat, then Ben is an animal.  
   如果Ben是一只猫，那么Ben就是一只动物。
2. If Ben is an animal, then Ben is a cat.  
   如果Ben是一只动物，那么Ben就是一只猫。

In Example 6:12^, the word if is attached to (that is, it comes just before) the proposition Ben is an animal. That makes Ben is an animal the antecedent, instead of Ben is a cat, and radically changes the meaning of the whole if-then proposition. The new if-then proposition (Example 6:12⅛) asserts that Ben’s being an animal is sufficient to establish that Ben is a cat. This clearly is not what the original asserted. The original asserted that Ben’s being a cat was sufficient to establish that Ben is an animal.  
在例子6:12^中，单词if与命题Ben is an animal相连（即，它紧跟在前面）。这使得Ben is an animal成为前件，而不是Ben is a cat，并且彻底改变了整个if-then命题的意义。新的if-then命题（例子6:12⅛）断言Ben是动物足以证明Ben是猫。这显然不是原来所断言的。原来断言的是Ben是猫足以证明Ben是动物。

­tant distinction in The distinction between the antecedent and the consequent is the most important distinction in if-then propositional logic. Many of the mistakes people make in propositional logic can be roughly characterized as getting this distinction confused, although usually in more complex circumstances.  
前因和后果之间的区别是条件命题逻辑中最重要的区别。许多人在命题逻辑中犯的错误可以大致归结为混淆了这个区别，尽管通常是在更复杂的情况下。

Exchanging these two different ways of joining the elementary propositions in if-then propositions is common enough to have a name: conversion. To converts if- then proposition is to exchange the antecedent and the consequent. Example 6:12& is the converse of Example 6Λ2a and Example 6:12^ is the converse of 6:12^.  
交换这两种不同的连接基本命题的方式在如果-那样的命题中是很常见的，以至于有一个名字：转换。将如果-那样的命题转换为交换前件和后件。例子6:12&是例子6Λ2a的逆命题，例子6:12^是6:12^的逆命题。

The location of the antecedent and consequent with respect to each other has no bearing on whether they have been exchanged. All that matters is the location of the word if. Hence, the two propositions in Example 6:13 are also converses of each other:  
前因和后果相对位置对它们是否被交换没有影响。唯一重要的是if这个词的位置。因此，例6:13中的两个命题也是彼此的逆命题。

Example 6:13

1. Ben is an animal if Ben is a cat.  
   如果Ben是一只猫，那么Ben是一只动物。
2. If Ben is an animal, Ben is a cat.  
   如果Ben是一个动物，Ben是一只猫。

Conversion is a deductively invalid form. It is also usually a mistake (that is, invalid in the everyday meaning of invalid).  
转换是一种推理上无效的形式。通常也是一个错误（即在日常意义上的无效）。

Con traposition

A contrapositive of a proposition is the proposition with the antecedent and consequent exchanged and each denied. In Example 6:14, b is the contrapositive of a.  
命题的逆否命题是将前件和后件交换并且否定它们的命题。在例子6:14中，b是a的逆否命题。­quent exchanged and each denied. In Example 6:14,

Example 6:14

1. If Ben is a cat, then Ben is an animal.  
   如果Ben是一只猫，那么Ben就是一只动物。
2. Therefore, if Ben is not an animal, then Ben is not a cat.  
   因此，如果Ben不是动物，那么Ben就不是猫。

Ordinarily, contrapositives can be substituted for each other in arguments.  
通常情况下，逆否命题可以在论证中相互替代。

The move from *a* to *b* in Example 6:14 is called *contraposition:* The antecedent and consequent were exchanged and each was denied (or negated). More precisely, the exchange calls for shifting the z/Trom one proposition to the other, accompanied by the denial of each. The conclusion *(b)* follows from the reason *(a)* by the same kind of thinking that shows denying the consequent to be deductively valid: Example 6:14a: tells us that if Ben is a cat, then Ben is an animal. Granting that, let us suppose that Ben is not an animal. Then we would have to conclude that Ben is not a cat. Otherwise, he would be an animal (from *a).* So, if Ben is not an animal, then Ben is not a cat. This *if-then* proposition is our conclusion (6:14^). Contraposition is a deductively valid form.3

Negation

To negate the proposition Ben is a cat is to assert that Ben is not a cat. Generally speaking, one negates by introducing such words or prefixes as not, non-, no, un-, and it is not the case that. The three propositions in Example 6:15 are negations (or denials) of the proposition Ben is a cat and are propositions themselves. For present purposes, they are essentially equivalent to each other:  
在示例6:14中，从a到b的移动被称为对偶：前件和后件被交换，并且每个都被否定（或否定）。更准确地说，交换要求将z/从一个命题转移到另一个命题，并伴随着每个命题的否定。结论（b）是通过与否定后件具有相同类型的思维得出的原因（a）：示例6:14a告诉我们，如果Ben是一只猫，那么Ben是一只动物。假设Ben不是一只动物。然后我们必须得出结论Ben不是一只猫。否则，他将是一只动物（来自a）。所以，如果Ben不是一只动物，那么Ben不是一只猫。这个如果-那么命题是我们的结论（6:14^）。对偶是一种推理有效的形式。3否定否定命题Ben是一只猫是断言Ben不是一只猫。一般来说，否定是通过引入诸如not、non-、no、un-和it is not the case that等词或前缀来实现的。示例6:15中的三个命题是对命题Ben是一只猫的否定（或否认），它们本身也是命题。对于目前的目的，它们在本质上是相互等价的。

Example 6:15

1. Ben is not a cat.  
   Ben 不是一只猫。
2. It is not true that Ben is a cat.  
   Ben不是一只猫。
3. Ben is a non-cat.

Γ. Beware of contraposing if-then propositions that express causal connections. Make sure that the con- tr .positive is stated so that it makes sense in the situation.   
注意反推表达因果关系的若-则命题。确保反推陈述在情境中有意义。

Example 6:15z? is the more convenient way to express the thought.  
Example 6:15z? 是表达这个想法更方便的方式。

Double Negation  
双重否定

The standard double negation rule is this: Two negatives make a positive. That is, two negatives cancel each other out. Following this rule, the propositions in Example 6:16 are basically equivalent to each other:  
标准的双重否定规则是这样的：两个否定构成一个肯定。也就是说，两个否定相互抵消。根据这个规则，例子6:16中的命题基本上是等价的。

Example 6:16

1. Ben is a cat.  
   Ben是一只猫。
2. It is false that Ben is not a cat.  
   本是假的，Ben不是一只猫。
3. It is not true that Ben is not a cat.  
   本不是猫的Ben不是真的。
4. It is not the case that Ben is a non-cat.  
   本不是本不是猫的情况。

The last three {b, c, and d) contain double negations. The double negations cancel each other out to make the positive proposition Ben is a cat. Think about the meaning of each of these to make sure you understand why each of the last three contains a double negation, and why each means the same as the first.  
最后三个（b、c和d）包含了双重否定。双重否定相互抵消，得出肯定的命题Ben是一只猫。思考一下每个句子的含义，确保你理解为什么最后三个句子包含双重否定，以及为什么它们与第一个句子的意思相同。­tains

But a problem can arise when handling some double negations. Suppose, for example, someone says that it has not been proved that the apple trees are not productive. The person who says this might be holding that the trees are midway between being unproductive and productive, or that even though they might well be unproductive, it simply has not been proved. In such a case, it would be misleading simply to eliminate the double negative and conclude that it has been proved that the apple trees are productive. Therefore, you should keep an amendment to the rule in the back of your mind: Two negatives make a positive, unless some middle ground is possible.  
但是在处理一些双重否定时可能会出现问题。例如，假设有人说尚未证明苹果树不具有生产力。说这话的人可能认为这些树处于无生产力和有生产力之间，或者即使它们可能确实无生产力，只是尚未被证明。在这种情况下，简单地消除双重否定并得出结论苹果树具有生产力是具有误导性的。因此，你应该记住一条修正规则：两个否定构成一个肯定，除非存在某种中间地带。­ductive. The person who says this might be holding that the trees are midway between being unproductive and productive, or that even though they

The double-negation rule is more difficult to use with this amendment, but that is the way things are. The language and its users are sometimes very subde and sometimes very plain. You must judge a situation for what it is.  
双重否定规则在这项修正案中更难使用，但事情就是这样。语言及其使用者有时非常微妙，有时非常直接。你必须根据实际情况来判断。­

Double Negation and Contraposition  
双重否定和逆否命题

Sometimes when you make the contrapositive of a proposition you produce a double negation, which usually can then be eliminated.  
有时候当你对一个命题取逆否时，会产生双重否定，通常可以被消除。

Example 6:17

1. If Ben is a cat, then Ben is not a dog.  
   如果Ben是一只猫，那么Ben就不是一只狗。
2. If it is false that Ben is not a dog, then Ben is not a cat.  
   如果Ben不是一只狗是错误的，那么Ben就不是一只猫。
3. If Ben is a dog, then Ben is not a cat.  
   如果Ben是一只狗，那么Ben就不是一只猫。

In Example 6:17, the move from α to b is contraposition. The move from b to c is the elimination of a double negative in the antecedent of b.  
在例子6:17中，从α到b的移动是对偶。从b到c的移动是在b的前提中消除双重否定。

Eliminating double negatives makes things easier to understand, but it must be done with caution, and sometimes must not be done (as you saw in the previous section).   
消除双重否定会使事情更容易理解，但必须谨慎进行，并且有时不应该这样做（正如您在前一节中所看到的）。

Summary  
摘要

The converse of an if-then proposition is formed by exchanging the antecedent and the consequent so that the antecedent becomes the consequent, and vice versa. Conversion is a deductively invalid move.  
逆命题是通过交换前件和后件来形成的，使得前件变为后件，反之亦然。转换是一种无效的推理步骤。

The contrapositive of an if-then proposition is formed by exchanging and negating the antecedent and the consequent. Contraposition is a deductively valid move.  
逆否命题是通过交换和否定前件和后件来形成的。逆否是一个演绎有效的步骤。

Double negatives can be dropped, unless there is a middle ground. Beware.  
双重否定可以省略，除非存在一个折中的立场。小心。

Check-Up 6C

True or False?  
真或假？

If a statement is false, change a crucial word or words to make it true.  
如果一个陈述是错误的，请改变一个关键的词或词组使其变为真实。

**6:42 Conversion is deductively invalid.  
6:42 转换是演绎无效的。**

**6:43 We are short of concrete if the supervisor forgot about us is the converse of If the supervisor forgot about us, we are short of concrete.  
6:43 如果主管忘记了我们，我们缺少混凝土是如果主管忘记了我们，我们缺少混凝土的逆否命题。**

**6:44 If we are short of concrete, then the supervisor forgot about us is the converse of We are short of concrete if the supervisor forgot about us.  
6:44 如果我们缺少混凝土，那么主管忘记了我们就是我们缺少混凝土的逆否命题。**­verse of

**6:45 Exchanging the antecedent and consequent, while moving the word if to the other clause, is called conversion and is generally a mistake.  
6:45 交换前因后果，并将if这个词移到另一个从句中，被称为转换，通常是一个错误。**

**6:46 To make a contrapositive, you exchange the antecedent and consequent so that the antecedent becomes the consequent and the consequent becomes the antecedent, and then you separately deny each.  
6:46 制作逆否命题，你交换前件和后件，使前件成为后件，后件成为前件，然后分别否定它们。**­quent so that the antecedent becomes the consequent and the conse­quent becomes the antecedent, and then you separately deny each.

**6:47 Contraposition is deductively valid.  
6:47 对偶是演绎有效的。**

**6:48 Two negatives always make a positive, enabling us to drop every pair of negatives in a proposition.  
6:48 两个否定总是变成一个肯定，使我们能够去掉命题中的每一对否定。**

**6:49 The following two if-then propositions are contrapositives of each other and therefore imply each other:  
下面的两个如果-那么命题是对偶的，因此互相蕴含：**

1. If Tom is a turtle, then Tom is slow.  
   如果汤姆是一只乌龟，那么汤姆就是慢的。
2. If Tom is not slow, then Tom is not a turde.  
   如果汤姆不慢，那么汤姆不是个傻瓜。

**6:50 The following two if-then propositions are contrapositives of each other and therefore imply each other:  
6:50 下面的两个若-则命题是对偶命题，因此互相蕴含：**

1. It is type A, if it is Al’s blood.  
   如果是Als血型，那就是A型。
2. If it is not type A, then it is not Al’s blood.  
   如果不是A型，那就不是Als血液。

**6:51 I he following two if—then propositions arc contrapositives of each other and therefore imply each other:  
6:51以下两个如果-那么命题是对偶命题，因此互相蕴含：**

1. Tom Jeffers did not do it, if he was seen in the hospital waiting room between 10 p.m. and midnight.  
   如果在晚上10点到午夜期间在医院候诊室看到汤姆·杰弗斯，那他没有做这件事。
2. If Tom Jeffers was not seen in the hospital waiting room between 10 p.m. and midnight, then he did it.   
   如果在晚上10点到午夜期间没有看到汤姆·杰弗斯在医院候诊室里，那么他就是干的。

**6:52 The second of these two if-then propositions is a useful simplification of the first:  
6:52 这两个if-then命题中的第二个是对第一个的有用简化：**

**a. Joanna is not a liberal, if it is not true that she did not support the prime minister.  
Joanna不是自由派，如果她不支持总理的话是不真实的。**

**b. If Joanna supported the prime minister, then she is not a liberal.  
如果乔安娜支持首相，那么她不是自由派。**

Short Answer  
简答题

For each of the following, on a separate sheet of paper, fill in an appropriate word or words in the second proposition so that it means the same as the first (or write only the words zf and then in the proper order). Capitalize a letter if necessary. Avoid conversion. The first is done as an example.  
对于以下每个问题，请在一张纸上填写适当的单词或短语，使得第二个命题与第一个意思相同（或只写单词'zf'并按正确顺序）。必要时大写字母。避免转换。第一个已经做为示例。­version. The first is done as an example.

**6:53 a. Our cattle are in danger, if junipers are poisonous.  
6:53 a. 我们的牛有危险，如果雪松有毒。**

**b. If junipers are poisonous, then our cattle are in danger.  
如果柏树有毒，那么我们的牛就处于危险之中。**

**6:54 a. If Joanna supported the prime minister, then she is a liberal.  
6:54 a. 如果乔安娜支持首相，那么她是自由主义者。**

**b. , Joanna is a liberal, she supported the prime minister.  
b. , Joanna是一个自由主义者，她支持总理。** she supported the prime minister.

**6:55 a. Arlene did it, if she admitted that she did it.  
6:55 a. 阿琳做了，如果她承认她做了。**

**b. Arlene admitted that she did it, Arlene did it.  
阿琳承认她做了。** Arlene did it.

**6:56 a. The blood, if it is Al’s blood, is type A.  
6:56 a. 如果是Als的血液，它是A型。**

**b. the blood is Al’s blood, it is type A.  
血液是Als血液，它是A型。**

**6:57 a. This vehicle, if it has a motor, is prohibited.  
6:57 a. 如果这辆车有发动机，是被禁止的。**

**b. this vehicle has a motor, the vehicle is prohibited.  
此车辆有发动机，禁止使用。** the vehicle is prohibited.

More Short Answer  
更多简短回答

Simplify the following by eliminating the double negatives. If you do not think that the double negative can be eliminated because the simple rule (“Two negatives make a positive”) does not apply, then say that the double negative may not be eliminated. The first is done as an example. Use a separate sheet of paper.  
通过消除双重否定来简化以下内容。如果您认为双重否定不能被消除，因为简单规则（两个否定变为肯定）不适用，请说明双重否定可能不能被消除。第一个例子已经完成。请使用一张单独的纸。

**6:58 It is not true that John is not here. Result: John is here.  
6:58 这不是真的，约翰不在这里。结果：约翰在这里。**

**6:59 It is false that motorcycles are not permitted.  
摩托车是被允许的是错误的。**

**6:60 It is not true that the diamond is not in the queen’s crown.  
6:60 钻石不在女王的皇冠上。**

**6:61 There is no doubt that she is not guilty.  
她无疑是无辜的。**

**6:62 If Arlene did it, then it is not true that she did not admit that she did it.  
如果阿琳做了，那么她没有承认她做了的说法是不真实的。**

**6:63 It is not true that our cattle are not healthy, if they did not eat the junipers.  
我们的牛只不健康是不真实的，如果它们没有吃杜松树。**

**6:64 If the pork we had tonight was not inexpensive, then our budget will be exceeded.  
如果今晚的猪肉不便宜，那么我们的预算将会超支。**

**6:65 If a majority approved the resolution, then the society will not meet in a state that has not passed the proposed constitutional amendment.  
如果大多数人批准了决议，那么该社团将不会在尚未通过拟议的宪法修正案的州举行会议。**

**6:66 If Arlene did not do it, then she did not admit doing it.   
6:66 如果阿琳没有做，那么她没有承认做过。**

More Short Answer  
更多简短回答

­ative can be eliminated without changing the meaning.Write a contrapositive of each of the following propositions. Simplify, if a double negative can be eliminated without changing the meaning.  
写出以下命题的逆否命题。如果可以消除双重否定而不改变意义，则简化。

**6:67 If Arlene admitted it, then she did it.  
如果阿琳承认了，那么她就做了。**

**6:68 If junipers are poisonous, then our cattle are ill.  
如果柏树有毒，那么我们的牛就生病了。**

**6:69 The blood is type A, if it is Al’s blood.  
6:69 血型为A型，如果是Als血液。**

**6:70 If a vehicle has a motor, then the vehicle is prohibited.  
如果车辆有发动机，则禁止使用。**

6:71 If Sara Lee did not lie about her age, then she was not admitted to the Panama Club.  
如果Sara Lee没有谎报年龄，那么她就没有被允许加入巴拿马俱乐部。

**6:72 If the supervisor did not forget about us, then we have enough concrete.  
如果主管没有忘记我们，那么我们有足够的混凝土。**

6:73 Martin, if he is wearing a red hat, thinks that hunters might be around.  
如果马丁戴着红帽子，他认为可能有猎人在附近。

**6:74 If the gift is inexpensive, then Shiboen bought it.  
如果礼物不贵，那么Shiboen买了它。**

6:75 If she was convicted, then the jury was convinced beyond a reasonable doubt that the three conditions for murder were satisfied.  
如果她被判有罪，那么陪审团无疑相信满足了谋杀的三个条件。

**6:76 The battery is in bad condition, if you left the lights on all night.  
电池状况不好，如果你整晚都把灯开着。**

6:77 If a majority approved the resolution, then the society did not meet in a state that has not passed the proposed constitutional amendment.  
如果大多数人批准了决议，那么社会就没有在尚未通过拟议的宪法修正案的状态下召开会议。

More Short Answer  
更多简短回答

For each of the following arguments, state the final conclusion. Then decide whether each is deductively valid, indicating your reasons in abbreviated form. For these items, choose your reasons from the following list:  
对于以下每个论证，请陈述最终结论。然后决定每个论证是否具有演绎有效性，并用缩写形式说明你的理由。对于这些选项，请从以下列表中选择你的理由：

TABLE 6.2

|  |  |
| --- | --- |
| Justifications of a judgment of deductive validity (DV): | Justifications of a judgment of deductive invalidity (DI): |
| Affirming the Antecedent (AA) Denying the Consequent (DC) Contraposition (CONTR) Eliminable Double Negation (EDN) | Denying the Antecedent (DA) Affirming the Consequent (AC) Conversion (CONV)  Noneliminable Double Negation (NDN) |

For some items, you will need to break the argument into parts and deal with each part separately, giving more than one justification. If any part of the argument is deductively invalid, the whole argument is deductively invalid. The first two items are done as examples. If your answer needs a special explanation, then give it.  
对于某些项目，您需要将论点分解为部分并分别处理，提供多个理由。如果论点的任何部分在演绎上无效，则整个论点在演绎上无效。前两个项目作为示例完成。如果您的答案需要特殊解释，请提供。

6:78 Suziko lost the election. I conclude this because I know that if she lost the election, she is depressed. And clearly she is depressed.  
6:78苏子子输掉了选举。我得出这个结论是因为我知道如果她输掉了选举，她会感到沮丧。而且很明显她很沮丧。

*Final conclusion: Suziko lost the election. AC; DI  
最终结论：Suziko输掉了选举。AC; DI*

6:79 If John is at work today, then Juanita is happy. If Juanita is happy, then she is smiling. I just saw Juanita and noticed that she was not smiling. Hence, John is not at work today.  
6:79 如果约翰今天在工作，那么胡安妮塔很开心。如果胡安妮塔开心，那么她在微笑。我刚刚看到胡安妮塔，并注意到她没有微笑。因此，约翰今天不在工作。

*Final conclusion: John is not at work today. DC, DC; DV   
最终结论：约翰今天不在工作。DC，DC；DV*

**6:80 Karl did not lose the election. I conclude this because I know that if he lost the election, he would be depressed. And he obviously is not depressed.  
卡尔没有输掉选举。我得出这个结论是因为我知道如果他输掉选举，他会感到沮丧。而他显然没有沮丧。**

**6:81 If Mary went out last night, then Pedro is angry today. I have just seen Pedro and he is not angry today. Therefore, Mary did not go out last night.  
如果玛丽昨晚出去了，那么佩德罗今天生气。我刚刚见到佩德罗，他今天不生气。因此，玛丽昨晚没有出去。**

**6:82 Terry is in trouble, if she lied about her age. Therefore, if Terry is in trouble, then she lied about her age.  
6:82 如果Terry谎报了她的年龄，她就会陷入麻烦。因此，如果Terry陷入麻烦，那么她谎报了她的年龄。**

**6:83 Terry lied about her age, if she managed to get into the Blue Room. But Terry did not manage to get into the Blue Room. We saw her at Shack’s Fish & Chips. From all this, it follows that she did not lie about her age.  
6:83 Terry在年龄上撒谎，如果她设法进入了蓝色房间。但是Terry没有设法进入蓝色房间。我们在Shacks Fish & Chips看到了她。根据这一切，可以得出结论她没有在年龄上撒谎。**

**6:84 If John is in school, then Mary is happy. Hence, if Mary is unhappy, then John is not in school.  
如果约翰在学校，那么玛丽就会开心。因此，如果玛丽不开心，那么约翰就不在学校。**

**6:85 There is not a shortage of concrete. I conclude this from the fact that if the supervisor forgot us, there would be a shortage of concrete. But the supervisor never forgets us and she has not done so this time.  
6:85 混凝土没有短缺。我从这个事实得出结论，如果主管忘记了我们，那就会出现混凝土短缺。但是主管从未忘记过我们，这次也没有忘记。**

**6:86 This blood on the porch is type A. If the blood is Al’s blood, then it is type A, according to the blood analyst. Hence, the blood on the porch is Al’s.  
6:86 这个门廊上的血是A型的。如果这个血是Als血，那么根据血液分析师的说法，它是A型的。因此，门廊上的血是Als的。**

**6:87 Tom Jeffers, if he was seen in the hospital waiting room at 10 P.M. and at midnight, did not do it. Someone claimed to see him, but the identification was a mistake. Because he really was not seen in the hospital waiting room at 10 P.M. and at midnight, he did it.  
6:87 Tom Jeffers，如果他在晚上10点和午夜被看到在医院候诊室里，那就不是他做的。有人声称看到了他，但是认错了。因为他真的没有在晚上10点和午夜被看到在医院候诊室里，所以是他做的。**­

**6:88 If it has not been proven beyond a reasonable doubt that she knew that at least there was a strong probability that she would do him serious harm, then she is not guilty. However, it has been proven beyond a reasonable doubt that she knew that there was a strong probability that she would do him serious harm. Therefore, she is guilty.  
如果没有被合理怀疑证明她知道至少有很大的可能性会给他造成严重伤害，那么她就不会有罪。然而，已经被合理怀疑证明她知道有很大的可能性会给他造成严重伤害。因此，她有罪。**­

(Suggestion: Use PBRD to stand for proven beyond a reasonable doubt.) 6:89 Arlene did not admit that she did it, if she did not do it. But she did admit that she did it. Clearly then, she did it.  
(建议：使用PBRD代表被证明超出合理怀疑的) 6:89 Arlene没有承认她做了这件事，如果她没有做。但她承认她做了这件事。显然，她做了。

**6:90 Joanna is not a liberal, if she did not support the prime minister. Therefore, if she supported the prime minister, she is a liberal.  
6:90乔安娜不是自由派，如果她不支持首相。因此，如果她支持首相，她就是自由派。**

**6:91 If the hogs are not behaving strangely, then they did not eat thistles recently. But they are behaving strangely. From all this, I conclude that they ate thistles recently.  
6:91 如果猪没有表现出奇怪的行为，那么它们最近没有吃蓟。但是它们正在表现出奇怪的行为。根据这一切，我得出结论它们最近吃了蓟。**

**6:92 If Michael has a conflict of interest, then his testimony is not to be trusted. If Michael’s brother is a suspect, then Michael has a conflict of interest. Michael’s brother is a suspect. Therefore, Michael’s testimony is not to be trusted.  
如果迈克尔存在利益冲突，那么他的证词就不可信。如果迈克尔的兄弟是嫌疑人，那么迈克尔存在利益冲突。迈克尔的兄弟是嫌疑人。因此，迈克尔的证词不可信。**

**6:93 If Shakespeare had intended Polonius to be a comic figure, then he would not have made Polonius the father of two tragic characters. But Polonius was made the father of two tragic characters, Laertes and Ophelia. Hence, Polonius was not intended by Shakespeare to be a comic figure.   
如果莎士比亚打算让波洛尼厄斯成为一个喜剧角色，那么他就不会把波洛尼厄斯塑造成两个悲剧人物的父亲。但是波洛尼厄斯被塑造成了两个悲剧人物，莱尔忒斯和奥菲利亚的父亲。因此，莎士比亚并没有打算让波洛尼厄斯成为一个喜剧角色。**

**6:94 No photosynthesis can be occurring in this plant. That this is so can be seen from the fact that it is not getting any light whatsoever. Furthermore, photosynthesis cannot occur in this plant, if there is no light reaching it.  
无法在这植物中进行光合作用。从它完全没有得到任何光线这一事实可以看出。此外，如果没有光线到达，光合作用无法发生在这植物中。**

**6:95 If the Board of Education suspends young Brown from school, then it will be punishing him for refusing on religious grounds to salute the flag. And if it does that, it will be acting unconstitutionally. Because the board, we can be sure, will not act unconstitutionally, we can be sure that the board will not suspend young Brown.  
如果教育局将年轻的布朗从学校停学，那么它将因为他出于宗教原因拒绝向国旗致敬而对他进行惩罚。如果教育局这样做，那么它将违反宪法。因为我们可以确定教育局不会违反宪法，所以我们可以确定教育局不会停学年轻的布朗。**

**6:96 If Arlene did not intentionally perform the act that caused Al’s death, then she is not guilty. But the prosecutor has proven beyond a reasonable doubt that Arlene did intentionally perform the act that caused Al’s death. Therefore, she is guilty.  
如果阿琳没有故意进行导致艾尔死亡的行为，那么她不会有罪。但是检察官已经在合理怀疑的基础上证明了阿琳故意进行了导致艾尔死亡的行为。因此，她有罪。**­able doubt that Arlene did intentionally perform the act that caused Al’s death. Therefore, she is guilty.

**6:97 Martin is wearing a red hat, if he thinks that hunters might be around. We just saw him and noticed that he is wearing a red hat. Therefore, he thinks that hunters might be around.  
6:97 马丁戴着一顶红帽子，如果他觉得猎人可能在附近。我们刚刚看到他，并注意到他戴着一顶红帽子。因此，他认为猎人可能在附近。**

**6:98 It has not been proven beyond a reasonable doubt that she believed that she was not safe. Therefore, it has been proven beyond a reasonable doubt that she believed that she was safe.  
6:98 没有被合理怀疑地证明她相信自己不安全。因此，已经被合理怀疑地证明她相信自己安全。**­able doubt that she believed that she was safe.

**6:99 If she believed that he wanted to hurt her, then it has not been proven beyond a reasonable doubt that she was not justified in using the force that she used. It is clear that she really did believe that he wanted to hurt her. Therefore, it has been proven beyond a reasonable doubt that she was justified in using the force that she used.  
如果她相信他想伤害她，那么尚未被合理怀疑证明她使用的力量是不合理的。很明显，她确实相信他想伤害她。因此，已经被合理怀疑证明她使用的力量是合理的。**

More Short Answer  
更多简短回答

­lows necessarily, write it in. Otherwise write For the following sets of reasons, if a conclusion that is different from the reasons follows necessarily, write it in. Otherwise write Nothing, by which you should mean that the conclusion that is probably intended does not follow necessarily. In any case, label the form of the probably intended argument. The first is done as an example.  
对于以下一系列的原因，如果结论与原因不同，写入。否则写入Nothing，意思是可能预期的结论并不必然成立。无论如何，标记可能预期的论证形式。第一个例子已经完成。

**6:100 If Anita stands to make a profit from your believing what she says, then you should be careful about believing what she says. It is clear that you should be careful about believing what she says. Therefore?  
如果安妮塔从你相信她所说的中获利，那么你应该对相信她所说的持谨慎态度。很明显，你应该对相信她所说的持谨慎态度。因此？**

*Nothing; AC*

**6:101 The spectator was lying, if the motorist told the truth about the accident. The spectator was certainly lying. Therefore?  
6:101 如果司机关于事故的陈述是真实的，那么旁观者就在撒谎。旁观者肯定在撒谎。所以？**­dent. The spectator was certainly lying. Therefore?

**6:102 If Amandita believes John, then she is a fool. However, Amandita is no fool. Therefore?  
6:102 如果Amandita相信John，那么她是个傻瓜。然而，Amandita不是傻瓜。所以？**

**6:103 If our leader tells you to commit suicide, then he is not worthy of being our leader. By ordering you to drink the poison, our leader has in effect told you to commit suicide. Therefore?  
如果我们的领导告诉你自杀，那么他不配成为我们的领导。通过命令你喝下毒药，我们的领导实际上是在告诉你自杀。因此？**

**6:104 Mr. Davis, if he was suspected to have a friendship with someone involved in the trial, was excused from the jury by the judge. Mr. Davis was excused from the jury by the judge. Therefore?   
6:104戴维斯先生，如果他被怀疑与参与审判的某人有友谊关系，将被法官免除陪审团职责。戴维斯先生被法官免除了陪审团职责。因此？**

**6:105 If Frankie did not step out of bounds, then the basket counts. But see, the referee is declaring that the basket does not count. Therefore?  
如果弗兰基没有越界，那么篮筐算进。但是看，裁判宣布篮筐不算。所以？**

**6:106 John, if Jane said “No,” went to the movies alone. John did not go to the movies alone. Therefore?  
如果简说不，约翰一个人去看电影。约翰没有一个人去看电影。所以？**

**6:107 If the state has not proven beyond a reasonable doubt that she was not justified in using the force that she used, then she is not guilty. However, the state has proven beyond reasonable doubt that she was not justified in using the force that she used. Therefore?  
如果国家无法证明她使用的武力不是合理的，那么她就不会有罪。然而，国家已经证明她使用的武力不是合理的。因此？**

**6:108 If Arlene did not believe that circumstances existed that would justify the killing of Al, then she is not guilty of voluntary manslaughter. However, Arlene did believe that such circumstances existed. She was very jealous and believed that he was disloyal to her. Therefore?  
如果阿琳不相信存在可以证明杀害艾尔的情况，那么她不会对故意杀人罪负有罪责。然而，阿琳确实相信存在这样的情况。她非常嫉妒，并且相信他对她不忠。因此？**

Saving Time with Letters  
用信件节省时间

In propositional logic, we can save time in organizing arguments by using letters to represent each significant proposition in an argument. An arrow is used to show the if-then relationship. This system helps us show not only the overall picture, but also the way the parts are put together in complex propositions. This in turn helps us to decide whether the argument is deductively valid.  
在命题逻辑中，我们可以通过使用字母来代表论证中每个重要命题，从而节省组织论证的时间。箭头用于表示如果-那么的关系。这个系统不仅帮助我们展示整体图景，还帮助我们展示复杂命题中各部分的组合方式。这反过来帮助我们判断论证是否具有演绎有效性。

For propositional assignments, it is fairly traditional to use small letters, starting with p, then q, then r, etc. We assign a different letter to each basic proposition, generally using p to represent the antecedent. For our standard Ben example:  
对于命题赋值，通常使用小写字母，从p开始，然后是q，然后是r等等。我们为每个基本命题分配一个不同的字母，通常使用p代表前件。对于我们的标准Ben示例：­erally

Let p = Ben is a cat.  
p = Ben是一只猫。

Let q = Ben is an animal.  
q = Ben是一只动物。

If you prefer, you can instead assign letters that have some connection with the proposition. For example, the assignment could be as follows:  
如果你愿意，你可以选择分配与命题有某种联系的字母。例如，分配可以如下所示：

Let be = Ben is a cat (b for Ben; c for cat).  
Let be = Ben is a cat (b for Ben; c for cat)." "让 be = Ben 是一只猫 (b 代表 Ben；c 代表猫)。

Let ba = Ben is an animal.  
ba = Ben是一只动物。

With these assignments, our standard affιrming-the-antecedent example looks like this:  
使用这些任务，我们的标准肯定前提的示例如下：

Example 6:18

1. If Ben is a cat, Ben is an animal, p→ q  
   如果Ben是一只猫，Ben是一只动物，p→ q。

*md —» ma*

*be*

Therefore, *ba*

1. Ben is a cat. p OR  
   Ben是一只猫。
2. Therefore, Ben is an animal. Therefore, q  
   因此，Ben是一只动物。因此，q

The fact that p (or be) is to the left of the arrow shows it to be the antecedent in a. It is this same thing that is affirmed in b, so the argument is a case of affirming the antecedent. You knew this all along, but the example is helpful in showing how to use letters and arrows.   
p（或be）在箭头的左边表明它是a中的前提。b中也肯定了同样的事情，所以这个论证是肯定前提的情况。你一直知道这一点，但是这个例子对于展示如何使用字母和箭头是有帮助的。

Henceforth, I shall use the traditional letter assignments (p, q, r, etc.). You should use whatever letter system you prefer.  
从现在开始，我将使用传统的字母分配（p，q，r等）。您应该使用您喜欢的字母系统。

The negation of the proposition p is represented by not p, meaning It is not the case thatp. Here is a symbolization of an argument ol the form, denying the consequent, using the same assignment of p and q as was used previously  
命题p的否定由not p表示，意思是不是p的情况。这里是一个以否定结论的形式进行符号化的论证，使用之前相同的p和q的赋值。­quent, using the same assignment of

Example 6:19

a. If Ben is a cat, then Ben is an animal, a. b. Ben is not an animal. b.  
如果Ben是一只猫，那么Ben就是一只动物。

*P~\* 1 not* q Therefore, not *p*

**c. Therefore, Ben is not a cat. c.  
因此，Ben不是一只猫。**

­tion, instead of showing the negation of a proposition. Consider the argument in Example 6:20:Sometimes it is convenient to assign a letter to a proposition containing a negation, instead of showing the negation of a proposition. Consider the argument in Example 6:20:  
有时候，为了表示一个命题的否定，而不是展示一个命题的否定，给一个命题指定一个字母是很方便的。考虑例子6:20中的论证。

Example 6:20

1. Tom Jeffers did not do it, if he was seen in the hospital waiting room between 10 P.M. and midnight.  
   如果在晚上10点到午夜期间在医院候诊室见到汤姆·杰弗斯，那他就没有做这件事。
2. He was seen in the hospital waiting room between 10 p.m. and midnight.  
   他在晚上10点到午夜之间被看到在医院候诊室。
3. Therefore, he did not do it.  
   因此，他没有做。

Let p = He was seen in the hospital waiting room between 10 p.m. and midnight.  
让 p = 他在晚上10点到午夜之间被看到在医院候诊室。

Let q = Tom Jeffers did not do it. (The negation, not, is here treated as part of q.)  
q = 汤姆·杰弗斯没有做这件事。（否定词“不”在这里被视为q的一部分。）

The argument can be represented as in Example 6:21:  
该论点可以表示为示例6:21中的方式：

Example 6:21

**a∙ T→** *q*

1. *p\_*
2. Therefore, *q*

Here is an assignment of letters that changes the assignment for q, although it makes the same assignment for p.  
这是一个改变了q的分配的字母分配任务，尽管它对p的分配保持不变。

Let p = He was seen in the hospital waiting room between 10 p.m. and midnight.  
让 p = 他在晚上10点到午夜之间被看到在医院候诊室。

Let q = Tom Jeffers did it. (The negation here is not treated as part of q.)  
q = 汤姆·杰弗斯做了这件事。（这里的否定不被视为q的一部分。）

In this new assignment for q, the not has been omitted from the proposition to which q is assigned. So, we must take care of this fact in representing the argument:  
在这个新的任务中，命题 q 的否定已被省略。因此，在表示论证时，我们必须注意这个事实。

Example 6:22

1. *p* **→ not** *q*
2. *p*
3. Therefore, not *q*

­ment. I find the first way more convenient; you might prefer the second. Either way is all right, as long as you stay with your original assignment throughout your analy­sis of the argument Be consistent.Examples 6:21 and 6:22 are two different ways of representing the same argument. I find the first way more convenient; you might prefer the second. Either way is all right, as long as you stay with your original assignment throughout your analysis of the argument Be consistent.  
例子6:21和6:22是表示相同论点的两种不同方式。我觉得第一种方式更方便；你可能更喜欢第二种。无论哪种方式都可以，只要你在分析论点时始终坚持你最初的任务。保持一致。

Summary  
摘要

­ual letters to propositions and to represent the argument in terms of these letters. Use arrows to represent In evaluating complicated deductive arguments, it is often helpful to assign individual letters to propositions and to represent the argument in terms of these letters. Use arrows to represent if-then relationships, and the word τwZ^ to represent negation. In so doing, make sure that the same letter represents the same proposition throughout the argument.  
在评估复杂的演绎论证时，通常将个别字母分配给命题，并以这些字母表示论证。使用箭头表示如果-那么关系，并使用词语τwZ^表示否定。在这样做时，请确保同一个字母在整个论证中表示相同的命题。

Check-Up 6D

True or False?  
真或假？

If a statement is false, change a crucial word or words to make it true.  
如果一个陈述是错误的，请改变一个关键的词或词组使其变为真实。

**6:109 Small letters are generally used to represent propositions.  
小写字母通常用来表示命题。**

**6:110 The q ifp relationship is represented by p → q.  
6:110 q ifp 关系由 p → q 表示。**

**6:111 In the symbolization, q → r, the antecedent is q.  
在符号化中，q → r，前件是q。**

**6:112 In the symbolization, r → p, the consequent is p.  
在符号化中，r → p，结论是p。**

**6:113 The following symbolized lines of reasoning are deductively valid:  
以下的符号化推理是演绎有效的：**

1. **a.** *p → q*
2. not *q*
3. Therefore, not *p*
4. **a.** *p* → not *q*

b.£

c. Therefore, not *q*

**6:114 The following symbolized lines of reasoning are deductively invalid:  
以下符号化的推理线路是无效的：**

1. **a.** *p* → not *q*
2. not *q*
3. Therefore, *p*
4. a. *p* → not *q*
5. £
6. Therefore, not *p*

**6:115 The form of example #1 in 6:113 is denying the consequent.  
6:115在6:113中的例子形式#1是否定了结果。** form of example #1 in 6:113 is

**6:116 The form of example #2 in 6:113 is affirming the antecedent.  
6:116 在6:113中的第2个例子的形式是肯定前件。** form of example #2 in 6:113 is

**6:117 The form of example #1 in 6:114 is denying the consequent.  
6:117在6:114中的例子形式#1是否定后果。** form of example #1 in 6:114 is

**6:118 The form of example #2 in 6:114 is affirming the consequent.   
6:118 在6:114中，例子#2的形式是肯定结论。** form of example #2 in 6:114 is

Short Answer  
简答题

­ment in symbols. The first is done as an example.For the next items, assign letters to the propositions, and represent the total statement in symbols. The first is done as an example.  
对于下面的项目，请为命题分配字母，并用符号表示整个陈述。第一个已经作为示例完成。

**6:119 If John is in school, then Mary is happy.  
如果约翰在学校，那么玛丽就开心。**

Let p = John is in school  
p = 约翰在学校

Let *q = Mary is happy. p → q*

**6:120 If Karl lost the election, then he was depressed.  
如果卡尔输掉选举，那么他就会感到沮丧。**

**6:121 Estelle is happy if Marguerite is here.  
6:121 Estelle如果Marguerite在这里，她就很开心。**

**6:122 Karl lost the election if he was depressed.  
6:122 卡尔如果沮丧，他就输掉了选举。**

**6:123 The supervisor forgot about us if there is a shortage of concrete.  
6:123 主管忘记了我们，如果混凝土不足。**

**6:124 The cattle, if junipers are poisonous, are in danger.  
6:124 牛，如果雪松有毒，就会有危险。**

For rhe next set of items, state the final conclusion, assign letters, represent the argument symbolically, label the type of logical move, and judge the validity. Show your judgment as before, using AA, DA, AC, DC, CONTR, CONV, EDN, or NDN, and DV or DI. You have seen these items before. They are presented here again for practice in using symbols. By doing the same items both ways, you can see whether symbols make things like this easier for you. The first is done as an example.  
对于下一组项目，请陈述最终结论，指定字母，用符号表示论证，标记逻辑移动的类型，并判断有效性。像之前一样展示你的判断，使用AA，DA，AC，DC，CONTR，CONV，EDN或NDN，以及DV或DI。你之前见过这些项目。它们在这里再次呈现，以便练习使用符号。通过以相同的方式完成这些项目，你可以看到符号是否使这样的事情变得更容易。第一个作为示例完成。

6:125 If John is at work today, then Juanita is happy. I just saw Juanita and noticed that she is happy. Therefore, John is at work today.  
6:125 如果约翰今天在工作，那么胡安妮塔很开心。我刚刚看到胡安妮塔并注意到她很开心。因此，约翰今天在工作。

Final conclusion: John is at work today.  
最终结论：约翰今天在工作。

Let p = John is at work today.  
p = 今天约翰在工作。

Let *q = Juanita is happy.*

*p q*

*<L*

Therefore, *p* AC, DI

**6:126 If Pedro went out last night, then Mary is angry today. I have just seen Mary and she is not angry today. Therefore, Pedro did not go out last night.  
6:126 如果Pedro昨晚出去了，那么Mary今天生气。我刚刚见到Mary，她今天没有生气。因此，Pedro昨晚没有出去。**

6:127 Suziko lost the election. I conclude this because I know that if she lost the election, she is depressed. And clearly she is depressed.  
6:127 苏子子输掉了选举。我得出这个结论是因为我知道如果她输掉了选举，她会感到沮丧。而且很明显她感到沮丧。

*6:128 Terry, if she lied about her age, is in trouble. But she is not in trouble, so she did not lie about her age.  
6:128 Terry, 如果她谎报了年龄，那就麻烦了。但她没有麻烦，所以她没有谎报年龄。*

**6:129 Terry lied about her age, if she managed to get into the Blue Room. But Terry did not manage to get into the Blue Room. We saw her at Shack’s Fish & Chips. From all this, it follows that she did not lie about her age.  
6:129 特里谎称自己的年龄，如果她设法进入蓝色房间。但特里没有设法进入蓝色房间。我们在Shacks Fish & Chips看到了她。由此可见，她没有谎称自己的年龄。**

**6:130 Ibis blood on the porch is type A. If the blood is AΓs blood, then it is type A, according to the blood analyst. Hence, the blood on the porch is Al’s.  
6:130 鹮鸟血在门廊上是A型。如果血是AΓs血，那么根据血液分析师的说法，它是A型。因此，门廊上的血是Als。**

**6:131 Joanna is not a liberal, if she did not support the prime minister. Therefore, if she supported the prime minister, she is a liberal.   
6:131 Joanna不是自由派，如果她不支持首相。因此，如果她支持首相，她就是自由派。**

**6:132 If it has not been proven beyond a reasonable doubt that she knew that at least there was a strong probability that she would do him serious harm, she is not guilty. However, it has been proven beyond a reasonable doubt that she knew that at least there was a strong probability that she would do him serious harm. Therefore, she is guilty.  
如果没有被合理怀疑地证明她知道至少有很大的可能性会给他造成严重伤害，她就不会有罪。然而，已经被合理怀疑地证明她知道至少有很大的可能性会给他造成严重伤害。因此，她有罪。**­ous harm, she is not guilty. However, it has been proven beyond a rea­sonable doubt that she knew that at least there was a strong probabil­ity that she would do him serious harm. Therefore, she is guilty.

**6:133 If the Board of Education suspends young Brown from school, then it will be punishing him for refusing on religious grounds to salute the flag. And if it does that, it will be acting unconstitutionally. Because the board, we can be sure, will not act unconstitutionally, we can be sure that the board will not suspend young Brown.  
如果教育委员会将年轻的布朗从学校停学，那么它将因为他出于宗教原因拒绝向国旗致敬而对他进行惩罚。如果教育委员会这样做，那么它将违反宪法。因为我们可以确定，委员会不会违宪，所以我们可以确定委员会不会停学年轻的布朗。**

**6:134 If Michael has a conflict of interest, then his testimony is not to be trusted. If Michael’s brother is a suspect, then Michael has a conflict of interest. Michael’s brother is a suspect. Therefore, Michael’s testimony is not to be trusted.  
如果迈克尔存在利益冲突，那么他的证词就不可信。如果迈克尔的兄弟是嫌疑人，那么迈克尔存在利益冲突。迈克尔的兄弟是嫌疑人。因此，迈克尔的证词就不可信。**

Conjunction, Alternation, and Embedded Complex Propositions  
连词、交替和嵌入复合命题

In the following argument (which you saw at the beginning of this chapter), two propositions are conjoined (connected by the word and). The two are then treated as one unit and become the antecedent for the overall implication. Can you assign letters and judge the deductive validity? The basic propositions are italicized:  
在接下来的论证中（你在本章开头看到的），两个命题被连接（通过单词and）。这两个命题随后被视为一个整体，并成为整体蕴含的前提。你能够为它们分配字母并判断演绎有效性吗？基本命题已用斜体标出：

Example 6:23

If parking is prohibited on this street and Sybil parked there last night, then Sybil is in trouble. However, I know that Sybil is not in trouble, and that parking is prohibited on this street. Therefore, she did not park there last night.  
如果在这条街上禁止停车，而Sybil昨晚停在那里，那么Sybil会有麻烦。然而，我知道Sybil没有麻烦，并且在这条街上禁止停车。因此，她昨晚没有停在那里。

Try it before I discuss it in the next section.  
在下一节中讨论之前，请先尝试一下。

Conjunction and Embedded Complex Propositions  
连词和嵌套复合命题

The propositions in Example 6:23 can be assigned letters as follows:  
Example 6:23的命题可以如下赋予字母。

Let p = Parking is prohibited on this street.  
禁止在这条街上停车。

Let *q = Sybil parked there last night.*

Let r = Sybil is in trouble.  
让 r = Sybil 有麻烦。

The first two propositions are joined together by the word and, as in p and q. The way to show that they jointly form the antecedent is to put parentheses around them before adding the arrow to show implication, as in Example 6:24:  
第一和第二命题由and连接在一起，如p和q。显示它们共同形成前提的方法是在它们周围加上括号，然后再添加箭头以显示蕴含关系，如示例6:24。

Example 6:24

*{p* and *q) → r*

Thus, p and q are conjoined and the conjunction is embedded, in the whole implication.  
因此，p和q被连接并且连接词嵌入在整个蕴含中。

The first step in the argument is the denial of the consequent, r, resulting in the denial of the conjunction:  
论证的第一步是否定后果r，导致否定连词：

Example 6:25

*(p* and *q) → r*

not *r*

Therefore, not (p and q)  
因此，非（p 和 q）

It is important to retain the parentheses in the conclusion of Example 6:25 because it is the whole conjoined unit that is being denied, not any individual part. This conclusion can be read, “Not both p and q.” The conclusion does not tell us which of the parts is denied. It only tells us that at least one is to be denied (or perhaps both). The next step in the argument clarifies this because the original argument asserts p. The next step is reasoning from a denied conjunction, one part of which is affirmed:  
在例子6:25的结论中保留括号是很重要的，因为被否定的是整个连接单元，而不是任何个别部分。这个结论可以理解为，既不是p也不是q。结论并没有告诉我们哪个部分被否定了，它只告诉我们至少有一个部分被否定了（或者可能是两个部分都被否定了）。论证的下一步对此进行了澄清，因为原始论证断言了p。下一步是基于一个被否定的连接，其中的一部分被肯定：­haps both). The next step in the argument clarifies this because the original argument asserts

Example 6:26

not *{p* and *q)* (This is the conclusion of Example 6:25. Wc use it in this next step.)

£

Therefore, not *q*

­sons given.If one part of a denied conjunction is affirmed, the other must be denied. They cannot both be accepted, so the argument is deductively valid. The conclusion of Example 6:23, “She did not park there last night,” follows necessarily from the reasons given.  
如果否定联结的一部分被肯定，另一部分必须被否定。它们不能同时被接受，所以这个论证是演绎有效的。根据给出的理由，例子6:23的结论是必然的：她昨晚没有停在那里。

This type of argument will appear again in Chapters 8 and 9 in connection with the refutation of hypotheses. It is a combination of *denial of the consequent* and *affir­mation of one part of a negated conjunction.* This last label is long and awkward, but at least it describes what happens. There is no good label for it without inventing another technical term.[[7]](#footnote-7)

When a conjunction of propositions appears by itself, and is affirmed, then it is implied that each conjunct can be affirmed separately. For example, if someone said, “Parking is prohibited on this street and Sybil parked there yesterday,” it would deductively follow from the conjunction that parking is prohibited on this street. But if the conjunction is denied, and there is no other information, then the denial of each or either does not follow deductively. All that we know then is that at least one is to be denied, but we do not yet know which one.   
这种类型的论证将在第8章和第9章再次出现，与假设的反驳有关。它是否定结论和肯定否定联结的一部分的组合。这个最后的标签很长而笨拙，但至少描述了发生的情况。没有一个好的标签来描述它，除非发明另一个技术术语。[8]当一组命题连词单独出现并被肯定时，暗示着每个连词都可以单独肯定。例如，如果有人说，这条街上禁止停车，西比尔昨天停在那里，那么从这个连词中可以推断出在这条街上禁止停车。但是如果否定了这个连词，并且没有其他信息，那么每个或任何一个的否定并不是推理的结果。我们只知道至少有一个要被否定，但我们还不知道是哪一个。

Alternation  
交替

An alternation consists of two propositions (alternants) connected by the word or, as in Myrna is going back to California, or she is foolish. The denial of either alternant then implies the assertion of the other. Suppose that Myrna is not going back to California. It follows that she is foolish. Suppose that she is not foolish. It follows that she is going back to California. Example 6:27 illustrates the first of these two deductively valid arguments.  
一个交替由两个命题（交替者）通过或连接，例如Myrna回到加利福尼亚，或者她很愚蠢。否定其中一个交替者则意味着肯定另一个。假设Myrna不回到加利福尼亚，那么她就是愚蠢的。假设她不愚蠢，那么她就会回到加利福尼亚。例子6:27说明了这两个推理有效的论证之一。­tively valid arguments.

Example 6:27

Let p = Myrna is going back to California.  
p = Myrna回到加利福尼亚。

Let √ = *She is foolish.*

1. Mvrna is going back to California, or she is foolish, *p* or *q*
2. Myrna is not going back to California. not p  
   迈尔娜不会回到加利福尼亚。
3. Therefore, Therefore, she is foolish. Therefore, q  
   因此，她是愚蠢的。

Denial of an alternant; DV  
否认替代者；DV

Example 6:28 illustrates the denial of the other alternant:  
例子6:28展示了对另一种选择的否认。

Example 6:28

1. Myrna is going back to California, or she is foolish, p or q  
   迈尔娜要回加利福尼亚，或者她很愚蠢，p或q
2. Myrna is not foolish. not q  
   迈尔娜不傻。
3. Therefore, Myrna is going back to California. Therefore, p Denial of an alternant: DV  
   因此，Myrna要回加利福尼亚。因此，p拒绝替代：DV

On the other hand, the affirmation of either of these alternants does not imply the denial of the other. For example, suppose that Myrna is foolish. That does not imply that she is not going back to California. Her going is not precluded by the alternation and her being foolish. She might go for some foolish reason. Similarly, suppose that she is going back to California. That, together with the alternation, does not imply that she is not foolish. Again, she might be going back for some foolish reason. Example 6:29 presents this latter case.  
另一方面，肯定这两个选择中的任何一个并不意味着否定另一个。例如，假设Myrna是愚蠢的。这并不意味着她不会回到加利福尼亚。她的离开并不受到选择和愚蠢的限制。她可能出于某种愚蠢的原因而离开。同样，假设她正在回到加利福尼亚。这个选择与另一个选择一起，并不意味着她不愚蠢。同样，她可能因为某种愚蠢的原因而回去。例子6:29展示了这个后一种情况。

Example 6:29

1. Myrna is going back to California, or she is foolish, p or q  
   迈尔娜要回加利福尼亚，或者她很愚蠢，p或q
2. Myrna is going back to California. p  
   Myrna回到加利福尼亚。
3. Therefore, Therefore, she is not foolish. Therefore, not q  
   因此，她不是愚蠢的。

Affirmation of weak alternant; DI  
弱交替的确认；DI

+ However, in a strong sense of the word or, the affirmation of either alternant does imply the denial of the other, as in Either Marguerite is at the movies or she is with Estelle. Example 6:30 illustrates the use of the strong or.   
然而，在强烈的意义上，任何一个选择的肯定都意味着对另一个选择的否定，就像玛格丽特要么在电影院，要么和埃斯特尔在一起。例子6:30展示了强烈或的用法。

Example 6:30

Let p = Marguerite is at the movies.  
令 p = 玛格丽特在电影院。

Let q = She is with Estelle.  
q = 她和Estelle在一起。

1. *Either Marguerite is at the movies or she is with Estelle, p or q  
   无论是玛格丽特在电影院还是她和埃斯特尔在一起，p或q*
2. Marguerite is at the movies. P  
   玛格丽特在电影院。
3. Therefore, not Therefore, she is not with Estelle. Therefore, not q  
   因此，她不和Estelle在一起。

Affirmation of strong alternant; DV  
强替代的确认；DV

+ You must decide from the situation which sense of oris in use, the weak sense (as in Examples 6:27, 6:28, and 6:29), or the strong sense (as in Example 6:30). But remember, there is no free ride. If the strong sense is in use, the alternation reason («) is harder to establish, so the total argument might be in trouble if the strong sense is in use. If in doubt, I suggest the weak interpretation.  
你必须根据情况判断oris的使用方式，是弱义（如例子6:27、6:28和6:29中所示）还是强义（如例子6:30中所示）。但请记住，没有免费的午餐。如果使用强义，那么交替原因（«）更难确定，所以如果使用强义，整个论点可能会有问题。如果有疑问，我建议采用弱解释。

Summary  
摘要

When two propositions are conjoined by the word and, they form a unit. If the whole unit is asserted, that implies that each conjunct can be asserted separately. If the unit is denied (or negated), then at least one conjunct must be denied. Without further information, it is not clear which one is the one to be denied. Furthermore, the unit can itself be a proposition in an argument (as can any complex proposition). This is shown by the use of parentheses around the unit when it is represented symbolically.  
当两个命题被连词“和”连接时，它们形成一个整体。如果整个整体被断言，那意味着每个连词都可以单独断言。如果整体被否定，那么至少有一个连词必须被否定。没有进一步的信息，不清楚哪一个是要被否定的。此外，整体本身可以是一个论证中的命题（任何复杂命题都可以）。当它在符号上表示时，通过在整体周围使用括号来显示这一点。

When two propositions are connected by the word or, they are alternants. The denial of one alternant implies the assertion of the other, if the total alternation is asserted.  
当两个命题被词语或连接时，它们是可替代的。如果肯定整个替代，否定一个替代就意味着肯定另一个替代。

+ However, unless the alternation is a strong alternation, the assertion of one alternant does not imply the denial of the other. You must determine from the situation whether the or is strong or weak. If in doubt, I suggest that vou choose the weak interpretation.  
然而，除非交替是一个强交替，一个交替的断言并不意味着否定另一个。您必须根据情况确定或的强度是强还是弱。如果有疑问，我建议您选择弱解释。­ation whether the

Check-Up 6E

True or False?  
真或假？

If the statement is false, change a crucial word or words to make it true.  
如果陈述是错误的，请更改一个关键词或几个关键词使其变为正确。

**6:135 The affirmation of one conjunct implies the denial of the other.  
6:135 一个条件的肯定意味着另一个条件的否定。**

6:136 The denial of one weak alternant implies the affirmation of the other.  
6:136 一个弱变体的否认意味着另一个的肯定。

6:137 Affirming a conjunct in a negated conjunction is a deductively valid move.  
6:137 在否定的连词中肯定一个连词是一种推理上有效的举措。

6:138 Denying a conjunct in a negated conjunction is a deductively valid move.  
6:138 否定连词中否定一个连接词是一种推理上有效的操作。

­tions: (1) 6:139 There is little practical difference between these two complex propositions: (1) not (p and qy) and (2) notγ> and q.  
这两个复杂命题之间几乎没有实际区别：(1) 不是(p and qy) 和 (2) 不是γ> and q。

+ 6:140 The affirmation of one strong alternant implies the denial of the other.  
一个强烈的替代肯定意味着另一个的否定。

+ 6:141 The affirmation of one weak alternant implies nothing about the other.   
一个弱交替的肯定对另一个没有任何影响。

Short Answer  
简答题

State the conclusion, assign letters, symbolize the argument, judge the deductive validity, and give your reason.  
陈述结论，指定字母，符号化论点，判断演绎有效性，并给出你的理由。

**6:142 This piece of cloth is warm and it is 50 percent wool. If the dog is shivering from cold, then the cloth is not warm. Therefore, the dog is not shivering from cold.  
这块布很暖和，它有50%的羊毛。如果狗因为寒冷而发抖，那么这块布就不暖和。因此，狗不是因为寒冷而发抖。**

**6:143** If the label on this piece of cloth reads “50 percent wool,” then it is 50 percent wool. This morning John, who knows about such things, said that the piece of cloth is warm, but it is only 25 percent wool. Therefore, the label certainly does not read “50 percent wool.”

**6:144 Thomas Jefferson did not make the mistake of which you are accusing him. If he had, then he would not have been an astute politician. But he was a scholar; he was a gentleman; and he was an astute politician.  
6:143 如果这块布料上的标签写着50%的羊毛，那么它就是50%的羊毛。今天早上，懂这些事情的约翰说这块布料很保暖，但实际上只有25%的羊毛。因此，标签肯定不是写着50%的羊毛。 6:144 托马斯·杰斐逊没有犯你指责他的错误。如果他犯了，那他就不会是一个精明的政治家。但他是一个学者，他是一个绅士，他也是一个精明的政治家。**

**6:145 Either there will be rain within the week, or the crops will be ruined. We can be sure that it will not rain within the week. Hence, we can be sure that the crops will be ruined.  
6:145 这个星期内要么会下雨，要么庄稼会被毁坏。我们可以确定这个星期内不会下雨。因此，我们可以确定庄稼会被毁坏。**

**+ 6:146 The two colors that you select will match or the room will be ugly. If I help you select the colors, then they will match. I am going to help you select the colors. Therefore, the room will not be ugly.  
你选择的两种颜色要么搭配，要么房间会很丑。如果我帮你选择颜色，它们就会搭配。我将帮你选择颜色。因此，房间不会很丑。**

**6:147 Abraham Lincoln must have thought that his Gettysburg Address was a failure. The following reasons make this apparent: Either he thought that it was reverently received, or he thought that it was a failure. From his remarks made immediately afterward, we can be sure that he did not think that it was reverently received.  
6:147 亚伯拉罕·林肯一定认为他的葛底斯堡演说是个失败。以下原因使这一点显而易见：要么他认为它受到了崇敬，要么他认为它是个失败。从他随后发表的讲话中，我们可以确定他并不认为它受到了崇敬。**

**6:148 If Dick took a driver training course and passed it with a grade of B or higher, then he is entitled to a lower rate on automobile insurance. Dick did take a driver training course. Therefore, he is entitled to a lower rate on automobile insurance.  
如果迪克参加了驾驶培训课程并且以B或更高的成绩通过了，那么他有资格享受汽车保险的较低费率。迪克确实参加了驾驶培训课程。因此，他有资格享受汽车保险的较低费率。**

**6:149 I believe that Tom Jeffers did not stab Al. Here’s why: Either Tom was in the hospital when the stabbing took place five miles away or, during the ten minutes when he was not under observation, he managed to travel to the site, spend some time, and return. If he did all that, then he is superman—and we all know he is not anything like superman. Not Tom Jeffers. If he was in the hospital when the stabbing took place, then he did not stab Al. I rest my case.  
我相信汤姆·杰弗斯没有刺伤阿尔。原因如下：要么在刺伤发生的五英里外时，汤姆在医院里，要么在他没有被观察的十分钟内，他设法前往现场，花了一些时间，然后返回。如果他做到了这一切，那他就是超人，而我们都知道他不像超人。不是汤姆·杰弗斯。如果他在刺伤发生时在医院里，那么他就没有刺伤阿尔。我休息我的案子。**­­bing took place, then he did not stab

**6:150 If Pedro has lived in his election district for over thirty days, and is over eighteen, he is entitled to vote. Pedro has lived in his election district for over a year, and he turned nineteen last month. Therefore, he is entitled to vote.  
如果佩德罗在选区居住超过三十天，并且年满十八岁，他有权投票。佩德罗在选区居住了一年多，上个月他满了十九岁。因此，他有权投票。**

**6:151 Hamlet must not have been in doubt of the guilt of his uncle. Consider: He certainly was not both in doubt of the guilt of his uncle and convinced that he had actually spoken to his father’s ghost. He was convinced that he had actually spoken to his father’s ghost. Hence, in his mind there was no doubt of the guilt of his uncle.   
6:151 哈姆雷特一定对他的叔叔的罪行没有疑问。考虑一下：他肯定不会既对他叔叔的罪行有疑问，又相信他实际上与他父亲的鬼魂交谈过。他相信他实际上与他父亲的鬼魂交谈过。因此，在他的心中，对他叔叔的罪行没有任何疑问。**

**6:152 You have seen rainbows when it was raining, and you have seen rainbows when it is sunny. But one thing is certain: It is not the case both that there is a rainbow now and that the sky is completely overcast now. You will note that there is no rainbow now. From this, it follows that the sky is completely overcast now. There is no way around it.  
6:152 当下雨时，你看到过彩虹；当阳光明媚时，你也看到过彩虹。但有一件事是确定的：现在既有彩虹又有完全阴天的情况是不可能的。你会注意到现在没有彩虹。由此可知，现在天空完全阴天。无可辩驳。**­bows when it is sunny. But one thing is certain: It is not the case both that there is a rainbow now and that the sky is completely overcast now. You will note that there is no rainbow now. From this, it follows that the sky is completely overcast now. There is no way around it.

**6:153 It is not true both that Sheila is in love with Jim and at the same time in love with John. Nobody can be in love with two different people at the same time. From all we can see, it is clear that Sheila is in love with Jim. Therefore, Sheila is not in love with John.  
6:153 谢拉既不爱吉姆也同时爱约翰这是不真实的。没有人能同时爱上两个不同的人。从我们所看到的一切来看，谢拉明显爱上了吉姆。因此，谢拉不爱约翰。**

**6:154 I do not agree that it is not possible to be in love with two people at the same time. But be that as it may, I still think that we can conclude that Sheila is not in love with John. Here’s why: If Sheila is in love with John, then she will have secured John’s signature in her yearbook. Now she did not both secure John’s signature in her yearbook and go to the dance with Jim. If she did not go to the dance with Jim, then she is at home right now. I just checked, and she is not at home, so you can see why I think that she is not in love with John. It follows.  
6:154 我不同意不能同时爱上两个人的说法。但无论如何，我仍然认为我们可以得出结论：希拉不爱约翰。原因如下：如果希拉爱约翰，她会在年鉴上得到约翰的签名。现在她既没有在年鉴上得到约翰的签名，也没有和吉姆一起去跳舞。如果她没有和吉姆一起去跳舞，那么她现在应该在家。我刚刚检查过，她不在家，所以你可以明白我为什么认为她不爱约翰。这是推理出来的。**

**6T55 Arlene is not both guilty of murder and innocent of voluntary manslaughter. If she might have been justified in using the amount of force she used, then she is innocent of voluntary manslaughter. Therefore, she is not guilty of murder because she might have been justified in using the amount of force she used.  
6T55 Arlene既不是谋杀罪的罪犯，也不是自愿杀人罪的无辜者。如果她在使用的武力程度上可能是合理的，那么她就是自愿杀人罪的无辜者。因此，她不是谋杀罪的罪犯，因为她在使用的武力程度上可能是合理的。**

Suggested Answers for Chapter 6  
第六章的建议答案

**Check-Up 6A**

**6:1 T 6:2 F 6:3 T 6:4 F 6:5 T 6:6 T**

6:7 F 6:8 F

**6:2 Omit clause starting with but.  
省略以但开头的从句。**

**6:4 Replace is the same with in one is the consequent in the other.  
6:4 替换与另一个中的结果相同。**

**6:7 Change first to after the if.  
6:7 将第一个改为 if 后面的位置。**

**6:8 Move the if to the beginning of the first clause in a.  
将 if 移至 a 的第一个从句的开头。**

**6:9-6:10 These were done as examples.  
这些是作为示例完成的。**

**6:11-6:28 The antecedent is a and the consequent is b∙.  
6:11-6:28 前项是 a，后项是 b∙。**

**6:11 a. junipers . . . poisonous  
6:11 a. junipers . . . poisonous**

**b. the cattle . . . in danger  
牛群...处于危险中**

**6:12 a. junipers . . . poisonous  
6:12 a. junipers . . . poisonous**

**b. The cattle . . . in danger  
牛群...处于危险中**

**6:13 a. the supervisor . . . us  
6:13 a. 上级...我们**

b. there . . . concrete  
那里...具体

**6:14 a. Tetry . . . Room  
6:14 a. Tetry . . . Room**

b. she . . . age  
她...年龄

**6:15 a. Terry . . . age  
6:15 a. Terry . . . 年龄**

b. she . . . Room  
她...房间

**6:16 a. Joanna . . . liberal  
6:16 a. Joanna . . . liberal**

**b.** she . . . minister

6:17 a. she . . . minister b. Joanna . . . liberal  
6:17 a. 她 . . . 部长 b. 琼娜 . . . 自由派

6:18 a. Arlene admitted . . . it b. she did it  
6:18 a. 阿琳承认...它 b. 她做了

*Note: Henceforth in this set, odd-numbered answers will be omitted.  
注意：在本组中，奇数编号的答案将被省略。*

6:20 a. she admitted . . . it  
6:20 a. 她承认...它

b. Arlene did it

6:22 a. she . . . death  
6:22 a. she . . . death

b. she . . . him  
她...他

6:24 a. it . . . A  
6:24 a. it . . . A

b. The blood . . . blood  
血液...血液

6:26 a. Tom . . . midnight  
6:26 a. Tom . . . midnight

b. he did not do it  
他没有做这件事。

Check-Up 6B

6:27 T 6:28 T 6:29 T

6:30 Change *valid* to *invalid.*

6:32 Done as an example.

6:33 DC, DV 6:34 AC, DI

6:37 DA, DI 6:38 AC, DI

6:40 DC, DV 6:41

6:30 F 6:31 T

6:35 DC, DV 6:36 AC, DI

Deliberately omitted.

6:39 Deliberately omitted.

Check-Up 6C

6:42 T 6:43 F 6:44 T 6:45 T 6:46 T 6:47 T

6:48 F 6:49 T 6:50 T 6:51 F 6:52 T

6:43 Change the converse of to the same as.  
将...的逆转为与...相同。 *converse of*

6:48 Two negatives usually make a positive.  
6:48 通常两个负数会变成正数。

6:51 One way: Exchange the antecedent and the consequent in the second reason.  
6:51 一种方法：交换第二个原因中的前因和后果。

6:53 Done as an example.  
6:53 完成作为一个例子。

6:54 [Blank] . . . if  
6:54 [Blank] . . . if

6:55 If. . . then  
6:55 如果...那么

6:56 If. . . then  
如果. . . 那么

6:57 Deliberately omitted.

6:58 Done as an example.  
6:58 完成作为一个例子。

6:59 Motorcycles are permitted.  
6:59 摩托车是允许的。

6:60 The diamond is in the queen’s crown.  
6:60 钻石在女王的皇冠上。

6:61 Not eliminable.

6:62 If Arlene did it, then she admitted that she did it.  
如果阿琳做了，那么她承认她做了。

6:63 Deliberately omitted.

6:64 Not eliminable.

6:65 Deliberately omitted.

6:66 Not eliminable because one negation is in an antecedent and the other in a consequent.  
6:66 不可消除，因为一个否定词在前提中，另一个在结论中。

6:67 If Arlene did not do it, then she did not admit doing it.   
如果阿琳没有做，那么她没有承认做过。

6:68 If our cattle are not ill, then junipers are not poisonous.  
如果我们的牛没有生病，那么杜松树就不会有毒。

6:69 If the blood is not type A, then it is not Al’s blood.  
如果血液不是A型，那么它就不是Als的血液。

6:70 If the vehicle is not prohibited, then it does not have a motor.  
如果车辆没有被禁止，那么它就没有发动机。

6:71 If Sara Lee was admitted to the Panama Club, she lied about her age. 6:72 If we do not have enough concrete, the supervisor forgot about us. 6:73 If Martin does not think that hunters might be around, then he is not wearing a red hat.  
6:71 如果Sara Lee被允许加入巴拿马俱乐部，她谎报了自己的年龄。6:72 如果我们没有足够的混凝土，主管忘记了我们。6:73 如果Martin不认为可能有猎人在附近，那么他没有戴红帽子。

6:74 If Shiboen did not buy it, then the gift is not inexpensive.  
如果Shiboen没有买，那么这个礼物就不便宜。

6:75 Deliberately omitted.

6:76 If the battery is not in bad condition, then you did not leave the lights on all night.  
如果电池没有损坏，那么你昨晚没有开着灯一整夜。

6:77 Deliberately omitted.

6:78-6:79 These were done as examples.  
这些是示例。

6:80 Karl did not lose the election. DC; DV  
6:80卡尔没有输掉选举。DC; DV

6:81 Mary did not go out last night DC; DV  
6:81 玛丽昨晚没有出去 DC; DV

6:82 If Terry is in trouble, then she lied about her age. CONV; DI  
如果Terry有麻烦，那么她谎报了自己的年龄。

6:83 She did not lie about her age. DA; DI  
她没有谎报年龄。DA; DI

6:84 If Mary . . . school. CONTR; DV  
6:84 如果玛丽...学校。CONTR; DV

6:85 There is not a shortage of concrete. DA; DI  
6:85 没有混凝土短缺。DA; DI

6:86 The blood on the porch is Al’s. AC; DI  
6:86 门廊上的血是Als的。AC; DI

6:87 He did it. DA; DI  
他做到了。DA; DI

6:88 She is guilty. DA; DI  
6:88 她有罪。DA; DI

6:89 She did it. DC; DV

6:90 If she supported the prime minister, she is a liberal. CONV of CONTR; DI.  
如果她支持首相，她是自由派。CONV of CONTR; DI.

*Note: This last item is more complicated than the previous ones in that the conclusion is neither simple conversion nor contraposition. Rather, it can be viewed as the conversion of the contrapositive (or the contraposition of the converse). The contrapositive of the original assertion is If she is ct liberal, then she supported the prime minister. This would follow necessarily, but the proposed conclusion is the converse of this.  
注意：这最后一项比之前的那些更加复杂，因为结论既不是简单的转换也不是对偶。相反，它可以被视为对偶的逆命题（或者逆命题的对偶）。原始断言的逆命题是如果她是ct自由主义者，那么她支持首相。这是必然的，但是提出的结论是这个命题的对偶。*­clusion is neither simple conversion nor contraposition. Rather, it can be viewed as the conversion of the contrapositive (or the contraposi­tion of the converse). The contrapositive of the original assertion is

Henceforth in this set and the next, odd-numbered answers are omitted.  
因此，在这一组和下一组中，奇数编号的答案被省略。

6:92 Michael’s testimony is not to be trusted. AA, AA; DV  
6:92迈克尔的证词不可信。AA，AA；DV

6:94 No photosynthesis can be occurring in this plant. AA; DV  
这个植物无法进行光合作用。AA; DV

6:96 She is guilty. DA; DI  
她有罪。DA; DI

6:98 It has been PBRD that she believed she was safe. NDN DI  
6:98 她相信自己是安全的，已经被证明是错误的。NDN DI

6:100 Done as an example.  
6:100 Done as an example.

6:102 Amandita does not believe John. DC  
6:102 Amandita不相信John. DC

6:104 Nothing. AC

6:106 Jane did not say “No.” DC  
简没有说不。DC

6:108 Nothing. DA

Check-Up 6D

6:109 T 6:110 T 6:111 T 6:112 T 6:113 T

6:114 F 6:115 T 6:116 T 6:117 F 6:118 F

6:114 #1 is deductively invalid, but not #2.   
6:114 #1是推理上无效的，但不是#2。

6:117 Replace denying with affirming.  
用肯定取代否定。

6:118 Replace affirming with denying.  
将肯定替换为否定。

6:119 Done as an example.  
作为一个例子完成。

6:120 Let p = Karl lost the election Let q = he was depressed.  
6:120 让 p = 卡尔输掉了选举 让 q = 他感到沮丧。

*P~\* cl*

6:121 Let ρ = Marguerite is here. Let q = Estelle is happy.  
6:121 让 ρ = 玛格丽特在这里。让 q = 埃斯特尔很开心。

*P* ’ 7

6:122 Let p = he was depressed. Let q = Karl lost the election, p→ q  
6:122 让 p = 他感到沮丧。让 q = 卡尔输掉了选举，p→ q

6:123 Deliberately omitted.

6:124 Ixt p = junipers are poisonous. Let q = The cattle are in danger, p~r q  
6:124 Ixt p = 陆地杜松是有毒的。让 q = 牛群处于危险中，p~r q

6:125 Done as an example.  
6:125 作为一个例子完成。

6:126 Final conclusion: Pedro did not go out last night.  
最终结论：Pedro昨晚没有出去。

Let p = Pedro went out last night.  
Let p = Pedro went out last night.

Let q = Mary is angry today.  
q = 今天玛丽生气。

*p→ q* not *q* Therefore, not *p* DC; DV

6:127 Final conclusion: Suziko lost the election.  
最终结论：Suziko输掉了选举。

Let p = Suziko lost the election. Let q = she is depressed.  
令 p = Suziko 输掉了选举。令 q = 她感到沮丧。

*p --> q*

*1*

Therefore, *p* AC; DI

6:128 Final conclusion- She did not lie about her age  
最终结论-她没有谎报年龄

Let p = she lied about her age. Let q = Terry is in trouble.  
让 p = 她谎报了自己的年龄。让 q = 特里陷入了麻烦。

*p→ q* not *q* Therefore, not *p* DC; DV

6:129 Final conclusion She did not lie about her age.  
6:129 最终结论 她没有谎报年龄。

Let p = she managed to get into the Blue Room. Let q = Terry lied about her age.  
让 p = 她设法进入了蓝色房间。让 q = 特里谎称她的年龄。

*P~\* <1* Not *p* Therefore, not *q* DA; DI

**6:130 Final conclusion: The blood on the porch is Al’s.  
6:130 最终结论：门廊上的血是Als的。**

Let *p = the blood is Al,s.*

Let q = the blood is type A.  
让 q = 血型为 A 型。

*p→ q*

**£**

Therefore, *p* AC; DI

Henceforth in this set, odd-numbered answers are omitted.  
因此，在这个集合中，奇数编号的答案被省略。

**6:132 Final conclusion: She is guilty.  
最终结论：她有罪。**

Let p = it has not been PBRD ... harm.  
让 p = 它没有被 PBRD ... 伤害。

Let q = she is not guilty.  
q = 她不无辜。

*p→ q*

not *p*

Therefore, not *q* DA; DI

**6:134 Final conclusion: Michael’s testimony is not to be trusted.  
6:134 最终结论：迈克尔的证词不可信任。**

Let p = Michael has a conflict of interest.  
让 p = 迈克尔存在利益冲突。

Let q = his testimony is not to be trusted.  
不能相信的是他的证词。

Let r = Michael’s brother is a suspect.  
r = 迈克尔的兄弟是嫌疑犯。

*r→ρ p→ q r*

Therefore, *q* AA, AA; DV

**Check-Up 6E**

**6:135 F 6:136 T 6:137 T 6:138 F 6:139 F**

6:140 T 6:141 T

**6:135 Replace the denial o/with nothing about.  
6:135 用无关的东西替换否认 o/。**

**6:138 Change valid to invalid.  
将有效更改为无效。**

**6:139 Change little practical to a great.  
改变一点实际到一个伟大的。**

**6:142 Conclusion: The dog is not shivering from the cold.  
结论：狗不是因为寒冷而发抖。**

Let p = this piece of cloth is warm.  
p = 这块布很暖和。

Let q = it is 50 percent wool.  
让 q = 它是50%的羊毛。

Let r = the dog is shivering from cold.  
r = 狗因寒冷而颤抖。

*p* and *q*

*r* → not *p*

Therefore, not *r* DC; DV

**6:143 Conclusion: The label does not read “50 percent wool.”  
结论：标签上并未写着50%的羊毛。**

Let p = the label reads “50 percent wool. ”  
让 p = 标签上写着 50% 羊毛。

Let q = it is 50 percent wool  
q = 它是50%的羊毛

Let r = the piece of cloth is warm.  
让 r = 这块布很暖和。

*p→ q r* and not *q*

Therefore, not *p* DC; DV

**6:144 Conclusion: Thomas Jefferson did not make . . . him.  
6:144 结论：托马斯·杰斐逊没有让...他。**

Let *p = Thomas Jefferson made . .. him.*

Let r = he was an astute politician.  
r = 他是一位精明的政治家。

Let s = he was a scholar.  
他是一位学者。

Let t= he was a gentleman.  
他是一个绅士。

*p* → not *r s* and *t* and *r*

Therefore, not *p* DC; DV

Henceforth in this set, odd-numbered answers are omitted.  
因此，在这个集合中，奇数编号的答案被省略。

**+ 6:146 Conclusion: The room will not be ugly.  
+ 6:146 结论：房间不会丑陋。**

Let p = the two colors you select will match.  
让 p = 你选择的两种颜色将会匹配。

I^t q = the room will be ugly.  
我^t q = 房间会很丑陋。

Let r = I help you select the colors.  
让我帮你选择颜色。

Argument in steps:  
步骤中的论点

Step 1: *r → p r*

So, *p* (AA; DV)

Step 2 *p* or *q* £

Therefore, not *q* (affirmation of weak alternant; DI)

Total argument: *p* or *q r→p r*

Therefore, not *q*

AA, Affirmation of weak alternant (AWA); DI  
AA, 弱变体的确认 (AWA); DI

*Note: If you interpreted the or as strong, the argument would have been deductively valid, but then it would have been more difficult to establish the alternation p or q.  
注意：如果你把“或”解释为强制性的话，这个论点将是演绎有效的，但是这样就更难建立p或q的替换。*­lish the alternation p

**6:148 Conclusion: He is entitled . . . insurance.  
6:148 结论：他有权利...保险。**

Let p = Dick took a driver training course.  
令 p = 迪克参加了一门驾驶培训课程。

Let q= he passed it with a grade ofB or higher.  
让 q= 他以B或更高的成绩通过了它。

I c r r = he is entitled ... insurance.  
我 c r r = 他有权利...保险。

*(p* and *q) ~\* r*

*P*

Therefore, *r*

Only one conjunct in the antecedent was affirmed; DI   
只有一个连词在前提中被确认；DI

6:150 Conclusion: He is entitled to vote.  
结论：他有权投票。

Let *p = Pedro has . . . over thirty days.*

Let *q = he is over eighteen.*

Let r = he is entitled to vote.  
r = 他有投票权。

*(p* and *q) → r p* and *q*

Therefore, *r* AA; DV

6:152 Conclusion: The sky is completely overcast now.  
6:152 结论：天空现在完全阴云密布。

Let ρ = there is a rainbow now.  
translated content": "让 ρ = 现在有一道彩虹。

Let q = the sky is completely overcast now.  
现在天空完全阴云密布。

not *(p* and *q)* not *p* Therefore, *q*

Denial of part of a negated conjunction; DI  
否定连词的部分否定；DI

6:154 Conclusion: Sheila is not in love with John.  
结论：希拉不爱约翰。

Let p = Sheila is in love with John.  
让 p = Sheila 爱上了 John。

Let q = Sheila has John’s signature in her yearbook.  
让 q = Sheila 在她的年鉴上有 John 的签名。

Let r = Sheila went to the dance with Jim.  
让 r = Sheila 和 Jim 一起去跳舞。

Let 5 = Sheila is at home right now.  
5 = Sheila is at home right now.

Argument in steps:  
步骤中的论点

Step 1: not *r → s* not *s*

Therefore, *r* (DC, DV)

Step 2: not (*q* and *r) r*

Therefore, not q (Affirm part of negated conj.; DV)  
因此，非 q（否定连词的肯定部分；DV）

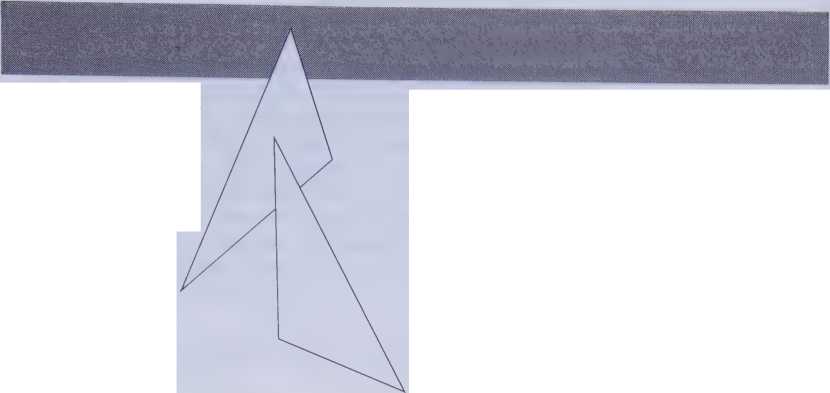
Step 3:

not *q*

Therefore, not *p* (DC, DV)

Overall argument: not r → s not {q and r) P~' V not s  
整体论点：不是r → s 不是{q和r) P~' V 不是s

Therefore, not p (DC, Affirm part of negated conj., DC; DV)  
不能被翻译

Applications of Deductive Logic: Necessary and Sufficient Conditions, Straight Deduction, Loose Derivation, and  
演绎逻辑的应用：必要和充分条件，直接推理，松散推导，和

CHAPTER

7

**Assumption Attribution  
假设归因**

This chapter presents a discussion of some applications of deductive logic. Although deductive ideas are useful in direcdy developing and judging some arguments, they are more often useful in other ways. In this chapter, you will see examples of direct and indirect use: necessary and sufficient condition language, straight deduction from acceptable reasons, loose derivation, assumption attribution, and evaluation of deduction's role in hypotheses. Elaboration of evaluation of generalizations and hypotheses, and its applications in one type of explanation and in value judging, appear in Chapters 8-11.  
本章介绍了演绎逻辑的一些应用。尽管演绎思想在直接发展和判断某些论证时很有用，但它们更常用于其他方面。在本章中，您将看到直接和间接使用的示例：必要和充分条件语言，从可接受的理由中进行直接推理，宽松推导，假设归因以及对假设中演绎作用的评估。对概括和假设的评估以及其在一种解释和价值判断中的应用将在第8-11章中出现。

Necessary and Sufficient Conditions  
必要和充分条件

Sometimes it is convenient to discuss class logic relationships in terms of necessary conditions, sufficient conditions, or both. For example, “Being a dog is a sufficient condition for being an animal” is, roughly speaking, another way to say that all dogs are animals. To say that one condition is sufficient for another is to say that establishing that the first holds is enough to establish that the second holds.  
有时候，用必要条件、充分条件或两者都来讨论类逻辑关系是很方便的。例如，成为一只狗是成为动物的充分条件，粗略地说，这是另一种说法，即所有的狗都是动物。说一个条件对另一个条件来说是充分的，就是说证明第一个条件成立就足以证明第二个条件成立。­lishing that the first holds is enough to establish that the second holds.

Similarly, “Being an animal is a necessary condition for being a dog” is, roughly speaking, another way to say that showing something not to be an animal establishes that it is not a dog. To say that one thing is a necessary condition for another is to sav that if the first does not hold, the second cannot hold either—that the first must hold in order that the second hold. This is the sort of thing we have in mind when we say that being a citizen is a necessary condition for being eligible to vote. Being a necessary condition does not imply that something is a sufficient condition, and vice versa. Being a citizen is not a sufficient condition for being eligible to vote.  
同样，作为动物是成为狗的必要条件，粗略地说，另一种方式是表明某物不是动物，从而确定它不是狗。说一件事是另一件事的必要条件，就是说如果第一件事不成立，第二件事也不能成立——第一件事必须成立才能使第二件事成立。当我们说成为公民是有资格投票的必要条件时，我们指的就是这种情况。成为必要条件并不意味着某物是充分条件，反之亦然。成为公民并不是有资格投票的充分条件。

The language of necessary and sufficient conditions also can be used in propo­sitional logic, as in “The truth of *Mike is a dop* is a sufficient condition for the truth of *Mike is an animal”* This can be conveniently translated into talk using gerunds, as in “Mike’s being a dog is a sufficient condition for Mike’s being an animal.”

­mal” is a necessary condition for the truth of “Mike is a dog.” Or, Mike s being an animal is a necessary condition for Mike’s being a dog.Similarly, given our standard example in Chapter 6, the truth of “Mike is an animal” is a necessary condition for the truth of “Mike is a dog.” Or, Mike s being an animal is a necessary condition for Mike’s being a dog.  
必要和充分条件的语言也可以在命题逻辑中使用，例如Mike是一只狗的真实性是Mike是一只动物的充分条件。这可以方便地用动名词的方式翻译，例如Mike是一只狗是Mike是一只动物的充分条件。 同样地，在第6章中给出的标准例子中，Mike是一只动物的真实性是Mike是一只狗的必要条件。或者，Mike是一只动物的真实性是Mike是一只狗的必要条件。

This brief treatment of necessary and sufficient conditions should enable you to follow the use of these terms as we proceed. Unfortunately, there are some tricky fea­tures about these terms in causal contexts. Let me elaborate a bit. The consequent’s holding is a logically necessary condition, as you just saw in the Mike example. But consider this if-then proposition: “If Mike is frightened, he barks.” It could be con­fusing to say that his barking is a necessary condition for his being frightened. Always make sure that your use of the language of necessary and sufficient conditions makes sense in the given situation.[[8]](#footnote-8) [[9]](#footnote-9)

Soundness in Deductive Logic

When an argument has true reasons and is deductively valid, then we are required to accept its conclusion. Such an argument is called sound by deductive logicians. Because this precise use of the word sound is not widely accepted (by other than logicians and some philosophers), you can expect most people with whom you have discussions not to use the term sound this way. For most people, a sound argument is a good argument, whether or not it is deductively valid.  
这个简要的对必要和充分条件的处理应该使您能够在我们继续进行时理解这些术语的使用。不幸的是，在因果关系的背景下，这些术语存在一些棘手的特点。让我稍微详细解释一下。持续发生的结果是一个逻辑上必要的条件，就像你在迈克的例子中看到的那样。但是考虑一下这个如果-那么命题：如果迈克害怕，他就会叫。这可能会让人困惑，说他的叫声是他害怕的必要条件。始终确保您在给定情况下使用必要和充分条件的语言是有意义的。[9] [10]演绎逻辑的正确性当一个论证有真实的理由并且是演绎有效的时候，我们就需要接受它的结论。这样的论证被演绎逻辑学家称为正确的。因为这个词“正确”在除了逻辑学家和一些哲学家之外并不被广泛接受，所以你可以预期大多数与你进行讨论的人不会用这种方式使用“正确”这个术语。对于大多数人来说，一个正确的论证是一个好的论证，无论它是否是演绎有效的。­cians and some philosophers), you can expect most people with whom you have dis­cussions not to use the term

­ments. An example of a good argument that is not deductively valid is the prosecu­tor’s argument in Chapter 2 that has as its conclusion “Arlene performed the act that caused Al’s death.” That argument is sound in the ordinary sense of Not all good arguments are deductively valid, although in some fields (such as mathematics) most arguments must be deductively valid in order to be good arguments. An example of a good argument that is not deductively valid is the prosecutor’s argument in Chapter 2 that has as its conclusion “Arlene performed the act that caused Al’s death.” That argument is sound in the ordinary sense of sound, but not in the logician’s sense. In the logician’s sense, it is an unsound argument. Beware of tlιinking that it is necessarily a bad or weak argument.  
并非所有好的论证都是演绎有效的，尽管在某些领域（如数学）中，大多数论证必须是演绎有效的才能成为好的论证。一个例子是第二章中检察官的论证，其结论是Arlene犯下了导致Als死亡的行为。从普通意义上讲，这个论证是有力的，但从逻辑学家的角度来看，它是一个无效的论证。请注意，不要错误地认为它必然是一个糟糕或弱的论证。

In view of the ambiguity of the word sound, make sure that your audience (that is, those with whom you are communicating) is not confused bv your use of this term. If you are confident that no one in your audience has studied deductive logic, then use it in the everyday sense. (You are less likely to mislead people.) Otherwise, in real situations, make sure that it is clear how you are using the term, if you use it at all. Also make sure that no one else is shifting in their meaning of the term (which, of course, you would not do). For example, make sure that no one is judging an argument unsound on the ground that it is not deductively valid, and then concluding that it is not a good argument on that basis alone. As the prosecutor’s argument in Chapter 2 shows, some unsound arguments in the logician’s sense of the term are quite sound (using the term in its everyday sense).  
鉴于词语“声音”的模糊性，请确保您的听众（即您正在交流的人）不会因为您对该术语的使用而感到困惑。如果您确信您的听众中没有人学过演绎逻辑，那么可以在日常意义上使用它。（这样做不太可能误导人。）否则，在实际情况中，请确保清楚地表明您如何使用该术语，如果您使用它的话。还要确保没有其他人在改变他们对该术语的意义（当然，您自己不会这样做）。例如，请确保没有人根据一个不具备演绎有效性的论证来判断它不具备声音，并仅仅因此得出它不是一个好的论证的结论。正如第二章中检察官的论证所示，一些在逻辑学家的意义上不具备声音的论证在日常意义上是相当有力的。­ment unsound on the ground that it is not deductively valid, and then concluding that it is not a good argument on that basis alone. As the prosecutor’s argument in Chapter 2 shows, some unsound arguments in the logician’s sense of the term are quite sound (using the term in its everyday sense).

Three Cases of Deduction in Context   
上下文中的三种推理案例

detailed instruction and extensive practice. If you have trouble with propositional logic, review Chapter 6.  
详细的说明和广泛的练习。如果你对命题逻辑有困难，请复习第六章。

­cation Chapters 5 and 6 gave you the opportunity to see and use deductive standards. Not all of the exercises there are realistic, although those from the context of the jury trial are realistic. Next, from that same context, we will examine the deductive application of the jury’s instructions about voluntary manslaughter. Subsequently, you will see two cases from a discussion of Shakespeare’s play Othello, in which parts of the total argument conform to the standards of deductive validity. The jury’s instructions regarding the charge of murder appear in the first Check-Up and provide another example of deduction in context.  
第5章和第6章让您有机会看到和使用演绎标准。那里的练习并非全部都是现实的，尽管陪审团审判的背景下的那些是现实的。接下来，从同样的背景出发，我们将研究陪审团关于自愿杀人的演绎应用。随后，您将看到来自讨论莎士比亚的剧作《奥赛罗》的两个案例，其中部分总论符合演绎有效性的标准。关于谋杀指控的陪审团指示出现在第一次检查中，提供了演绎背景下的另一个例子。

Applying Detailed Instructions  
应用详细说明

About the Charge of Voluntary Manslaughter  
关于自愿杀人罪的指控

After the prosecution and defense attorneys had finished presenting their cases, the judge provided the jury with a copy of the conditions to be established for voluntary manslaughter and for murder. You will see the conditions for murder in a Check-Up. Here are the conditions for voluntary manslaughter:  
公诉和辩护律师结束陈述后，法官向陪审团提供了一份关于故意杀人和谋杀的成立条件的副本。你将在一个检查中看到谋杀的条件。以下是故意杀人的条件：

Example 7:1

To sustain the charge of voluntary manslaughter, the state must prove the following propositions:  
为了维持自愿杀人罪的指控，国家必须证明以下主张：­

First: That the defendant intentionally or knowingly performed the acts that caused the death of the victim.  
首先：被告故意或知ingly地执行了导致受害者死亡的行为。

Second: That when the defendant did so, she believed that circumstances existed that would have justified killing the victim.  
第二点：被告这样做时，她相信存在着可以证明杀害受害者是合理的情况。

Third: That the defendant’s belief that such circumstances existed was unreasonable.  
第三点：被告对于这种情况的信念是不合理的。

Fourth: That the defendant was not justified in using the force she used.  
第四点：被告在使用她所使用的武力时没有正当理由。

1. If you find from your consideration of all the evidence that each of these propositions has been proved beyond a reasonable doubt, then you should find the defendant guilty.  
   如果您从对所有证据的考虑中发现每个命题都已被证明超出合理的怀疑范围，那么您应该认定被告有罪。
2. If vou find from your consideration of all the evidence that any of these propositions has not been proved beyond a reasonable doubt, then you should find the defendant not guilty.  
   如果你从所有证据的考虑中发现，任何一个命题没有被证明超出合理的怀疑，那么你应该认定被告无罪。

What does it all mean? One way to help grasp this detailed specification is to think in terms of necessary and sufficient conditions. Try to do so before you read further.  
这一切意味着什么？帮助理解这个详细的规范的一种方法是以必要和充分条件的方式思考。在继续阅读之前，请尝试这样做。

­Here is one possible rough summary statement in terms of necessary and sufficient conditions: According to the first if-then proposition, the conjunction of the first four conditions (each proven beyond a reasonable doubt) is sufficient for a guilty verdict. According to the second if-then proposition, proof beyond a reasonable doubt of each one of the four conditions is a necessary condition for a guilty verdict. More compactly, the four conditions (each proven beyond a reasonable doubt) are jointly sufficient and each necessary for a guilty verdict. Looking at it in these terms was helpful to me, as it should be to you, now that you are familiar with the language of necessary and sufficient conditions.  
以下是一个可能的粗略总结陈述，涉及必要和充分条件：根据第一个若-则命题，前四个条件的连结（每个条件都已被合理怀疑证明）足以作为有罪判决的充分条件。根据第二个若-则命题，每个条件的合理怀疑证明是有罪判决的必要条件。更简洁地说，这四个条件（每个条件都已被合理怀疑证明）是共同充分且每个条件都是有罪判决的必要条件。以这种方式来看待它对我很有帮助，对你来说也应该如此，现在你已经熟悉了必要和充分条件的语言。

But my associates on the jury were not all familiar with this language. When I tried to make overall sense of it for them, I did not use the words necessary and sufficient. Instead, I said something like the following: “If every one of those four conditions has been proven beyond a reasonable doubt, then that is enough for a verdict of guilty and we should vote for a guilty verdict. But each of them is needed. Without any one of them, we must declare her not guilty.” This is an example of what I hope you can do: Think in terms of necessary and sufficient conditions and use that language with people who understand it. But when you are with people who might be confused or intimidated by this language, express necessary and sufficient relationships in simpler, though usually lengthier, terms.  
但是我在陪审团上的同事并不都熟悉这种语言。当我试图为他们整体理解时，我没有使用必要和充分这些词。相反，我说了类似以下的话：如果这四个条件中的每一个都已被合理怀疑以外的证据证明，那就足够判定有罪，并且我们应该投票支持有罪的判决。但是每一个条件都是必需的。如果没有其中任何一个，我们必须宣布她无罪。这是我希望你能做到的一个例子：以必要和充分条件的方式思考，并与理解这种语言的人使用这种语言。但是当你与可能会对这种语言感到困惑或害怕的人在一起时，用更简单但通常更冗长的方式表达必要和充分关系。*­ficient.*­ditions has been proven beyond a reasonable doubt, then that is enough for a verdict ­guage with people who understand it. But when you are with people who might be confused or intimidated by this language, express necessary and sufficient relation­ships in simpler, though usually lengthier, terms.

­ably not help those unfamiliar with the basic symbolization strategies presented in Chapter 6. Doing this symbolization helped me, partly because of the precision it required of me. Before reading further, stop and try to symbolize the statement of conditions for a verdict of voluntary manslaughter.It might also help you to symbolize the relationships, although it would probably not help those unfamiliar with the basic symbolization strategies presented in Chapter 6. Doing this symbolization helped me, partly because of the precision it required of me. Before reading further, stop and try to symbolize the statement of conditions for a verdict of voluntary manslaughter.  
这也许对你有帮助来象征这些关系，尽管对于那些不熟悉第6章中所介绍的基本象征策略的人可能没有帮助。做这种象征有助于我，部分原因是因为它对我要求精确。在继续阅读之前，停下来尝试象征自愿杀人罪的条件陈述。

Here is my thinking in developing this symbolization: Each condition must be proven beyond a reasonable doubt. In order to save time and space, I shall use the letters PBRD (read proven beyond a reasonable doubt) to mean “You find from your consideration of all the evidence that it has been proven beyond a reasonable doubt.” I do that because this idea is part of each of the four listed conditions. Assuming this use of PBRJD, Example 7:2 provides my symbolization of the voluntary manslaughter charge.  
在开发这个符号化过程中，我思考的是：每个条件都必须被证明超出合理怀疑的范围。为了节省时间和空间，我将使用字母PBRD（读作超出合理怀疑的范围被证明）来表示您从考虑所有证据中发现它已被证明超出合理怀疑的范围。我这样做是因为这个想法是四个列出的条件的一部分。假设使用PBRJD，例子7:2提供了我对故意杀人罪的符号化。­ter charge.

Example 7:2

Let p = “PBRD that the defendant intentionally or knowingly performed the acts that caused the death of the victim.”  
让 p = PBRD，即被告故意或知ingly地执行了导致受害者死亡的行为。

Let q = “PBRD that when the defendant did so, she believed that circumstances existed that would have justified killing the victim.”  
当被告这样做时，她相信存在着正当理由可以杀害受害者。­stances existed that would have justified killing the victim.”

Let r = “PBRD that the defendant’s belief that such circumstances existed was unreasonable.”  
让 r = PBRD，被告相信这种情况存在是不合理的。

Let 5 = “PBRD that the defendant was not justified in using the force she used.”  
让5 = PBRD，被告在使用她所使用的力量上没有正当理由。

Let t = “You should find the defendant guilty.”  
你应该认定被告有罪。

Let u = “You should find the defendant not guilty.”  
让u = 你应该认为被告无罪。

The symbolized charge is as follows:  
符号化的费用如下：

1. *(p* and *q* and *r* and 5) → *t.*
2. not *(p* and *q* and *r* and $) → *u.*

Our argument for our guilty verdict for voluntary manslaughter went as follows:  
我们对自愿杀人罪的有罪判决的论点如下：

Example 7:3

*(p* and *q* and *r* and j) → *t.*

*P*

*V*

*r*

*s*

Therefore, *t* ∖ \ ; DV

We jurors believed Example 7:3 to be a sound argument in both meanings of sound.  
我们陪审团认为Example 7:3在"sound"的两个意义上都是一个有力的论证。

Example 7:3 summarizes and masks the long discussions that we had, especially for condition s. But Example 7:3 exhibits the overall structure of the situation within which we were working. It helped me to keep in mind the relevance of what was going on.  
示例7:3总结并掩盖了我们进行的长时间讨论，尤其是对于条件s。但示例7:3展示了我们工作的整体结构。它帮助我记住了正在发生的事情的相关性。

The structure of the conditions for murder in this situation was more complicated than that for voluntary manslaughter. These conditions for murder appear in the next Check-Up, together with our argument leading to a verdict of not guilty of murder.  
这种情况下谋杀的条件结构比故意杀人的条件结构更复杂。这些谋杀的条件将在下一个审查中出现，与我们的论证一起导致了无罪的判决。

­ably because in the courtroom, these sort of things must be totally in the open. Often, however, in situations where deductively valid reasoning is used, the speaker does not explicitly state all the reasons, leaving it up to us to fill in what is obviously intended. Furthermore, the deductive reasoning is often only part of the entire argu­ment. The passage in Example 7:4 about the interpretation of In this case, all the parts of the deductive argument are explicitly stated, probably because in the courtroom, these sort of things must be totally in the open. Often, however, in situations where deductively valid reasoning is used, the speaker does not explicitly state all the reasons, leaving it up to us to fill in what is obviously intended. Furthermore, the deductive reasoning is often only part of the entire argument. The passage in Example 7:4 about the interpretation of Othello is from A. C. Bradley’s Shakespearean Tragedy and serves as an example:  
在这种情况下，演绎论证的所有部分都是明确陈述的，可能是因为在法庭上，这些事情必须完全公开。然而，在使用演绎有效推理的情况下，演讲者通常不会明确陈述所有的理由，而是让我们填补明显意图的部分。此外，演绎推理通常只是整个论证的一部分。例7:4中关于奥赛罗解释的段落来自A.C.布拉德利的《莎士比亚悲剧》，并作为一个例子。

Example 7:4

Nothing could be less like Iago than the melodramatic villain so often substi­tuted for him on the stage, a person whom everyone in the theatre knows for a scoundrel at the first glance. . . . [His wife Emilia] never dreamed he was a vil­lain. No doubt she knew rather more of him than others.[[10]](#footnote-10) [[11]](#footnote-11)

In this argument, the hypothesis that Iago is a melodramatic villain is argued against. Restated with the probably intended assumption added at the beginning in brackets (a step discussed later in this chapter), the argument goes as in Example 7:5, and is a case of denial of the consequent (plus the affirmation of one part of a negated conjunction):  
没有什么比舞台上常常替代他的滑稽恶棍更不像伊阿古（Iago）了，每个在剧院里的人一眼就能认出他是个恶棍。. . . [他的妻子艾米莉亚（Emilia）]从来没有想过他是个恶棍。毫无疑问，她对他的了解比其他人更多。[11] [12]在这个论证中，反驳了伊阿古是个滑稽恶棍的假设。在括号中加入可能有意的假设（稍后在本章讨论的一步），论证如同例子7:5所示，是一个否定结论的情况（加上否定连接词的一部分的肯定）。

Example 7:5

dramatic villain, then she suspected him of villainy.] Emilia did not suspect him of villainy and she knew rather more of him than others. So Iago was not a melodramatic villain.  
戏剧性的恶棍，然后她怀疑他有恶意。] 艾米莉亚并不怀疑他有恶意，她对他的了解比其他人更多。所以，伊阿古并不是一个夸张的恶棍。

Let p = “she knew her husband rather more than others.”  
让 p = 她对丈夫的了解比其他人多一些。

Let q = “he was a melodramatic villain.”  
q = 他是一个多愁善感的恶棍。

Let r = “she suspected him of villainy.”  
让 r = 她怀疑他有恶行。

Using letters, the argument looks like this, with each line explained on the right side:  
使用字母，论点如下，每行右侧有解释：

Part 1:

*(p* and *q) → r* Unstated assumption

not *r* Stated reason

Therefore, not *(p* and *q)* DC; DV

Reminder: This conclusion means “not both p and q.r,  
提醒：这个结论意味着不是同时p和q.r

Part 2:

not *(p* and *q)*

£

Therefore, not *q*

Conclusion of Part 1  
第一部分的结论

Stated reason  
陈述的理由

Affirmation of one member of a negated conjunction; DV  
否定连词中的一个成员的肯定；DV

The argument in Example 7:5 is deductively valid. I broke the argument into two parts so you could see how an intermediate conclusion was derived (in Part 1) and then used (in Part 2) as a reason in deriving the final conclusion. In Part 1, the conjoined propositions, p and q, form the antecedent. The denial of this antecedent is the conclusion of Part 1, “not (p and ^).” In Part 2, this negated conjunction becomes the first reason. Because one part (p) of this negated conjunction is true, the other part must be false because they cannot both be true. Thus, we get the conclusion, “not q.” If both parts of such an argument are deductively valid, then the whole thing is deductively valid.  
在示例7:5中的论证是演绎有效的。我将论证分为两个部分，这样你就可以看到中间结论是如何推导出来的（在第一部分中），然后在推导最终结论时如何使用（在第二部分中）作为原因。在第一部分中，联结命题p和q形成了前提。否定这个前提是第一部分的结论，而不是（p和^）。在第二部分中，这个否定的联结成为第一个原因。因为这个否定的联结的一部分（p）是真的，另一部分必须是假的，因为它们不能同时为真。因此，我们得出结论，不是q。如果这样的论证的两个部分都是演绎有效的，那么整个论证都是演绎有效的。­sion, “not

Example 7:6 is another argument from Bradley’s book:  
Example 7:6是Bradley的书中的另一个论点：

Example 7:6

It is false that Iago was . . . chiefly incited by two things, the desire of advance­ment, and a hatred of Othello due principally to the affair of the lieutenancy. A man moved by simple passions due to simple causes does not stand fingering his feelings, industriously enumerating their sources, and groping about for new ones. But this is what Iago does.[[12]](#footnote-12)

­ing diagram:I added the apparent assumption that the desire of advancement and the hatred of Othello due principally to the affair of the lieutenancy are simple passions due to simple causes. Then the argument can be seen to be deductively valid by the following diagram:   
伊阿格被两件事主要激发，一是渴望晋升，二是对奥赛罗的憎恶，主要源于副官一事。一个被简单原因激发简单情感的人不会一直琢磨自己的感受，勤奋地列举它们的来源，并寻找新的原因。但这正是伊阿格所做的。[13]我添加了一个明显的假设，即渴望晋升和对奥赛罗的憎恶主要源于副官一事是由于简单原因引起的简单情感。然后，通过以下图表可以看出，这个论点是演绎有效的：

Diagram 7:1

Men moved by simple passions due to simple causes  
因简单原因而受简单情感驱使的人们

Men standing fingering their feelings, industri­

ously enumerating their

sources and groping about

Men moved by the desire of advancement and a hatred of Othello due to an affair of the lieutenancy  
因渴望晋升和对奥赛罗的中尉职务之事的憎恶而被激怒的人们

Therefore, the argument is deductively valid. Diagramming the reasons forces us to diagram the conclusion. The reasons force the X for Iago to be outside the inner circle on the right-hand side.  
因此，这个论点是演绎有效的。将原因进行图表化迫使我们将结论进行图表化。原因迫使Iago的X位于右侧的内圈之外。

Cases like this of the direct use of deduction abound, but they are usually only part of a larger argument. In Example 7:6, the conclusion of the larger argument is that Iago is not a melodramatic villain. In Example 7:4, the conclusion of the larger argument is the same, but there is a significant prior inductive argument to try to establish the reason “Emilia never dreamed he was a villain.”

­mentation and interpretation, which I have done here. This supplementation and interpretation is often difficult. It requires attention to the context and the nuances of language. In adding the assumptions I added, I was looking for propositions that probably needed to be true if the arguments are to be good arguments. Attributing assumptions to arguments is a difficult thing to do well. More about this later in this chapter.Furthermore, real occurrences of deductive reasoning generally require supplementation and interpretation, which I have done here. This supplementation and interpretation is often difficult. It requires attention to the context and the nuances of language. In adding the assumptions I added, I was looking for propositions that probably needed to be true if the arguments are to be good arguments. Attributing assumptions to arguments is a difficult thing to do well. More about this later in this chapter.  
直接使用演绎法的案例很多，但通常只是更大论证的一部分。在例子7:6中，更大论证的结论是Iago不是一个夸张的恶棍。在例子7:4中，更大论证的结论是相同的，但有一个重要的归纳论证试图证明Emilia从未梦想过他是一个恶棍的原因。此外，真正的演绎推理通常需要补充和解释，我在这里已经做了。这种补充和解释通常很困难。它需要关注上下文和语言的细微差别。在添加我所添加的假设时，我在寻找那些如果论证要成立可能需要为真的命题。将假设归因于论证是一件很难做好的事情。关于这个问题，本章后面会有更多讨论。

Loose Derivation  
松散推导

Does the conclusion follow in Example 7:7?  
在例子7:7中，结论是否成立？

Example 7:7

1. Generally, defendants who admit to a stabbing have done it.  
   一般来说，承认刺伤的被告都是实施了这个行为。
2. Arlene, the defendant, admitted that she stabbed him.  
   阿琳，被告，承认她刺伤了他。
3. Therefore, she probably did stab him.  
   因此，她很可能刺伤了他。

In this example, there are qualifying words: probably (in the conclusion) and generally (in the first reason). The conclusion does not necessarily follow. It might be true that defendants have generally done those acts to which they have confessed, yet also true that Arlene probably did not stab him, although she admitted doing so. That is, this is logically possible. What strategy should one follow?  
在这个例子中，有一些限定词：可能（在结论中）和一般（在第一个原因中）。结论不一定是正确的。被告通常确实做了他们承认的那些行为，但也可能是真的，阿琳可能没有刺伤他，尽管她承认这样做了。也就是说，从逻辑上讲是有可能的。一个人应该采取什么策略呢？

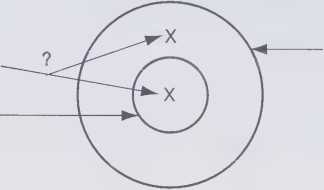
I recommend that you first strip the qualifying words from the argument and make a judgment about the deductive validity of the resulting argument. Then put the qualifying words back in and, based on your understanding of the situation, make a judgment about the original argument, taking into account your judgment about the deductive validity of the stripped argument. Given all the other circumstancesrevealed in the trial, I felt that the reasons were sufficient to show that it was g∙roba ble that Arlene did it. (But I am not saying that by this argument alone it was proved beyond a reasonable doubt that she did it.)

An argument that appears to require something close to deductive validity might well be judged unsatisfactory if the stripped argument is deductively invalid.  
我建议您首先从论点中剥离修饰词，并对剥离后的论点的演绎有效性做出判断。然后将修饰词放回去，并根据您对情况的理解，对原始论点做出判断，考虑到您对剥离论点的演绎有效性的判断。考虑到审判中揭示的所有其他情况，我认为理由足以表明Arlene可能做了这件事。（但我并不是说仅凭这个论点就能证明她做了这件事超出合理怀疑的范围。）如果剥离后的论点在演绎上无效，那么似乎需要接近演绎有效性的论证可能会被判定为不令人满意。

Example 7:8

1. Generally, Communists were opposed to United States policy in El Salvador.  
   通常，共产主义者反对美国在萨尔瓦多的政策。
2. Ambassador White was opposed to United States policy in El Salvador.  
   白大使反对美国在萨尔瓦多的政策。
3. Therefore, Ambassador White was probably a Communist.  
   因此，白大使很可能是共产主义者。

The argument in Example 7:8 is deductively invalid even when the qualifying words, generally and probably, are stripped from it. In the context in which I heard this argument, there were no other plausible background assumptions to support the inference from the reasons to the conclusion, so I judged the argument defective. The argument seemed to require something close to deductive validity in that situation, but deductive validity was not there, as shown in Diagram 7:2.  
在示例7:8中的论证即使剥去修饰词“一般地”和“可能地”也是演绎上无效的。在我听到这个论证的背景下，没有其他合理的背景假设来支持从理由到结论的推理，所以我认为这个论证有缺陷。在那种情况下，这个论证似乎需要接近演绎有效性，但演绎有效性并不存在，如图7:2所示。­tion, but deductive validity was not there, as shown in Diagram 7:2.

Diagram 7:2

Ambassador White

Communists

people opposed to United States policy in El Salvador  
反对美国在萨尔瓦多的政策的人们

Summary So Far  
迄今为止的摘要

­tionships among things and in appraising deductive arguments. A The language of necessary and sufficient conditions is often useful in discussing relationships among things and in appraising deductive arguments. A sufficient condition is one that is enough to establish that something else holds. A necessary condition is one that must hold if another is to hold. A sufficient condition is enough, but it might not be necessary; a necessary condition is needed, but often is not enough. Although the language of necessary and sufficient conditions is also used in causal propositions, be careful about causal interpretations of logically necessary and sufficient condition relationships. Make sure that what you are saying makes sense.  
必要和充分条件的语言在讨论事物之间的关系和评估演绎论证时常常很有用。充分条件是足够确立其他事物成立的条件。必要条件是如果另一条件成立，它必须成立的条件。充分条件是足够的，但可能不是必要的；必要条件是需要的，但通常不足够。虽然必要和充分条件的语言也用于因果命题，但要小心逻辑上必要和充分条件关系的因果解释。确保你所说的有意义。­cient condition relationships. Make sure that what you are saying makes sense.

In the language of deductive logic, a sound argument is a deductively valid one with true reasons. In everyday language, a sound argument is a good argument.  
在演绎逻辑的语言中，一个正确的论证是一个具有真实理由的演绎有效的论证。在日常语言中，一个正确的论证是一个好的论证。

­Direct cases of deductive validity are common in our everyday reasoning, but they usually are part of a larger argument, and they usually require some suppiemen tation and interpretation in order to be judged. This supplementation and interpretation is often difficult to do. It requires sensitivity to the context and the language.  
直接的演绎有效案例在我们的日常推理中很常见，但它们通常是更大论证的一部分，并且通常需要一些补充和解释才能进行判断。这种补充和解释通常很难做到。它需要对上下文和语言的敏感度。­tation is often difficult to do. It requires sensitivity to the context and the language.

Often we see and use arguments that would be deductively valid if they did not include qualifying terms such as probably, usually, in all probability, and likely. There are no formulas that yield a judgment about such arguments, which are here called loose derivations; the best one can do with them is to strip the qualifiers, make a judgment about the deductive validity of the result, and then make a final judgment of the argument with the qualifiers reinserted (taking into account the judgment made about the deductive validity of the stripped argument).  
通常我们会看到并使用一些论证，如果它们不包含像可能、通常、很有可能和可能性这样的限定词，那么它们将是演绎有效的。对于这些被称为松散推导的论证，没有公式可以对其进行判断；我们能做的最好的事情就是去除这些限定词，对结果的演绎有效性进行判断，然后在重新插入限定词的情况下对论证进行最终判断（考虑到对去除限定词的论证演绎有效性的判断）。­ment about the deductive validity of the result, and then make a final judgment of the argument with the qualifiers reinserted (taking into account the judgment made about the deductive validity of the stripped argument).

­tion in the field or area of knowledge, experience, and wisdom. Because we have to make such decisions often, there is no point in hiding from this fact. But we must admit that these decisions are matters of judgment, and not fully determined by rules.This final judgment requires sensitivity to the situation, background information in the field or area of knowledge, experience, and wisdom. Because we have to make such decisions often, there is no point in hiding from this fact. But we must admit that these decisions are matters of judgment, and not fully determined by rules.  
这个最终判断需要对情况的敏感度，对领域或知识领域的背景信息，经验和智慧。因为我们经常需要做出这样的决定，所以躲避这个事实是没有意义的。但我们必须承认，这些决定是判断的问题，而不是完全由规则决定的。

If you feel that you need more practice with deduction, go back and do more items from Chapters 5 and 6.  
如果你觉得你需要更多的演练来进行推理，回去做更多来自第5章和第6章的题目。

Check-Up 7A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

7:1 A deductively valid argument is one in which the conclusion follows necessarily from the reasons.  
7:1 一个演绎有效的论证是指结论必然地从理由中得出的。

7:2 The following argument is deductively valid when stripped: “Because totalitarian systems of government generally fail and the government of Ladia is about to fail, it is probably a totalitarian government.”

7:3 A sufficient condition is one that is enough and that is needed in order for another to hold.  
7:2 下面的论证在剥离后是演绎有效的：因为极权主义政府体制通常会失败，而拉迪亚的政府即将失败，所以它很可能是一个极权政府。7:3 充分条件是足够且必要的条件，以使另一个条件成立。

7:4 A necessary condition is one that must hold in order that another hold.  
7:4 必要条件是指为了使另一个条件成立而必须满足的条件。

­taining qualifiers is to strip the qualifiers, make a deductive validity judgment, and apply exactly that judgment to the total argument.7:5 A good formula for dealing with deductive-appearing arguments containing qualifiers is to strip the qualifiers, make a deductive validity judgment, and apply exactly that judgment to the total argument.  
处理包含限定词的推理性论证的一个好方法是去掉限定词，进行演绎有效性判断，并将该判断应用于整个论证。

7:6 Many real arguments omit one or the other of the reasons that would make them into deductively valid arguments.  
7:6 许多真实的论点省略了使它们成为演绎有效论证的一个或另一个原因。

Medium Answer  
中等答案

**7:7 In the jury room one of the jurors argued as follows:  
7:7 在陪审团室里，一名陪审员如下辩论：**

“She probably would not have taken Al’s keys and zipped them in her purse if she wanted him to leave her alone. The detective testified that Al’s keys were found in a zipped-up pocket of her purse. Because they could not have been there if she did not both take them and put them there, she probably did not want him to leave her alone.”

Judge this argument using the FRISCO outline. Assume that the juror was ultimately trying to discredit Arlene’s contention that she was defending herself against attack.   
"如果她不想让他离开她，她可能不会拿走阿尔的钥匙并将它们放进她的钱包里。侦探作证说，阿尔的钥匙被发现在她的钱包的拉链口袋里。因为如果她既没有拿走钥匙又没有放进去，那么它们不可能在那里，所以她可能不想让他离开她。使用FRISCO大纲来评判这个论点。假设陪审员最终试图质疑阿琳对自己为了自卫而行动的说法。"

**7:8 The following instructions to the jury specified the conditions for murder:  
7:8以下对陪审团的指示明确了谋杀的条件。**

To sustain the charge of murder, the state must prove the following propositions:  
为了维持谋杀罪的指控，国家必须证明以下命题：

First: That the defendant performed the acts that caused the death of the victim.  
首先：被告犯下了导致受害者死亡的行为。

Second: That when the defendant did so, she intended to kill or do great bodily harm to the victim, or she knew that her act would cause death or great bodily harm to the victim, or she knew that her acts created a strong probability of death or great bodily harm to the victim. Third: That the defendant was not justified in using the force she used.  
第二点：被告这样做时，她有意杀害或对受害人造成严重伤害，或者她知道她的行为会导致受害人死亡或严重伤害，或者她知道她的行为极有可能导致受害人死亡或严重伤害。第三点：被告在使用她所使用的力量时没有合理理由。­ated a strong probability of death or great bodily harm to the victim. Third: That the defendant was not justified in using the force she used.

1. If you find from your consideration of all the evidence that each of these propositions has been proven beyond a reasonable doubt, then you should find the defendant guilty.  
   如果你从对所有证据的考虑中发现每个命题都已被证明超出合理的怀疑范围，那么你应该认定被告有罪。­sonable doubt, then you should find
2. If you find from your consideration of all the evidence that any of these propositions has not been proven beyond a reasonable doubt, then you should find the defendant not guilty.  
   如果你从对所有证据的考虑中发现任何这些命题没有被证明超出合理怀疑的范围，那么你应该认定被告无罪。

Simplify by treating the second condition as a single proposition to be represented by a single letter.  
将第二个条件视为一个单一命题，并用一个单一字母表示。

1. Interpret this set of specifications in the language of necessary and sufficient conditions.  
   用必要和充分条件的语言解释这组规范。
2. Interpret this set of specifications in less technical language (using words such as enough and needed), as you might for a group of people who might be intimidated by the language of necessary and sufficient conditions.  
   用较少技术性的语言解释这一系列规格（使用诸如足够和所需之类的词语），就像你为一群可能被必要和充分条件的语言所吓到的人群所做的那样。
3. Assign letters to the propositions in this set of specifications.  
   给这组规范中的命题分配字母。
4. ­tion and concluding that the defendant is to be found not guilty.Assuming that the second condition has not been proven beyond a reasonable doubt, symbolize an argument based on this assumption and concluding that the defendant is to be found not guilty.  
   假设第二个条件尚未被合理怀疑地证明，基于这一假设，符号化一个论证，并得出被告无罪的结论。

+ 7:9 Do the same things as in 7:8, but do not simplify the second condition. Instead elaborate its constituent propositions. For example, she intended to kill the victim is one possible constituent proposition, assuming one way of analyzing the instructions.  
做与7:8相同的事情，但不要简化第二个条件。相反，详细说明其组成命题。例如，她打算杀害受害者是一个可能的组成命题，假设一种分析指令的方式。­tion. Instead elaborate its constituent propositions. For example,

**7:10 Find an argument in print, broadcast, or conversation in which the conclusion appears to be loosely derived. Judge the argument and defend your judgment following the FRISCO outline.  
7:10 寻找一篇印刷品、广播或对话中的论证，其中结论似乎是松散推导出来的。根据FRISCO大纲评判这个论证，并为你的判断辩护。**

Assumption Attribution and Identification  
假设归因和识别

Usually, arguments that we offer and see have gaps in them. Consider Example 7:9. As it stands, the argument has a gap. The conclusion that Mollie is not on the team does not reasonably follow, unless some assumption is added to the argument. The most obvious candidate is that Mollie is not tall. This proposition, if added to the argument, makes it deductively valid.  
通常，我们提出和看到的论点中存在着漏洞。考虑例子7:9。按照目前的状态，这个论点存在一个漏洞。结论是Mollie不在团队中，除非在论点中添加一些假设。最明显的候选者是Mollie不高。如果将这个命题添加到论点中，就使其具有演绎有效性。

Example 7:9

You ask me whether Mollie is on the volleyball team? Definitely not. She couldn’t be. Everyone on the volleyball team is tall. That’s why I think that Mollie is not on the team.  
你问我Mollie是否在排球队？绝对不是。她不可能在队里。排球队的每个人都很高。这就是为什么我认为Mollie不在队里的原因。

Probable assumption: Mollie is not tall.  
可能的假设：Mollie 不高。

Adding a proposition that would strengthen the inference part of an argument— often by making the argument deductively valid (or loosely so)—is a standard procedure for attributing assumptions to arguments. But there are pitfalls and qualifications, which I shall discuss after looking at some uses of the word assumption and considering several reasons for attributing assumptions to arguments or explanations.  
添加一个命题，可以加强论证的推理部分 - 通常通过使论证具有演绎有效性（或宽松有效性） - 这是将假设归因于论证的标准程序。但是，这里存在一些陷阱和限制，我将在查看一些对假设一词的用法并考虑将假设归因于论证或解释的几个原因之后进行讨论。­­

Two Senses of the Word Assumption  
词语

Pejorative Sense  
贬义

In one standard sense of the word assumption, to call something an assumption is to claim that it is more or less dubious. This is the pejorative sense of the word assumption. (A pejorative term is one that is used to condemn or deprecate in some way.) In the trial, one juror said, “That’s an assumption,” referring to the defense attorney’s claim that Arlene was defending herself against attack. The juror was saying that the defense attorney’s claim was dubious.  
在一个标准的意义上，假设这个词的一种含义是指称某事为假设，意味着它更或多或少是可疑的。这是假设这个词的贬义意义。（贬义词是指以某种方式来谴责或贬低的词语。）在审判中，一名陪审员说，那是一个假设，指的是辩护律师声称阿琳正在自卫。这名陪审员是在说辩护律师的主张是可疑的。*­*

Even a conclusion can be a pejorative type of assumption, as in “Because you are wearing your hat, I assume that you are going out.” Here, the conclusion “You are going out” is an assumption, but it is offered with some hesitancy. The word assume indicates this hesitancy, and shows that the speaker regards the conclusion to be at least somewhat dubious.  
即使结论也可以是一种贬义的假设，比如因为你戴着帽子，我就假设你要出去。在这里，结论你要出去是一种假设，但是带有一些犹豫。词语假设表明了这种犹豫，并表明说话者认为这个结论至少有些可疑。

Undefended Basis  
无防守基础

In a second standard sense of the word assumption, an assumption is an undefended (in the context) starting point in an argument. It might be explicit, it might be implicit, but it is undefended in the context, and other parts of the argument are supported by it. This is the undefended-basis sense of the word assumption. In Example 7:9, the proposition that Mollie is not tall is an implicit undefended-basis assumption. The proposition “Everyone on the volleyball team is tall” is an explicit undefended- basis assumption. When engaged in attributing and identifying assumptions, we usually are looking for the implicit ones. They are usually less obvious, and thus more likely to slip by unnoticed.  
在第二个标准意义上，假设是一个论证中未被辩护（在上下文中）的起点。它可能是明确的，也可能是隐含的，但在上下文中是未被辩护的，并且论证的其他部分都由它支持。这是假设这个词的未被辩护基础的意义。在例子7:9中，莫莉不高的命题是一个隐含的未被辩护基础的假设。每个排球队的人都高的命题是一个明确的未被辩护基础的假设。当我们在归因和识别假设时，通常是在寻找隐含的假设。它们通常不太明显，因此更容易被忽视。­­ally

The undefended-basis sense of the word assumption is not necessarily associated with the pejorative sense. We can call a proposition an undefended basis without implying that it is dubious. This is often done in mathematics. However, in everyday situations, the two senses of the word assumption often overlap. That is, often things called assumptions are held to be both undefended and dubious. In order to avoid confusion and to concentrate on the techniques and criteria for undefended-basis assumptions, I shall in the rest of this chapter focus on the undefended-basis sense of the word assumption, not the pejorative sense.  
假设这个词的无防御基础意义并不一定与贬义意义相关联。我们可以称一个命题为无防御基础，而不意味着它是可疑的。这在数学中经常发生。然而，在日常情况中，这个词的两个意义常常重叠。也就是说，通常被称为假设的事物既被认为是无防御的，又被认为是可疑的。为了避免混淆并集中讨论无防御基础假设的技巧和标准，我在本章的其余部分将专注于假设这个词的无防御基础意义，而不是贬义意义。

Reasons for Attributing Assumptions to Arguments  
归因假设于论证的原因。

Evaluation of Arguments  
评估论证

­ment. If an assumption in an argument is false, then the argument does not establish its conclusion, even if the stated reasons are true and the argument is deductively valid (when the assumption is added). Example 7:10 provides a sample conversation.A common reason for attributing assumptions to arguments is to evaluate the argument. If an assumption in an argument is false, then the argument does not establish its conclusion, even if the stated reasons are true and the argument is deductively valid (when the assumption is added). Example 7:10 provides a sample conversation.  
将假设归因于论点的常见原因是为了评估论证。如果论证中的假设是错误的，那么即使陈述的理由是真实的且论证在逻辑上是有效的（加入了假设），它也不能建立其结论。示例7:10提供了一个样本对话。

Example 7:10

Sue: Is Mollie on the volleyball team?  
苏：莫莉在排球队吗？

Mike: Definitely not.  
绝对不。

Sue: How do you know?  
苏：你怎么知道？

Mike: Because everyone on the volleyball team is tall.  
因为排球队的每个人都很高。

Sue: You’re assuming that Mollie is not tall, but you’re wrong. I guess you haven’t seen her lately. You can’t be sure from what you said that she is not on the team.  
你假设莫莉不高，但你错了。我猜你最近没见过她。从你说的话不能确定她不在队伍里。

In Example 7:10, Sue attributed the assumption “Mollie is not tall” to Mike’s argument (which is basically the argument presented in Example 7:9). Sue then found Mike’s argument defective because it made a false assumption. So Sue judged that Mike’s conclusion had not been established.  
在例子7:10中，苏将假设莫莉不高归因于迈克的论点（基本上是例子7:9中提出的论点）。苏随后发现迈克的论点有缺陷，因为它做出了错误的假设。因此，苏判断迈克的结论尚未被证实。

On the other hand, if the assumptions and the reasons in an argument are true, and together they give very strong support for the conclusion, then the argument should probably be judged to be acceptable and the conclusion accepted.  
另一方面，如果一个论点中的假设和理由是真实的，并且它们共同对结论提供了非常有力的支持，那么这个论点很可能被认为是可接受的，结论也应该被接受。

Figuring Out What Another Person Is Thinking  
弄清楚另一个人在想什么

­ing of the arguer so that we know what to expect of that person in the future or so that we can judge that person.Often we attribute assumptions to arguments in order to get clear about the thinking of the arguer so that we know what to expect of that person in the future or so that we can judge that person.  
通常我们会将假设归因于论点，以便清楚了解辩论者的思维，从而知道将来可以对该人有何期待，或者可以对该人进行评判。

Example 7:11

Teacher: Sam should receive an A because he did well on the test.  
老师：Sam应该得到一个A，因为他在考试中表现得很好。

After hearing a teacher make the comment in Example 7:11, a student might attribute to the teacher the assumption that people who did well on the test should get A’s or, more generally, that people who do well on tests get A’s. The student’s purpose here is not to evaluate the teacher’s argument. The purpose is to figure out the teacher. More evidence is needed to be sure that this is the right assumption to attribute to the teacher, but my point here is to exhibit this second purpose that peo- pie have for attributing assumptions: figuring out what other people are thinking (their motives, values, beliefs, etc.). We do this sort of thing with arguments by political candidates, as well as the arguments of close friends. However, because people know we do this, they sometimes deliberately mislead us about their true motives and beliefs. So be wary.  
在听到教师在示例7:11中发表评论后，学生可能会将教师的假设归因为在考试中表现良好的人应该得到A，或者更一般地说，在考试中表现良好的人会得到A。学生在这里的目的不是评估教师的论点，而是弄清楚教师的想法。需要更多证据来确保这是正确的假设归因给教师，但我在这里的观点是展示人们归因假设的第二个目的：弄清楚其他人在思考什么（他们的动机、价值观、信仰等）。我们对政治候选人的论证以及亲密朋友的论证都会这样做。然而，因为人们知道我们这样做，他们有时会故意误导我们关于他们真正的动机和信仰。所以要谨慎。­ical candidates, as well as the arguments of close friends. However, because people know we do this, they sometimes deliberately mislead us about their true motives and beliefs. So be wary.

Showing What Someone's Real Commitments Are  
展示某人真正的承诺

­one is to try to show the real commitments of a person. We might do this in order to show that the person is really on our side, or really against us, or really lined up with some view that the person claims to oppose or have doubts about, etc. For example, in A third, much less frequently pursued purpose for attributing assumptions to someone is to try to show the real commitments of a person. We might do this in order to show that the person is really on our side, or really against us, or really lined up with some view that the person claims to oppose or have doubts about, etc. For example, in a debate with Bertrand Russell, F. C. Copleston once urged that scientists in their investigations assume that nature is uniform—that there is a universal regularity' in the nature of things.4 He did this in order to show that scientists arc really on his side in support of the proposition that nature is uniform. Russell did not think that nature is necessarily uniform.  
将假设归因于某人的第三个目的，很少被追求，是为了试图展示一个人的真实承诺。我们可能这样做是为了表明这个人真的站在我们这一边，或者真的反对我们，或者真的支持某个他声称反对或怀疑的观点等等。例如，在与伯特兰·罗素的辩论中，F·C·科普尔斯顿曾经敦促科学家在他们的研究中假设自然是一致的——事物的本质具有普遍的规律性。他这样做是为了表明科学家们实际上支持他关于自然是一致的命题。罗素并不认为自然必然是一致的。­tists in their investigations assume that nature is uniform—that there is a universal regularity' in the nature of things.

A Basic Deductive Gap-Filling  
基本演绎填空

Move in Assumption Attribution  
移动假设归因

As vou will see, there are usually various possible assumptions that can be attributed in a situation, but a good first guess is the simplest, most plausible proposition that transforms an argument into a deductively valid one. Consider Examples 7:12, 7:13, and 7:14, drawing on situations used in the chapters on deduction.  
正如你所看到的，通常有多种可能的假设可以归因于一个情况，但一个好的第一猜测是最简单、最合理的命题，它可以将一个论证转化为演绎有效的论证。请参考第7个例子：12、13和14，这些例子是根据演绎章节中使用的情境绘制的。

Example 7:12

Argument: All of Thomas Mann’s books are good, so Magic Mountain must be a good book.  
论点：托马斯·曼的所有书都很好，所以《魔山》一定是一本好书。

Assumption: Magic Mountain is by Thomas Mann.  
假设：《魔山》是托马斯·曼的作品。

Example 7:13

Argument: Those wheat plants must be weeds because all unwanted plants are weeds.  
争论：那些小麦植物一定是杂草，因为所有不需要的植物都是杂草。

Assumption: Those wheat plants are unwanted.  
假设：那些小麦植物是不需要的。

Example 7:14

Argument: If the blood is Al’s, it is type A. So it is not Al’s blood. Assumption: It is not type A.  
论点：如果血液是Als，则为A型。所以它不是Als血液。假设：它不是A型。

Sometimes there are two or more appealing assumptions, any of which would fill the gap to make the sequence deductively valid, as in Example 7:15.  
有时候会有两个或更多吸引人的假设，其中任何一个都可以填补这个空缺，使得这个序列在逻辑上成立，就像例子7:15一样。

1. Bertrand Russell and F. C. Copleston, “A Discussion on the Existence of God” (first broadcast on the Third Programme of the British Broadcasting Corporation, January 28, 1948).   
   伯特兰·罗素和F·C·科普尔斯顿，《关于上帝存在的讨论》（首次在英国广播公司第三频道播出，1948年1月28日）

Example 7:15

Argument: Because John continually puts people down, he must feel insecure. Two Possible Assumptions: 1. Males who continually put people down feel insecure 2. People who continually put others down feel insecure.  
论点：由于约翰不断贬低他人，他一定感到不安。两个可能的假设：1. 经常贬低他人的男性感到不安。2. 经常贬低他人的人感到不安。

Ordinarily, when choosing one from among several candidates, we should try to be as charitable as we can to the arguer. It is not fair to the arguer to claim that his or her argument needs something stronger than it really needs.  
通常情况下，在从几个候选人中选择一个时，我们应该尽量对争论者表示宽容。声称争论者的论点需要比实际需要更强的支持是不公平的。

Presuppositions  
预设条件

Another type of assumption attribution depends not on filling gaps in arguments, but on the meaning of the words in statements. Often, individual statements assume things without explicitly asserting them. Such assumptions are sometimes dangerous because they can slip things by us without our noticing them, as might happen in Examples 7:16 and 7:17.  
另一种假设归因的类型不依赖于填补论证中的空缺，而是依赖于陈述中的词语含义。通常，个别陈述会假设某些事情，而不是明确地断言它们。这种假设有时是危险的，因为它们可能在我们没有注意到的情况下逃脱我们的注意，就像在例子7:16和7:17中可能发生的情况一样。

Example 7:16

The students’ bias is the fault of the parents, not the teachers.  
学生的偏见是父母的责任，而不是教师的责任。

Example 7:17

The great strength of our economy is attributable to our system of free enterprise.  
我们经济的巨大实力归功于我们的自由企业制度。

­tem of free enterprise, you are still committed to the belief that our economy has great strength. These statements are like the question “Have you stopped beating your child?” Either a ⅛or These examples appear to be attempting to allocate responsibility, but they assume (that is, presuppose) that the students are biased and that our economy has great strength. If you straightforwardly affirm or deny either statement in Examples 7:16 and 7:17, you are accepting the presupposition. That is, if you deny Example 7:16 by saying that it is not the parents’ fault, you are still committed to the students’ being biased. If you deny Example 7:17 by saying that it is not attributable to our system of free enterprise, you are still committed to the belief that our economy has great strength. These statements are like the question “Have you stopped beating your child?” Either a ⅛or No answer commits you to having beaten your child (the presupposition of that question).  
这些例子似乎试图分配责任，但它们假设（即预设）学生们有偏见，我们的经济非常强大。如果你在例子7:16和7:17中直接肯定或否定任何一个陈述，那么你就接受了这个预设。也就是说，如果你否定例子7:16，说这不是父母的错，你仍然认同学生们有偏见。如果你否定例子7:17，说这不是我们自由企业体制的问题，你仍然认同我们的经济非常强大。这些陈述就像一个问题：你停止打你的孩子了吗？无论是回答是还是否定，都意味着你曾经打过你的孩子（这个问题的预设）。

­times difficult) thing is to Presuppositions are easy to identify if you are sensitive to their presence. That is, the presuppositions “They are biased,” “This economy has great strength,” and “You have beaten your child at some time” are clearly there. No one would question their being presupposed once their presence is noticed. The important (and sometimes difficult) thing is to notice them, and be ready to challenge them, if they are dubious.  
预设条件很容易识别，如果你对它们的存在敏感的话。也就是说，预设条件是有偏见的，这个经济非常强大，你曾经打过你的孩子，这些都是明显存在的。一旦注意到它们的存在，没有人会质疑它们的预设。重要的（有时也很困难）是要注意到它们，并准备好质疑它们，如果它们是可疑的。

Summary and Comment  
摘要和评论

Although one of the senses of the word assumption is pejorative, for our purposes here, I shall avoid that sense. But keep it in mind when communicating with others.   
尽管“假设”一词有一种贬义的意义，但在我们这里，我将避免使用这种意义。但在与他人沟通时，请记住这一点。

You will often use and encounter the pejorative sense of assumption and will need to attend to the pejorative claim involved.  
你经常会使用和遇到偏见的假设，并需要关注所涉及的贬义主张。

There are at least three reasons for identifying or attributing undefended-basis assumptions: To flesh out an argument or explanation so that it can be evaluated for its strength, to figure out the thinking of someone who has offered an argument or explanation, and (less often) to show that someone is committed for or against some position.  
至少有三个原因可以确定或归因于无防御基础假设：为了充实一个论证或解释，以便评估其强度；为了理解提出论证或解释的人的思维方式；以及（较少见的情况）为了表明某人对某个立场是支持还是反对。

­ple proposition that makes the stated material into a deductively valid argument, and that is charitable to the arguer. This added proposition is likely to be an assumption that can be attributed to the position.A common first step in attributing an assumption to a position is to add a simple proposition that makes the stated material into a deductively valid argument, and that is charitable to the arguer. This added proposition is likely to be an assumption that can be attributed to the position.  
将一个假设归因于一个立场的常见第一步是添加一个简单的命题，使陈述的材料成为演绎有效的论证，并对争辩者表示友善。这个添加的命题很可能是可以归因于该立场的假设。

A presupposition is a proposition that is embodied in a statement and assumed by it. It is also assumed by the denial of the statement, so it might slip by unnoticed.  
预设是一个包含在陈述中并被其假设的命题。它也被否定陈述所假设，因此可能被忽略。

Because there is more than one way to convert an argument or explanation into a deductively valid sequence, you have to be cautious in attributing assumptions. You might be wrong even though the proposition does convert the sequence into a valid deductive sequence. It is usually best to check with the person making the assumption, if you can, by asking, “Are you assuming that. . .?” or “Are you basing your decision on this idea: . . . ?” or some such question.  
因为有多种方式将论证或解释转化为演绎有效的序列，所以在归因假设时必须谨慎。即使命题将序列转化为有效的演绎序列，你可能也会错。通常最好与假设的人核实，如果可以的话，可以问一下：你是在假设……吗？或者你的决定是基于这个想法吗：……？或类似的问题。­

One difficulty with the first question, “Are you assuming that. . . ?,” is that the word assuming might be taken pejoratively. That is, you might be taken to be suggesting that the assumption is dubious or false (which it might well be); in response, the speaker might resist admitting it as an assumption because he or she thinks that such an admission implies the admission of dubiousness or falsity. Therefore, you must be sensitive to how such an inquiry will be taken.  
第一个问题“你是否假设……？”的一个困难是，假设这个词可能被贬低地理解。也就是说，你可能会被认为在暗示这个假设是可疑或错误的（它很可能是）；作为回应，说话者可能会抵制承认它是一个假设，因为他或她认为这样的承认意味着承认可疑性或错误性。因此，你必须对这样的询问会如何被理解保持敏感。­

Check-Up 7B

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

7:11 Assumptions cannot be conclusions.  
7:11 假设不能成为结论。

7:12 The word assumption is often used pejoratively.  
7:12 这个词常常带有贬义。

7:13 There is one and only one possible proposition that can convert an argument with a deductive gap into a deductively valid one.  
7:13 有且只有一个可能的命题可以将具有演绎间隙的论证转化为演绎有效的命题。

7:14 In the following sequence, the proposition labeled “A” is a possible candidate for being the assumption of the argument.  
在下列顺序中，标记为A的命题可能是该论证的假设。

Argument: Mike is not a dog because all dogs are animals.  
争论：Mike不是一只狗，因为所有的狗都是动物。

A Mike is not an animal.  
Mike不是动物。

7:15 The proposition labeled “A,” if added to the argument, would make it deductively valid.  
7:15 标记为A的命题，如果添加到论证中，将使其具有演绎有效性。

Argument: Nothing written by that bureaucrat makes any sense, so Regulation EZTHINK was not written by that bureaucrat.  
争论：那个官僚写的东西一点意义都没有，所以《EZTHINK规定》不是那个官僚写的。

A: Regulation EZTHINK does not make any sense.   
规定EZTHINK没有任何意义。

Short Answer  
简答题

For each of the following, add a proposition that would make the sequence deduc­tively valid. If there is a choice among candidates of different amounts of complexity and plausibility, pick the simplest and most plausible one. Do this on a separate piece of paper. (Note: For the arguments that refer to the trial, it might be helpful to refer to the statement of conditions for voluntary manslaughter and murder in Example 7:1 and Check-Up item 7:8.)

7:16 If Karl lost the election, then he is a fool. Therefore, Karl is a fool.  
对于以下每个情况，添加一个命题，使得序列具有演绎有效性。如果有多个候选命题，其复杂度和可信度不同，请选择最简单和最可信的一个。请在一张独立的纸上完成此任务。（注意：对于涉及审判的论证，参考《例7:1中故意杀人和谋杀的条件陈述》和《检查项目7:8》可能会有帮助。）7:16 如果卡尔输掉选举，那么他是个傻瓜。因此，卡尔是个傻瓜。

7:17 If Karl lost the election, then he is a fool. Therefore, Karl did not lose the election.  
7:17 如果卡尔输掉了选举，那么他就是个傻瓜。因此，卡尔没有输掉选举。

7:18 If Cecilie won the tennis tournament, then Mirabelle is dejected. Therefore, Cecilie must have lost.  
7:18 如果Cecilie赢得了网球比赛，那么Mirabelle会感到沮丧。因此，Cecilie一定输了。

7:19 Motorcycles are legally classified as motor vehicles, so Sarah’s motorscooter is legally classified as a motor vehicle.  
7:19 摩托车在法律上被归类为机动车辆，所以Sarah的摩托车在法律上被归类为机动车辆。

7:20 Mary is in good spirits today. Therefore, she must have gone out with Pedro last night.  
7:20 玛丽今天心情很好。因此，她昨晚一定和佩德罗出去了。

7:21 Pedro must be in good spirits today. I know this because he went out with Mary last night.  
7:21 今天Pedro一定心情很好。我知道这是因为他昨晚和Mary出去了。

7:22 If Arlene did it, then she admitted it. Therefore, she did not do it.  
7:22 如果阿琳做了，那么她承认了。因此，她没有做。

7:23 If Shakespeare had intended Polonius to be a comic figure, then he would not have made Polonius the father of two tragic charact ers. Therefore, Shakespeare did not intend Polonius to be a comic figure.  
7:23 如果莎士比亚打算让波洛尼厄斯成为一个喜剧人物，那么他就不会让波洛尼厄斯成为两个悲剧角色的父亲。因此，莎士比亚并不打算让波洛尼厄斯成为一个喜剧人物。

7:24 The strawberries in the cabbage patch are weeds because we do not want them there.  
7:24 白菜地里的草莓是杂草，因为我们不希望它们在那里。

7:25 Raoul is in good physical shape because he plays soccer.  
7:25 Raoul因为踢足球而身体状况良好。

7:26 Zoning is unjust because it interferes with the desires of honest people. 7:27 Fights should be avoided because they hurt people.  
7:26 分区是不公正的，因为它干涉了诚实人的愿望。7:27 应该避免争斗，因为它会伤害人们。

7:28 Contemporary pop music is repetitive, uninteresting, and a threat to the peace, so it should be banned.  
7:28 当代流行音乐重复、无趣且对和平构成威胁，因此应该被禁止。

7:29 Everyone on the team is tall, so John is tall.  
7:29 队伍中的每个人都很高，所以约翰也很高。

7:30 Everyone on the team is tall, so Enrico is not on the team.  
7:30 队伍中的每个人都很高，所以恩里科不在队伍中。

7:31 Good chess players are critical thinkers, so Sally is a critical thinker.  
7:31 好的棋手是批判性思考者，所以莎莉是批判性思考者。

7:32 Texas Jane will certainly lash out at the world because she has been treated unfairly for her entire life.  
7:32 德克萨斯州简一定会对世界发泄怒火，因为她一生都受到了不公平的对待。

7:33 The new mayor made mistakes in her first speech because she is inexperienced.  
7:33 新市长在她的首次演讲中犯了错误，因为她缺乏经验。

7:34 Our students are not permitted in this joint because nobody under eighteen is permitted.  
7:34我们的学生不被允许进入这个地方，因为未满十八岁的人不被允许进入。

7:35 Because all genuine foods contain carbon, hydrogen, and oxygen, all genuine foods are carbohydrates.  
因为所有真正的食物都含有碳、氢和氧，所以所有真正的食物都是碳水化合物。

7:36 If she killed him, then she performed the act that caused his death. Therefore, the first condition for murder is satisfied. (Hint: Fill two gaps here. Reminder: The statement of conditions given us for the charge of murder is in Check-Up item 7:8. Use it.)

­mitted on Rock Island, June’s Honda is not permitted on Rock Island.7:37 Because June’s Honda is a motorcycle and motor vehicles are not permitted on Rock Island, June’s Honda is not permitted on Rock Island.   
7:36 如果她杀了他，那么她就执行了导致他死亡的行为。因此，谋杀的第一个条件得到满足。（提示：在这里填写两个空缺。提醒：我们得到的关于谋杀指控的条件陈述在检查项目7:8中。请使用它。）7:37 因为Junes Honda是一辆摩托车，而摩托车不允许在洛克岛上行驶，所以Junes Honda不被允许进入洛克岛。

**7:38 Nothing written by that bureaucrat makes any sense. Because Regulation EZTHINK was written by that bureaucrat, I refuse to publish it.  
7:38 那个官僚写的东西一点意义都没有。因为《EZTHINK法规》是由那个官僚写的，我拒绝发布它。**

**7:39 Nobody under thirty-five can be president. Because Tina is under thirty-five, we should not nominate her to be president.  
7:39 无论如何，35岁以下的人不能成为总统。由于Tina年龄不到35岁，我们不应该提名她担任总统。**

**7:40 If the Board of Education suspends Tammy from school, then it will be punishing her for expressing her opinions. If it does that, it will be acting unconstitutionally, so we can be sure that the Board of Education will not suspend Tammy.  
7:40 如果教育局将Tammy停学，那么它将因为她表达自己的观点而惩罚她。如果它这样做，那么它将违反宪法，所以我们可以确定教育局不会停学Tammy。**

**7:41** If the blow was only moderate in force, then it has not been proven beyond a reasonable doubt that she knew that there was a strong probability’ of great bodily harm. Because the blow was only of moder­ate force, she is not guilty. (Reminder: See Check-Up item 7:8 for the conditions for the charge of murder.)

**7:42 Samantha, if she is in town, is at the cinema. Because Samantha is not at the cinema, she must be in the country.  
7:41 如果打击只有适度的力量，那么无法证明她知道有很大可能造成严重伤害。因为打击只有适度的力量，她不应被判有罪。（提醒：请参阅检查项7:8，了解谋杀指控的条件。）7:42 如果萨曼莎在城里，她在电影院。因为萨曼莎不在电影院，她一定在乡下。**

**7’43 If our leader told you to commit suicide, then he is not worthy of being our leader. If our leader told you to drink poison, then he has told you to commit suicide. Because our leader did tell you to drink poison, I should be leader.  
如果我们的领导告诉你去自杀，那么他不值得成为我们的领导。如果我们的领导告诉你喝毒药，那么他就是让你去自杀。因为我们的领导确实告诉你喝毒药，所以我应该成为领导。**

7:44 Whoever misses band practice is in trouble with the director. Whoever goes to the meeting will miss band practice. Marla is going to the meeting. Therefore, Marla will be kicked out of the band.  
7:44 谁错过了乐队排练，将会受到指导老师的惩罚。谁去参加会议，将会错过乐队排练。Marla要去参加会议。因此，Marla将被踢出乐队。

**7:45** She was not justified in using the force she used because she could have run away to her parents’ room. Therefore, she is guilty of volun­tary manslaughter. (Hint: Fill two gaps here. Reminder: The condi­tions given us to establish the charge of voluntary manslaughter are in Check-Up item 7:1. Use them.)

Medium Answer  
中等答案

**7:46 Select a sentence from a newspaper or magazine that contains a presupposition with which you agree and a sentence containing one with which you disagree. Identify them, indicating which is which.  
7:45她使用的武力是不合理的，因为她本可以逃到她父母的房间。因此，她犯有自愿杀人罪。（提示：在这里填写两个空白。提醒：我们给出的条件是为了确定自愿杀人罪的指控，可以在检查项目7:1中找到。请使用它们。）中等回答7:46从报纸或杂志中选择一句包含您同意的预设的句子，以及一句包含您不同意的预设的句子。识别它们，并指出哪个是哪个。**­supposition with which you agree and a sentence containing one with which you disagree. Identify them, indicating which is which.

Applications of Deductive Logic in Writing Position Papers  
写立场文件中演绎逻辑的应用

In position papers, as well as any other writing in which you take positions (that is, make points and give reasons), deductive logic, loose derivation, and assumption identification play an important role. Usually, this role is part of a larger argument.  
在立场文件中，以及任何其他你表达立场（即提出观点并给出理由）的写作中，演绎逻辑、松散推导和假设识别起着重要作用。通常，这个作用是更大论证的一部分。

Deductive Logic and Loose Derivation  
演绎逻辑和松散推导

Sometimes, you use (or find) straightforward deduction, as in Example 7:18, which is adapted from a recent newspaper editorial and exemplifies denying-the-consequent reasoning.   
有时候，你使用（或找到）直接推理，就像例子7:18一样，它改编自最近的一篇报纸社论，展示了否定因果推理。

Example 7:18

The president was unaware that these things would have such an impact. If she had known, she would not have done them. [Unstated assumption: She did them]

Example 7:18 is a strong argument if the reasons are true. In the selection from which I have taken this argument, a larger point was being made that the president is naive. The president’s not being aware was supposedly explained by the president’s naivete, and thus was evidence for this alleged naivete. So this is a case in practical writing in which deduction played an important role, although it was only part of the total argument.  
总统不知道这些事情会产生如此大的影响。如果她知道的话，她就不会做这些事情了。[未明示的假设：她做了这些事情]如果理由是真实的，那么例子7:18是一个有力的论证。在我选取这个论证的来源中，有一个更大的观点，即总统是天真的。总统不知道被总统的天真所解释，因此成为了这种所谓天真的证据。所以这是一个实际写作中演绎起重要作用的案例，尽管它只是整个论证的一部分。

­ments or loose derivations in your larger arguments. When you do so, make sure that Similarly, you will often find it convenient to incorporate deductively valid arguments or loose derivations in your larger arguments. When you do so, make sure that the deductive parts are deductively valid.  
同样，你会经常发现在你的更大的论证中，将演绎有效的论证或松散的推导纳入其中是很方便的。当你这样做时，请确保演绎部分是演绎有效的。

Straightforward Assumption Identification  
直接假设识别

­ing in writing (or orally) to the writing of others. People usually do not state their You will note that I did some assumption identification in presenting the argument of Example 7:18. This sort of assumption identification is usually necessary in responding in writing (or orally) to the writing of others. People usually do not state their full arguments, often because doing so seems to be a waste of time. In Example 7:18, it probably would have been a waste of time for the writer to state explicitly that the president did these things. It is obvious that this proposition is part of the argument. Identifying this assumption is so easy that the author did not bother to state it.  
你会注意到，在展示例7:18的论证时，我进行了一些假设的识别。这种假设的识别通常在书面（或口头）回应他人的写作时是必要的。人们通常不会陈述他们的完整论证，往往是因为这样做似乎是浪费时间。在例7:18中，作者明确陈述总统做了这些事情可能是浪费时间的。显然，这个命题是论证的一部分。识别这个假设是如此容易，以至于作者没有费心去陈述它。

Incidentally, in this case, the assumption identification is made easier by the fact that the one identified in Example 7:18 is not only a gap-filling assumption, but also a presupposition, given the way the argument is stated. The phrase “she would not have done them” presupposes that she did them. In that context, the use of that phrase involves a commitment to the assumption, regardless of the argument, making it a presupposition as well.  
顺便提一下，在这种情况下，假设的识别变得更容易，因为在例子7:18中所确定的不仅是一个填补空白的假设，而且还是一个预设，这是由于论证陈述的方式所决定的。短语“她不会做这些”预设了她确实做了这些事情。在这种情境下，使用该短语就意味着对该假设的承诺，无论论证如何，使其成为一个预设。­ing it a presupposition as well.

But although its being an assumption is obvious, bringing such an assumption out in the open is often helpful. Suppose that you believe that the president actually did not do the things to which reference is made, or that it is uncertain whether or not she did them, or that she only did some of them and those that she did had lithe impact. Bringing the assumption out in the open is then a necessary step in writing a reply to the argument in Example 7:18. The argument is no stronger than its reasons, including its assumptions. In writing a reply, if the assumption is dubious, it should be made explicit and then discussed.  
但尽管它是一个明显的假设，将这样一个假设公之于众通常是有帮助的。假设你相信总统实际上没有做与所提及的事情，或者不确定她是否做了这些事情，或者她只做了其中一些事情，并且她所做的事情影响微乎其微。将这个假设公之于众是回复示例7:18中的论点所必需的一步。论证的强度取决于其理由，包括其假设。在写回复时，如果假设是可疑的，应该明确表达并进行讨论。­he impact. Bringing the assumption out in the open is then a necessary step in writ­ing a reply to the argument in Example 7:18. The argument is no stronger than its reasons, including its assumptions. In writing a reply, if the assumption is dubious, it should be made explicit and then discussed.

Identifying Your Own Assumptions  
识别自己的假设

­mitting yourself to something you do not want to include in vour commitments? Are you committing yourself to something you cannot defend? If so, it is a good idea to be aware of it. I am not saying that you must be able to defend every assumption. That would be impossible if you keep going back, and back, and back. But identify­ing your basic assumptions helps you to understand yourself and your disagreements with others. Furthermore, your basic assumptions should be defensible.Similarly, it is wise to check your own assumptions when you write. Are you committing yourself to something you do not want to include in vour commitments? Are you committing yourself to something you cannot defend? If so, it is a good idea to be aware of it. I am not saying that you must be able to defend every assumption. That would be impossible if you keep going back, and back, and back. But identifying your basic assumptions helps you to understand yourself and your disagreements with others. Furthermore, your basic assumptions should be defensible.   
同样地，当你写作时，检查自己的假设是明智的。你是否在承诺自己要包含在你的承诺中的事情？你是否在承诺自己无法辩护的事情？如果是这样，意识到这一点是一个好主意。我并不是说你必须能够辩护每一个假设。如果你不断回头，回头，回头，那是不可能的。但是识别你的基本假设有助于你理解自己和与他人的分歧。此外，你的基本假设应该是可辩护的。

Though not a writing example, the jury’s judgment that Arlene was not justified in using the force she used employed an argument (Item 7:45, repeated as Example 7:19) using an unstated assumption that has since been identified and questioned by some associates.5  
虽然不是一个写作例子，陪审团的判断是阿琳在使用她所使用的武力时没有正当理由，这个判断使用了一个未明示的假设（项目7:45，作为例子7:19重复出现），这个假设已经被一些同事发现并质疑。5­fied in using the force she used employed an argument ­tioned by some associates.

Example 7:19

She was not justified in using the force she used because she could have run away to her parents’ room. (Reminder: Establishing that she was not justified in using the force she used was a necessary condition in both the murder and voluntary manslaughter charges. See Example 7:1 and Check-Up item 7:8.)

Although more assumptions are needed to completely fill the gap in the reasoning, the key controversial assumption that has been attributed to the jury’s argument was that in responding to a death threat, women are not justified in using deadly force when escape from the situation is available.  
她使用的武力是不合理的，因为她本可以逃到她父母的房间。(提醒：在谋杀和自愿杀人指控中，证明她使用的武力是不合理的是一个必要条件。参见例子7:1和检查项目7:8。)虽然需要更多的假设来完全填补推理中的空白，但被归因于陪审团论证的关键有争议的假设是，在面对死亡威胁时，女性如果有逃离情况的机会，就不能合理地使用致命武力。­soning, the key controversial assumption that has been attributed to ­

The members of the jury did not stop to consider the assumptions behind the reasoning in Example 7:19. If they had, the decision could possibly have been different. It might have been the same though, on the ground that both men and women are not justified in using deadly force in responding to threats of death when escape from the situation is available. How would you have decided in this matter?  
陪审团成员没有停下来考虑在例7:19的推理背后的假设。如果他们这样做了，决定可能会有所不同。尽管如此，可能会得出相同的结论，因为当逃离情况是可行的时候，男人和女人都没有理由使用致命武力来应对死亡威胁。你在这个问题上会如何决定？­

Regardless of how you would have decided, I hope that you see the importance of bringing forward unstated assumptions of your own arguments, in writing as well as verbal exchanges. The critical thinking disposition to try to be reflectively aware of one’s own basic beliefs, mentioned in Chapter 1, applies here.  
无论你如何决定，我希望你能意识到在写作和口头交流中提出自己论点中未明示的假设的重要性。在第一章提到的试图反思自己的基本信念的批判性思维倾向，在这里同样适用。

Slippery Assumption Identification  
滑动假设识别

A significant danger in identifying someone else’s assumptions is attributing assumptions that are more broad than the person needs, so broad that the assumption is easy to refute. You saw the potential for this before in the Texas Jane case (Item 7:32). One possible gap-filler in that argument is that all creatures throughout time that are treated unfairly for their entire lives will lash out at the world. This assumption is easy to refute for two reasons. First, it is a universal statement, and there are usually counterexamples to universal statements. Second, it is about all creatures throughout time, including horses and slaves, and we know of some who were treated unfairly throughout their lives, but did not lash out.  
识别他人假设的一个重要危险是归因于比对方需要的更广泛的假设，以至于这个假设很容易被反驳。你之前在德克萨斯简案中（项目7:32）就看到了这种潜在的可能性。在那个论证中，一个可能的填补缺口是，所有在整个生命中受到不公平对待的生物都会对世界发起反击。这个假设很容易被反驳，有两个原因。首先，它是一个普遍的陈述，通常普遍陈述都有反例。其次，它涉及到所有在整个时间中的生物，包括马和奴隶，我们知道有一些生物在整个生命中受到不公平对待，但并没有反击。­­­out

A more modest assumption would be that contemporary Texans tend to lash out at the world, if they have been treated unfairly for their entire lives. It is more modest in part because it refers to a much smaller group, a group many of whose members advertise their dislike for being messed with. It is also more modest because of the inclusion of the words tend to, which, even though the conclusion no longer follows necessarily, still provide gap-filling potential through the process of loose derivation. This more modest assumption might be false, but it is more defensible than the universal timeless one about creatures. To attribute this modest assumption to the position could well be more fair to the position.  
一个更加谦虚的假设是，当代的德克萨斯人倾向于对世界发泄怨气，如果他们一生都受到不公平的对待。这个假设更加谦虚，部分原因是它涉及到一个规模更小的群体，其中许多成员宣称不喜欢被干扰。它也更加谦虚，因为包含了倾向于这个词，即使结论不再必然成立，仍然通过松散推导的过程提供了填补空白的潜力。这个更加谦虚的假设可能是错误的，但比起关于生物的普遍永恒的假设更有辩护性。将这个谦虚的假设归因于这个立场可能更加公平。

1. Including my astute associate, Professor Anita Silvers of San Francisco State University.   
   包括我的敏锐的合作伙伴，旧金山州立大学的安妮塔·希尔弗斯教授。

When you are writing about a position and identifying its assumptions, try to be as fair as you can. Give the position its best chance to succeed. After all, you would not want to reject a conclusion that is actually correct.  
当你写关于一个立场并识别其假设时，请尽量公正。给予该立场最好的成功机会。毕竟，你不会希望拒绝一个实际上是正确的结论。

Furthermore, when you are responding to someone’s analysis of your position, be very wary of assumptions that the person attributes to you. People are often careless when identifying assumptions, attributing much broader assumptions than the position needs and then trying to refute the position on the ground that the position rests on a false assumption. This is one example of the straw person fallacy (setting up a “straw person” instead of the real position and refuting the set-up position). If someone does that to you, appropriate responses include asking why that assumption has been attributed to you and showing that your argument is a good one with a much less ambitious, and more plausible, assumption. Perhaps even more important, when someone attributes an assumption to you, ask yourself whether this attribution is a fair one. Can your argument stand with a less ambitious assumption?  
此外，当你回应别人对你立场的分析时，要非常警惕那些别人归因于你的假设。人们在确定假设时往往粗心大意，归属的假设比立场所需的假设要广泛得多，然后试图反驳该立场，理由是该立场建立在错误的假设上。这是稻草人谬误的一个例子（设立一个稻草人而不是真正的立场，并反驳这个设立的立场）。如果有人这样对你做，适当的回应包括询问为什么会将那个假设归属于你，并展示你的论点是一个很好的论点，基于一个更少雄心勃勃、更有可能的假设。也许更重要的是，当有人将一个假设归属于你时，问问自己这个归属是否公平。你的论证是否能够在一个更少雄心勃勃的假设下成立？­less

+ The Distinction Between Needed and  
所需和不需要之间的区别

Used Implicit Assumptions in Real Situations  
在真实情境中使用隐含假设

As you saw earlier, in attributing assumptions, you should try to be fair to the posi­tion. In actually deciding what to attribute, it helps to be clear about why you are attributing an assumption to the person or position. Are you trying to evaluate the argument to see whether you should believe the conclusion? Are you trying to show that the assumer is committed to something? Or are you trying to find out something about the way the person thinks? If you are trying to do the first two things, you are looking for *needed, assumptions.* If the third, you are looking for a *used assumption.6*

Needed Assumptions

Evaluating a Position

­itable in attributing assumptions to the position. In argument evaluation aimed at deciding the acceptability of the conclusion, you do not give an argument with an obviously false assumption when there is a better one available. This point was illus­trated earlier with the Texas Jane example, Example 7:19.Needed assumptions are those that the argument, position, or explanation needs in order to be at its best. Suppose you are trying to evaluate a position in order to decide whether to accept the conclusion. Then you want to find out what is needed, but you want to give the argument its best chance to succeed; otherwise you might miss a good argument and fail to accept a conclusion that is justified. So you should be charitable in attributing assumptions to the position. In argument evaluation aimed at deciding the acceptability of the conclusion, you do not give an argument with an obviously false assumption when there is a better one available. This point was illustrated earlier with the Texas Jane example, Example 7:19.  
```正如您之前所看到的，在归因假设时，您应该尽量公正地对待立场。在决定要归因的内容时，清楚地知道为什么要将假设归因给某个人或立场是有帮助的。您是想评估论证以确定是否应该相信结论吗？您是想表明假设者对某事有承诺吗？还是您想了解这个人的思维方式？如果您是前两种情况，那么您正在寻找必要的假设。如果是第三种情况，您正在寻找使用的假设。6必要的假设评估一个立场必要的假设是论证、立场或解释所需要的，以使其达到最佳状态。假设您正在评估一个立场，以决定是否接受结论。那么您想要找出需要什么，但您希望给予论证最好的成功机会；否则，您可能会错过一个好的论证，并未能接受一个合理的结论。因此，在为立场归因假设时，您应该慷慨地对待。在旨在决定结论可接受性的论证评估中，当有更好的假设可用时，您不会提出一个明显错误的假设。这一点在之前的德克萨斯简例中有所说明，例子7:19。```

Ascertaining the Commitments of a Person or Position  
确定一个人或职位的承诺

Similarly, when we are ascertaining the commitments of a person or a position, we look for needed assumptions and again should be charitable. We do not want to say 6. For an extendi<1 discussion of these distinctions, see my “Identifying Implicit Assumptions,” Synthesc, 51, 1982, pp. 61 86. David Hitchcock (personal communication) has labeled these two types as assumptions of the argument and assumptions of the arguer, respectively.   
同样地，当我们确定一个人或一个立场的承诺时，我们寻找所需的假设，并且应该慷慨。我们不想说6。有关这些区别的详细讨论，请参阅我的《确定隐含假设》，Synthesc，51，1982年，第61-86页。大卫·希奇科克（个人通信）将这两种类型分别标记为论证的假设和论证者的假设。*­tions of the argument*

a position needs something implausible when it could get along with a more restricted and thus more plausible basis.  
当一个职位可以与更为严格、因此更为可信的基础相适应时，它需要一些不太可能的东西。

Used Assumptions  
使用的假设

When we are trying to figure out the thoughts or beliefs of someone, we do not try to be either charitable or uncharitable. Instead, we try to get it right. That is, we try to determine what is actually going on in the person’s head because that is what will influence the other decisions the person makes. Here we are looking for a proposition that was actually used by the person in reaching the conclusion or offering the explanation. Therefore, these assumptions can be called used assumptions.  
当我们试图理解某人的思想或信仰时，我们不会试图慷慨或吝啬。相反，我们试图弄清楚。也就是说，我们试图确定这个人的头脑中实际发生了什么，因为这将影响到这个人做出的其他决定。在这里，我们寻找的是这个人在得出结论或提供解释时实际使用过的命题。因此，这些假设可以称为已使用的假设。­tion that was actually

When identifying used assumptions, we pick from among the candidates the one that the person most probably used. In fact, here we might even pick one that does not make the argument deductively valid because the person might actually have been reasoning deductively invalidly. But unless we have reason to think otherwise, it is usually best to work from the candidates that produce deductive validity.  
在确定使用的假设时，我们从候选项中选择那个人最有可能使用的假设。实际上，我们甚至可能选择一个不使论证具有演绎有效性的假设，因为这个人可能实际上是在进行演绎无效的推理。但除非我们有理由认为不同，通常最好从产生演绎有效性的候选项入手。

When I heard a teacher say, “Sam should receive an A because he did well on the test,” I attributed to the teacher the used assumption, “People who do well on my tests should receive an A.” I believed that that proposition was in the teacher’s mind and was used to defend the decision. Incidentally, as this example shows, an assumption can be both used and needed.  
当我听到一位老师说，Sam应该得到A，因为他在测试中表现很好，我将这个假设归因于老师，即做得好的人应该得到A。我相信这个命题存在于老师的脑海中，并被用来为这个决定辩护。顺便提一下，正如这个例子所显示的，假设既可以被使用，也是必要的。

The process of identifying the one that the person most probably used is an inductive inference-to-best-explanation process, the topic of the next two chapters, so I shall only hint at it here. But the idea is to pick a proposition that best explains what the person does and says. Attributing this belief to the person should fit in with whatever else you know about the person.  
识别出人们最有可能使用的那个的过程是一种归纳推理-最佳解释过程，即下两章的主题，所以我只会在这里给出一些暗示。但是，这个想法是选择一个最好解释人们的行为和言论的命题。将这个信念归因于这个人应该与你对这个人的其他了解相符。

Summary  
摘要

In this chapter, you have seen a brief review of some basic elements of deductive logic and an attempt to show the applications of deductive logic in straight deduction from acceptable reasons, loose derivation, assumption attribution, and the evaluation of hypotheses. This latter area of application, as well as the role of deductive logic in the evaluation of generalizations, in one type of explanation, and in value judging, are further considered in Chapters 8-11.  
在本章中，您已经看到了对演绎逻辑的一些基本要素的简要回顾，并尝试展示了演绎逻辑在从可接受的理由进行直接推理、松散推导、假设归属和假设评估方面的应用。这后一种应用领域以及演绎逻辑在概括评估、某种类型的解释和价值判断中的作用，将在第8至11章进一步讨论。

Straight deduction is the direct application of deductive validity to arguments. In loose derivation, you drop the qualifying words from an argument and judge the deductive validity of the stripped argument. Then you put the words back in and, taking into account the validity judgment just made, make an overall judgment about whether to accept the conclusion, taking the situation into account. There are no precise rules for this judgment, but FRISCO is a guide to keep in mind.  
直接推理是将演绎有效性直接应用于论证的过程。在宽松推导中，您从论证中删除限定词，并判断剥离后的论证的演绎有效性。然后将词语放回去，并考虑刚刚做出的有效性判断，综合考虑情况来判断是否接受结论。对于这种判断没有确切的规则，但FRISCO是一个需要记住的指南。­ing ­cise

The word assumption is either used pejoratively or used to refer to an undefended basis, or both. Be sensitive to the possible pejorative interpretation when you are attributing assumptions or having assumptions attributed to you.  
假设­fended

­In attributing assumptions, a good first step is to find a proposition that would convert the argument or explanation into a deductively valid argument. The results are good candidates for the assumption, though not the only possible ones. If you are interested in judging the conclusion, a good next step is to pick the most plausible of the candidates.  
在归因假设时，一个好的第一步是找到一个命题，将论证或解释转化为演绎有效的论证。结果是假设的好候选者，尽管不是唯一可能的。如果你对结论感兴趣，下一步是选择最有可能的候选者。

­ing the statement commits you to the presupposition. Identification of presupposi­tions is easy, once a question has been raised about them. The problem with them is that they easily slip by unexamined.A special type of assumption, a presupposition, is a proposition implicit in a statement, but not explicitly asserted by a statement. Either agreeing with or denying the statement commits you to the presupposition. Identification of presuppositions is easy, once a question has been raised about them. The problem with them is that they easily slip by unexamined.  
一种特殊类型的假设，预设，是一个在陈述中隐含的命题，但并非由陈述明确断言。无论是赞同还是否定陈述，都会使你承担预设。一旦对它们提出了问题，就很容易确定预设。问题在于它们很容易被忽视而未经审查地通过。

In your writing, it is well to be aware of your own assumptions so that you can better understand and evaluate your own position. Similarly, in writing about the positions of other people, identifying their assumptions is helpful, again because it helps you understand and evaluate their positions.  
在写作中，了解自己的假设是很重要的，这样你就能更好地理解和评估自己的立场。同样，在写别人的立场时，识别他们的假设也是有帮助的，因为它能帮助你理解和评估他们的立场。

­ing in the straw-person fallacy. Be careful not to do this yourself, and be wary when others attribute assumptions to you. Ask yourself whether your position really needs something that broad and ambitious. On the other hand, give serious consideration to assumptions attributed to you. The attributor might have unearthed an assump­tion to which you are committed and that requires further examination. Be open- minded about it.A principal danger in assumption identification is attributing an assumption to a position that is broader and more ambitious than the position needs, often resulting in the straw-person fallacy. Be careful not to do this yourself, and be wary when others attribute assumptions to you. Ask yourself whether your position really needs something that broad and ambitious. On the other hand, give serious consideration to assumptions attributed to you. The attributor might have unearthed an assumption to which you are committed and that requires further examination. Be open- minded about it.  
在识别假设时的一个主要危险是将假设归因于比所需位置更广泛和更有雄心的位置，这通常导致稻草人谬误。小心不要自己这样做，并且当他人将假设归因于你时要保持警惕。问问自己，你的立场是否真的需要那么广泛和有雄心的东西。另一方面，要认真考虑归因于你的假设。归因者可能已经发现了你所承诺并需要进一步审查的假设。对此要持开放态度。

­sion, you attribute needed assumptions to the argument. You also attribute needed assumptions when deciding what is an implicit proposition to which the argument, explanation, or person is committed. In so doing, you usually select from candidates the one that is most plausible.+ When evaluating arguments in order to decide whether to accept the conclusion, you attribute needed assumptions to the argument. You also attribute needed assumptions when deciding what is an implicit proposition to which the argument, explanation, or person is committed. In so doing, you usually select from candidates the one that is most plausible.  
在评估论证以决定是否接受结论时，您将必要的假设归因于论证。在决定论证、解释或个人所承诺的隐含命题时，您也会归因于必要的假设。在这样做时，通常会从候选项中选择最有可能的一个。

+ When figuring out what a person believes, you identify used assumptions. To do this, you pick the one that is most likely to have been actually consciously (or unconsciously) used by the person. To decide this, vou select the one that best explains what the person did and said. The result should fit with other knowledge about the person. Best-explanation inference is the topic of subsequent chapters.  
当确定一个人的信仰时，你要识别出他所使用的假设。为了做到这一点，你选择那个最有可能被这个人实际上有意识地（或无意识地）使用的假设。为了做出决定，你选择那个最能解释这个人的行为和言论的假设。结果应该与对这个人的其他了解相吻合。最佳解释推理是后续章节的主题。

Check-Up 7C

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that vou understand.  
如果为假，请将其更改为真。尝试以一种能显示您理解的方式来做到这一点。

7:47 If a proposition fills a gap in your argument, then that proposition is an assumption of your argument.  
如果一个命题填补了你的论证中的空缺，那么这个命题就是你论证的假设。

7:48 The straw-person fallacy can be defined as attributing to a person a view the person does not hold (or does not need to hold, if an assumption), refuting that view, and then acting as if the person’s real view has been refitted.  
7:48 草人谬误可以定义为将一个观点归于某人，而该人并不持有该观点（或者如果是假设的话，不需要持有该观点），反驳该观点，然后表现得好像该人真实的观点已经被重新调整。

7:49 If a presupposition is show n to be false, then the truth or falsity of the statement of which it is a presupposition cannot be settled.  
如果一个预设被证明是错误的，那么它作为预设的陈述的真假无法确定。

+ 7:50 In attributing a needed assumption, one should try to be charitable, doing the best one can to help the argument.   
在归因所需的假设时，应尽量慷慨，尽力帮助论证。

Medium Answer  
中等答案

Consider the following passages. From the point of view of fairness in assumption attribution, tell whether you think the assumption attributions are justified and why. Add comments, if you like.  
考虑以下段落。从假设归因的公平性角度来看，您认为假设归因是否合理以及原因。如果您愿意，可以添加评论。

**7:51 Argument: You accuse me of being selfish, but there’s nothing wrong with being selfish. Everybody is selfish all the time. They can’t avoid it. After all, everyone is acting in accord with their own desires all the time, even though they might fool themselves into thinking otherwise. Even the condemned murderer marching to his execution is acting in accord with his desires. He desires to march to his execution rather than be dragged there.  
争论：你指责我自私，但自私没有错。每个人都一直都在自私。他们无法避免。毕竟，每个人都一直按照自己的欲望行事，即使他们可能自欺欺人地认为不是这样。即使是被判死刑的谋杀犯也是按照自己的欲望行动的。他希望自己走向死刑，而不是被拖走。**

Response- You’re assuming that to be selfish is to act in accord with one’s desires. But that’s not what selfish means. According to the dictionary, to be selfish is to act in one’s own interests in disregard of the interests of others. So it’s not true that people are always selfish.  
回答- 你假设自私是按照一个人的欲望行事。但这不是自私的意思。根据字典，自私是指不顾他人利益而只顾自己的行为。所以并不是每个人都自私是真实的。­tionary, to be selfish is to act in one’s own interests in disregard of the interests

**7:52 I see that you are trying to interfere with parents’ rights to raise their children as they see fit, including punishing them when needed. We all realize that punishment sometime results in injury, but that is for the best if it cures the bad behavior. You are assuming that no living thing should be injured without its consent. But that is a foolish position. We all (including you) injure living things every day. We kill animals and cut vegetable plants for food, cut trees for paper, trap mice that we feel are pests, and put painful handcuffs on criminals.  
7:52 我看到你试图干涉父母依照他们认为合适的方式抚养孩子的权利，包括在必要时对他们进行惩罚。我们都意识到，惩罚有时会导致伤害，但如果能治愈不良行为，那就是最好的结果。你假设任何生物都不应该在没有同意的情况下受伤，但这是一个愚蠢的立场。我们每天都会伤害生物，包括你自己。我们杀死动物，割下蔬菜植物作为食物，砍伐树木制造纸张，捕捉我们认为是害虫的老鼠，并给罪犯戴上痛苦的手铐。**

**7:53 We have proposed a set of zoning laws to protect property values. In particular, the proposed laws would prohibit the raising of chickens and hogs in our neighborhood. Your condemnation of our zoning laws assumes that everybody should be totally free all the time. But that is impossible If I am totally free, then I am not restrained from punching you in the nose, but then you would not be free to live your life the way you want to live it.  
我们提出了一套分区法来保护财产价值。特别是，提议的法律将禁止在我们的社区养鸡和养猪。你对我们的分区法的谴责假设每个人都应该始终完全自由。但这是不可能的。如果我完全自由，那么我就没有被限制不能打你的鼻子，但那样你就不能自由地过你想要的生活。**

**7:54 You have said that the defense attorney should not be believed because he has a raspy voice and a limp. Aren’t you assuming that having a raspy voice and a limp are indicators of lack of credibility? If so, then tell us why such things indicate lack of credibility.  
你说过辩护律师不可信，因为他声音嘶哑，走路有跛脚。你是不是假设声音嘶哑和跛脚是不可信的指标？如果是的话，请告诉我们为什么这些事情会表明不可信。**

**7:55 Argument: You demand equality on the ground (as asserted in the Declaration of Independence) that all people are created equal. But people are not equal. People are different. Some people are taller than others. They have different eye colors. Males and females are obviously different from each other in appearance from birth onward. So not all people are created equal.  
7:55 争论：你要求平等的理由是（正如《独立宣言》所断言的）所有人生而平等。但人们并不平等。人们是不同的。有些人比其他人高。他们有不同的眼睛颜色。男性和女性在出生后的外貌上显然是不同的。所以，并非所有人生而平等。**

Response: You are zχyyww⅛^that I define equality as equality in traits. But that’s not what I mean. I am talking about equality in basic rights. We have equal rights to life, liberty, and the pursuit of happiness, among other things.   
回复：你是zχyyww⅛^，我定义平等为特征上的平等。但这不是我的意思。我谈论的是基本权利的平等。我们拥有生命、自由和追求幸福等平等的权利，以及其他一些权利。

More Medium Answer  
更多中等答案

7:56 In your own writing, identify an unstated assumption that you have made, justify your claim that your passage did actually assume this proposition, and tell whether your assumption is justified. Supply a copy of the passage.  
你自己的写作中，找出一个未明示的假设，证明你的段落确实假设了这个命题，并说明你的假设是否合理。提供段落的副本。

7:57 Find a passage in which someone attributes an assumption to another person’s argument and then challenges the argument on the ground that the assumption is false or, at best, dubious. Do you think that the assumption attributor is committing the straw-person fallacy? Why?  
7:57 找到一个段落，其中某人将一个假设归因于另一个人的论点，并以该假设是错误的或者最多是可疑的为理由对该论点提出质疑。你认为这个假设归因者犯了草人谬误吗？为什么？

+ 7:58 In our deliberations about voluntary manslaughter, we decided that she was not justified in using the force she used because she could have run away to her parents’ room. (Reminder: The conditions pro­vided to the jury for voluntary manslaughter are in Example 7:1.)

1. Assuming that the question at issue is whether she is guilty, what kind of assumption would you attribute to us: a needed assumption or a used assumption? Defend your answer.  
   在我们对自愿杀人案进行讨论时，我们决定她使用的武力是不合理的，因为她本可以逃到她父母的房间。(提醒：自愿杀人案的条件在示例7:1中提供给陪审团。)假设争议的问题是她是否有罪，你认为我们所做的假设是哪种：一个必要的假设还是一个使用的假设？请为你的答案辩护。­tion or a used assumption? Defend your answer.
2. Attribute to us an assumption of the type you just decided on (needed or used) and explain why you attribute that assumption to us.  
   将刚刚确定的类型的假设归因于我们，并解释为什么将该假设归因于我们。

+ 7:59 Suppose that you are investigating the thought processes of juries in order to see whether there is bias against women in their thinking.  
假设你正在调查陪审团的思维过程，以确定他们是否对女性存在偏见。

1. What kind of assumption would you attribute to the members of my jury: a needed assumption or a used assumption? Defend your answer.  
   你会给我的陪审团成员归因于什么样的假设：一种必要的假设还是一种使用的假设？请为你的答案进行辩护。
2. Attribute to us an assumption of the type you just decided on (needed or used) and explain why you attribute that assumption to us.  
   将刚刚确定的类型的假设归因于我们，并解释为什么将该假设归因于我们。

+ 7:60 From a book, article, hearing, or conversation, present a passage containing an argument or an explanation that is intended to account for certain facts.  
从一本书、文章、听证会或对话中，呈现一个包含论证或解释的段落，旨在解释某些事实。­taining an argument or an explanation that is intended to account for certain facts.

1. Decide on your approach to it. Do you want to attribute a used or needed assumption? Why?  
   决定你对此的处理方式。你想要归因于已使用或需要的假设吗？为什么？
2. ­sion to attribute that assumption to the passage.State an assumption of the sort you just chose. Defend your decision to attribute that assumption to the passage.  
   陈述一个你刚选择的假设。为将该假设归因于该段落的决定进行辩护。

Suggested Answers for Chapter 7  
第七章的建议答案

**Check-Up 7A**

7:1 T 7:2 F 7:3 F 7:4 T 7:5 F 7:6 T

7:2 Change valid to invalid.  
将有效更改为无效。

7:3 Omit and that is needed in order.   
7:3 忽略和所需的。

7:5 Change apply exactly that judgment to the total argument to put the qualifiers in and make an informed judgment about the result.  
7:5 改变应用准确的判断来对整个论点进行评估，并对结果做出明智的判断。 *qualifiers in and make an informed judgment about the result.*

*7'J7 This is up to you.  
这取决于你。*

**7:8 a. Here is one possibility: Each of the three conditions is necessary for guilt; they are jointly sufficient.  
7:8 a. 这里有一个可能性：每个条件都是有罪的必要条件；它们共同构成充分条件。**

1. Here is one possibility. In order to find her guilty, we have to decide that each ot the three conditions is true, namely that each thing mentioned has been proven beyond a reasonable doubt. Each is needed. If any one has not been proven beyond a reasonable doubt, then we must find her innocent. If all three have been proven beyond a reasonable doubt, that is enough for a verdict of guilty. That is, if all three have been proven beyond a reasonable doubt, we must find her guilty.  
   这里有一种可能性。为了判她有罪，我们必须决定每个条件都是真实的，即每个提到的事情都已经被合理怀疑以外的证据证明。每个条件都是必要的。如果有任何一个条件没有被合理怀疑以外的证据证明，那么我们必须判她无罪。如果所有三个条件都被合理怀疑以外的证据证明，那就足够判她有罪了。也就是说，如果所有三个条件都被合理怀疑以外的证据证明，我们必须判她有罪。­
2. Let p = “PBRD that the defendant performed the acts that caused the death of the victim.”  
   令 p = PBRD，即被告犯下了导致受害者死亡的行为。

Let *q =* “PBRD that when the defendant did so, she intended to kill or do great bodily harm to the victim, or she knew that her act would cause death or great bodily harm to the victim, or she knew that her acts created a strong probability of death or great bodily harm to the victim.”

Let *r* = “PBRD that the defendant was not justified in using the force she used.”

Let r = “You should find the defendant not guilty.”

1. Parti:  
   让 q = PBRD，即当被告这样做时，她有意杀害或对受害人造成严重伤害，或者她知道她的行为会导致受害人死亡或严重伤害，或者她知道她的行为极有可能导致受害人死亡或严重伤害。让 r = PBRD，即被告在使用她所使用的武力时没有合理理由。让 r = 你应该判被告无罪。Parti:

(not *p→ s)* and (not *q~\* s')* and (not *r→s)* Therefore, (not *q → s')*

Justification:  
正当理由

This is the second if-then.7 Separating off one conjunct  
这是第二个if-then。7 将一个从句分离出来

Part 2:

not *q y s* not *q* Therefore, *s*

Conclusion of Part 1 Assumed reason AA, DV  
第一部分的结论 假设的原因AA，DV

7:9 Deliberately omitted.

7. + Note- There is a more elegant way to do d, using an interpretation of or not discussed in this book, the disjunctive sense. In this sense, an either—or proposition means that at least one ot its members (or disjuncts) holds. See any deductive logic text for an elaboration. A full discussion of the issues involved would take up too much space in this book. See the items by Lewis, Strawson, and Grice cited at the beginning of Chapter 5 for an introduction to the issues, and my Natural Language Logic, forthcoming, for a more complete elaboration of meanings, though not an exploration of the issues.   
注意：有一种更优雅的方法来执行d，使用了本书中未讨论的或的解释，即分离的意义。在这个意义上，一个或命题意味着至少有一个成员（或分离）成立。有关详细说明，请参阅任何演绎逻辑文本。对于涉及的问题的全面讨论将占用太多空间。有关问题的介绍，请参阅第5章开头引用的Lewis、Strawson和Grice的文章，以及即将出版的我的《自然语言逻辑》以获得更完整的意义阐述，尽管不探讨问题本身。

7:10 This is up to you.  
这取决于你。

7:11 F 7:12 T 7:13 F 7:14 T 7:15 F

7:11 Assumptions are sometimes conclusions.  
7:11 假设有时是结论。

7:13 There are usually many propositions that can convert an argument with a deductive gap into a deductively valid one.  
通常有很多命题可以将具有演绎缺口的论证转化为演绎有效的论证。

7:15 Change A to read Regulation EZTHINK makes sense.  
7:15 更改 A 为 Regulation EZTHINK 有意义。

7:16 Karl lost the election.  
7:16 卡尔输掉了选举。

7:17 Karl is not a fool.  
7:17 卡尔不是一个傻瓜。

7:18 Mirabelle is not dejected.  
7:18 米拉贝尔没有沮丧。

7:19 Sarah’s motorscooter is a motorcycle.

7:20 Whenever Mary is in good spirits, she has gone out with Pedro the night before.  
每当玛丽心情好时，她前一晚已经和佩德罗出去了。

7:21 Whenever Pedro goes out with Mary, he is in good spirits the next day.  
每当Pedro和Mary一起出去，他第二天心情都很好。

7:22 Arlene did not admit it.  
7:22 阿琳没有承认。

7:23 Shakespeare made Polonius the father of two tragic characters.  
7:23 莎士比亚让波洛尼厄斯成为两个悲剧角色的父亲。

7:24 Whatever we do not want in the cabbage patch is a weed.  
无论我们在甘蓝地里不想要什么，都是杂草。

7:25 All soccer players are in good physical shape.  
7:25 所有足球运动员身体状况良好。

7:26 Whatever interferes with the desires of honest people is unjust.  
7:26 任何干扰诚实人欲望的事物都是不公正的。

*Note: Henceforth in this set, answers to the odd-numbered items are omitted.  
注意：在本套题中，奇数项的答案将被省略。*

7:28 Whatever is repetitive, uninteresting, and a threat to the peace should be banned.  
7:28 无论是重复的、无趣的还是对和平构成威胁的，都应该被禁止。

7:30 Enrico is not tall.  
7:30 Enrico is not tall.

7:32 Anyone who has been treated unfairly for her entire life will certainly lash out at the world.  
7:32 任何一位一生受到不公平对待的人都会对世界产生反击。

7:34 Our students are under eighteen.  
7:34 我们的学生都未满十八岁。

7:36 (a) She killed him. (b) If she performed the act that caused his death, then the first condition for murder is satisfied.  
7:36 (a) 她杀了他。 (b) 如果她执行了导致他死亡的行为，那么谋杀的第一个条件就满足了。

7:38 I refuse to publish anything that does not make any sense.  
7:38 我拒绝发布任何毫无意义的东西。

7:40 The Board of Education will not act unconstitutionally.  
教育局不会违宪。

7:42 If Samantha is not in town, then she is in the country.  
7:42 如果Samantha不在城里，那么她在乡村。

7:44 Whoever is in trouble with the director will be kicked out of the band.  
7:44 谁与导演有麻烦，将被踢出乐队。

7:46 This is up to you.  
这由你决定。

Check-Up 7C

7:47 F 7:48 T 7:49 T 7:50 T

7:47 Change is to might be.  
7:47 变为可能是。

7:51 Yes, the assumption attribution seems justified. There seems to be no other more plausible gap filler than that the given definition of selfish is being assumed.  
7:51 是的，假设的归因似乎是合理的。似乎没有其他更合理的填补空白的方法，除了假设给定的自私定义。

7:52 This assumption attribution goes too far. The objector to punishment might only be assuming that the consent of human beings is ordinarily needed before they are deliberately injured. Whether this position is reasonable or not is another issue, but the assumption attributor assigned to die position a much too ambitious proposition.   
这种假设归因过于夸张。对于惩罚的反对者可能只是假设在故意伤害他们之前通常需要人类的同意。这个立场是否合理是另一个问题，但是将这个假设归因给这个立场是一个过于雄心勃勃的主张。

*Note: Henceforth in this set, odd-numbered answers are omitted.  
注意：在本组中，奇数编号的答案被省略。*

**7:54 This is a reasonable job of assumption attribution. It fills a gap in the argument in a quite plausible waγ. However, there is more to the issue: The definition of credibility is possibly in contention. The assumption attributor probably interpreted credibility as the degree to which a source ought to be believed; the other probably defined it as the degree to which a source is likely to be believed. In the context of the jury trial, the first definition expresses the concept of concern. We were trying to decide whether we should believe him, not whether people are likely to believe him.  
7:54 这是一个合理的假设归因工作。它以一种相当合理的方式填补了论证中的一个空白。然而，问题还有更多：可信度的定义可能存在争议。假设归因者可能将可信度解释为一个来源应该被相信的程度；而另一个可能将其定义为一个来源被相信的程度。在陪审团审判的背景下，第一个定义表达了关注的概念。我们试图决定我们是否应该相信他，而不是人们是否可能相信他。**

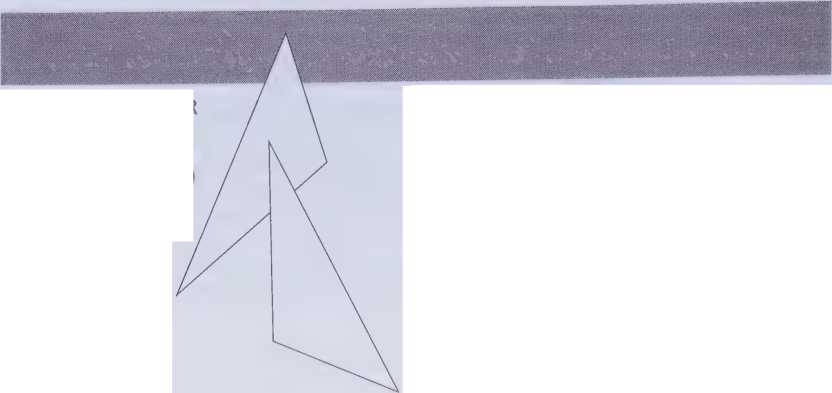
**7:56 and 7:57 These are up to you.  
7:56和7:57这些由您决定。**

**7:58 a. A needed assumption, because the concern is about the truth of the conclusion “She is guilty.”  
7:58 a. 一个必要的假设，因为关注的是结论她有罪的真实性。**

**b. I would attribute these assumptions: 1. If she could have run away to her parents’ room, then she had a safe alternative to responding with violence. 2 If she had a safe alternative to responding with violence, then she was not justified in using the force she used.  
我会归因于以下假设：1. 如果她能够逃到她父母的房间，那么她有一个安全的选择来回应暴力。2. 如果她有一个安全的选择来回应暴力，那么她使用的武力是不合理的。**

­native gap-fillers. Proposition 2 is more defensible than a broad claim to the effect that anyone who has a safe alternative to responding with violence should pursue it. However, I might, as an alternative to Proposition 2, attribute this somewhat broader (than Proposition 2) set of propositions: “If someone can easily escape a threatened attack These propositions do fill the gap, and seem more plausible than alternative gap-fillers. Proposition 2 is more defensible than a broad claim to the effect that anyone who has a safe alternative to responding with violence should pursue it. However, I might, as an alternative to Proposition 2, attribute this somewhat broader (than Proposition 2) set of propositions: “If someone can easily escape a threatened attack and there is no other reason to do violence to the attacker, then one should escape rather than respond with violence. There was no other reason to do violence to the attacker. If she should have escaped rather than responded with violence, then she was not justified in using the force she used.” I might use this broader set because a defense of the narrow Proposition 2 would probably drive us back to this set, and the set seems fairly plausible. However, it is still open to a challenge of a crucial part, “There is no other reason to do violence to the attacker.” 7:59 Deliberately omitted.  
这些命题填补了空白，并且似乎比其他填补空白的命题更有道理。命题2比宣称任何有安全替代方法来回应暴力的人都应该追求这一观点更具有辩护性。然而，作为命题2的替代方案，我可能会归因于这个略微更广泛（比命题2更广泛）的命题集合：如果某人可以轻易逃脱被威胁的攻击，并且没有其他理由对攻击者使用暴力，那么应该选择逃脱而不是回应暴力。没有其他理由对攻击者使用暴力。如果她应该选择逃脱而不是回应暴力，那么她使用的武力就没有正当理由。我可能会使用这个更广泛的命题集合，因为对狭窄的命题2的辩护可能会将我们带回到这个命题集合，并且这个命题集合似乎相当有道理。然而，它仍然可以对一个关键部分提出质疑，即没有其他理由对攻击者使用暴力。7:59故意省略。

7:60 This is up to you.  
这取决于你。

Experimentation, Diagnosis, and Troubleshooting  
实验、诊断和故障排除

CHAPTER

8

­alizing, even though the result of an experiment is sometimes very specific.We all do experiments, sometimes good ones, sometimes bad ones, and sometimes in between. The results of an experiment are often offered as reasons in support of a conclusion. This chapter is concerned with experimenting and deciding whether experimental results provide enough support for a conclusion. It is also concerned with diagnosis of a problem situation, sometimes called troubleshooting, sometimes diagnosing, both of which have similarities to experimenting but are focused on what is wrong in some situation. Experimenting, on the other hand, is focused on generalizing, even though the result of an experiment is sometimes very specific.  
我们都会进行实验，有时是好的实验，有时是坏的实验，有时则介于两者之间。实验的结果通常被作为支持结论的理由。本章关注的是进行实验并决定实验结果是否足够支持一个结论。它还关注问题情境的诊断，有时称为故障排除，有时称为诊断，两者都与实验有相似之处，但侧重于在某种情境中出现的问题。另一方面，实验则侧重于概括，尽管实验的结果有时非常具体。

More precisely, experimenting is the deliberate changing of something in a situation in order to see what happens. We do this in order to get ideas for a conclusion or to test a proposed conclusion, called a hypothesis. The testing and judging of a hypothesis can be done by ways other than experimenting. But for now, our focus will be on experimenting.  
更准确地说，实验是有意改变情境中的某事物以观察发生的变化。我们这样做是为了得到对结论的想法或测试所提出的假设，称为假设。对假设的测试和评判可以通过其他方式进行，而不仅限于实验。但现在，我们的重点将放在实验上。­uation in order to see what happens. We do this in order to get ideas for a conclu­sion or to test a proposed conclusion, called a

In terms of the FRISCO approach, we shall be examining whether reasons (R) support (7) the conclusion (F), when inferring {Γ) from experimental results and information (R) that is methodically gathered. We will also be concerned with writing, particularly of reports of the type of investigations discussed here.  
根据FRISCO方法，我们将检查在从实验结果和系统收集的信息（R）推断Γ时，原因（R）是否支持（7）结论（F）。我们还将关注写作，特别是这里讨论的调查类型的报告。­ing, particularly of reports of the type of investigations discussed here.

Control Group Experimentation  
控制组实验

A friend has a patch of grass. For many years, a number of dandelions have been growing in this patch. Last year the friend decided to try a chemical on the patch in the hope that it would kill the dandelions, but not the grass. At the time of writing, the end of April, there arc no dandelions in the patch, although there were many at this time last year. “She tried it and it worked!”

She had varied one thing, and only one thing. But with the passage of time, other things occurred as well. Γherc was a fierce winter, for one thing; there has been talk of acid rain; and there is a variety of bug around that was not noticed before. Can my friend conclude that the chemical killed the dandelions? She has insufficient evidence to rule out other possible explanations of the disappearance of the dandelions. The report “I tried it and it worked” must often be regarded with suspicion.  
一个朋友有一块草地。多年来，这块地上一直长着一些蒲公英。去年，朋友决定在这块地上试用一种化学药剂，希望能杀死蒲公英，但不伤害草地。在写作时，也就是四月底，这块地上没有蒲公英了，尽管去年这个时候有很多。她试了一下，效果很好！她只改变了一件事，只有一件事。但随着时间的推移，其他事情也发生了。首先，有一个严寒的冬天；还有关于酸雨的讨论；还有一种以前没有注意到的虫子。我的朋友能否得出结论说这种化学药剂杀死了蒲公英？她没有足够的证据来排除蒲公英消失的其他可能解释。"我试了一下，效果很好"这样的报告通常应该受到怀疑。­

Because the mistake I have just described is so common, it has a special name, the post hoc fallacy. To commit this fallacy is to conclude that one thing caused another just because the second occurred after the first. I mention this name to you, not in the hope that you will use it, but so that when others use it, you will not be confused or intimidated. Such Latin words are often confusing and intimidating to others. Of course, you should feel free to use it if the people you are talking to know what it means. Then its use is a quick way to state an important idea.  
因为我刚才描述的错误非常普遍，它有一个特殊的名字，叫后 hoc 错误。犯这种错误就是因为第二件事发生在第一件事之后，就得出结论说第一件事导致了第二件事。我向你提到这个名字，不是希望你使用它，而是希望当别人使用它时，你不会感到困惑或受到威胁。这样的拉丁词汇常常让人感到困惑和受到威胁。当然，如果你和你交谈的人知道它的意思，你可以自由使用它。那么它的使用就是表达一个重要观点的快捷方式。

Here is one way to have improved the experiment and avoided the post hoc fallacy: Observe another area of grass and dandelions, similar to the first, that did not receive the chemical treatment. Then compare the two areas. If there were no dandelions in the second area, then we might well suspect that something other than the chemical had eliminated the dandelions in the first area. On the other hand, if there were dandelions in the second, but not the first, then we have fair support for the conclusion that the chemical somehow eliminated the dandelions. This support is strengthened by the other conditions’ having been the same.  
这是改进实验并避免事后推理谬误的一种方法：观察另一个与第一个相似的草地和蒲公英区域，该区域没有接受化学处理。然后比较这两个区域。如果第二个区域没有蒲公英，那么我们很可能怀疑除了化学物质之外，还有其他因素消除了第一个区域的蒲公英。另一方面，如果第二个区域有蒲公英，而第一个区域没有，那么我们有充分的支持来得出化学物质某种方式消除了蒲公英的结论。这种支持得到了其他条件相同的加强。­lacy: Observe another area of grass and dandelions, similar to the first, that did not receive the chemical treatment. Then compare the two areas. If there were no dan­delions in the second area, then we might well suspect that something other than the chemical had eliminated the dandelions in the first area. On the other hand, if there were dandelions in the second, but not the first, then we have fair support for the conclusion that the chemical somehow eliminated the dandelions. This support is strengthened by the other conditions’ having been the same.

One simple kind of experiment (which I have just illustrated) is one in which the experimenter sets up two similar groups, introduces a special condition called the experimental condition in one group, but tries to keep the two groups otherwise the same. The group that undergoes the experimental condition is called the experimental group. The other group, called the control group, experiences standard conditions. The purpose is to see the difference, if any, in the results of the experimental and standard conditions. If there is only this one difference in conditions, a difference in the results is explained by the experimental condition, so the thinking goes. If other factors were also allowed to vary, then their variations might also explain the results. The point of a control-group experiment is to rule out possible competing hypotheses. You can see this in greater detail in two examples I shall describe. One is a classic control-group experiment about the origin of maggots and the other is an experiment that is like one I have conducted.  
一个简单的实验（我刚刚举例说明了）是这样的：实验者设置两个相似的组，引入一个称为实验条件的特殊条件到其中一个组，但尽量保持两个组其他方面相同。经历实验条件的组被称为实验组。另一个组，称为对照组，经历标准条件。目的是观察实验和标准条件的结果是否有差异。如果只有这一个条件的差异，结果的差异就可以解释为实验条件所致，这是一种思维方式。如果其他因素也被允许变化，那么它们的变化也可能解释结果。对照组实验的目的是排除可能的竞争假设。你可以在我将描述的两个例子中更详细地看到这一点。一个是关于蛆的起源的经典对照组实验，另一个是类似我进行过的实验。*­tal* ­dard ­tors were also allowed to vary, then their variations might also explain the results. The point ­ment

Redi's Experiment with Meat  
雷迪的肉实验

In the seventeenth century, it was widely believed that the “worms” one finds in decaying organic matter were spontaneously generated there. Spontaneous generation is the development of some form of life by itself without being patented. Francesco Redi (1626-1697), after making a variety of observations, developed the hypothesis that the “worms” developed from eggs that were laid by flies. In reading his report and in deciding whether to accept this evidence, be aware of the importance of Redi’s credibility and of his having satisfied observation criteria:  
在17世纪，普遍认为在腐烂的有机物中发现的虫子是自发生成的。自发生成是指生命以自身形式发展而无需专利。弗朗切斯科·雷迪（1626-1697）在进行了各种观察后，提出了虫子是由苍蝇产下的卵孵化而来的假设。在阅读他的报告并决定是否接受这一证据时，请注意雷迪的可信度以及他是否满足了观察标准的重要性。­­

­dle of Iuly, I put a snake, some fish, some eels of the Arno, and a slice of milk- fed veal in four large, wide-mouthed flasks; having closed and sealed them, I then filled the same number of flasks in the same way, only leaving these open.Belief would be vain without the confirmation of experiment, hence in the middle of Iuly, I put a snake, some fish, some eels of the Arno, and a slice of milk- fed veal in four large, wide-mouthed flasks; having closed and sealed them, I then filled the same number of flasks in the same way, only leaving these open.  
信念在没有实验证实的情况下是徒劳的，因此在七月中旬，我将一条蛇、一些鱼、一些阿尔诺河的鳗鱼和一片奶酪喂养的小牛肉放入四个大口瓶中；我将它们封闭并密封，然后以同样的方式填满了同样数量的瓶子，只是将这些瓶子保持开放状态。

It was not long before the meat and the fish, in these second vessels, became wormy and flies were seen entering and leaving at will; but in the closed flasks, I did not see a worm, though many days had passed since the dead flesh had been put in them.  
这些第二个容器里的肉和鱼不久就变虫了，蝇虫进进出出自由自在；但在密封的瓶子里，我没有看到虫子，尽管已经过了很多天，尸肉已经放进去了。

The unsealed flasks were Redi’s control group. He introduced a special factor, the sealing of the flasks, to create an experimental group. But if he had not provided the set of unsealed flasks (the control group), then he would not have known to what to attribute his results. For example, the temperature or the flask material might have prevented the development of the maggots, and might have been offered as alternative explanations of the failure of the maggots to develop. The position of the moon might have prevented the development, for all he knew, or something else might have done so. But the second group of flasks, the open ones, had the same temperature conditions, the same flask material, the same relationship to the moon, and so on. He assumed that if the temperature, the flask material, the position of the moon, or some other factor had prevented the growth of the maggots in the first set, then it should have done the same thing in the second set. But it did not. Using denial-of-the- consequent reasoning (do you see how?), he was in a position to reject the hypotheses that the temperature and the material of the experimental group flasks caused the lack of growth of maggots. Similarly, he was in a position to reject the hypothesis that the position of the moon caused the lack of growth of maggots. The presence of the control group enabled him to reject many possible explanations of the lack of growth of maggots in the sealed flasks. The use of a control group, thus, is a powerful way to eliminate alternative hypotheses.  
无密封瓶是Redis控制组。他引入了一个特殊因素，即瓶子的密封，以创建一个实验组。但如果他没有提供无密封瓶的组（对照组），那么他就不会知道如何解释他的结果。例如，温度或瓶子的材料可能会阻止蛆的发育，并可能被提供为蛆未能发育的替代解释。对于他所知道的，月亮的位置可能会阻止发育，或者其他事物可能会这样做。但第二组瓶子，即开放的瓶子，具有相同的温度条件，相同的瓶子材料，相同的与月亮的关系等等。他假设，如果温度、瓶子材料、月亮的位置或其他因素阻止了第一组蛆的生长，那么它应该也会阻止第二组的生长。但事实并非如此。通过否定-推论推理（你看出来了吗？），他有能力拒绝温度和实验组瓶子材料导致蛆缺乏生长的假设。同样，他有能力拒绝月亮位置导致蛆缺乏生长的假设。对照组的存在使他能够排除许多关于密封瓶中蛆缺乏生长的可能解释。因此，使用对照组是消除替代假设的一种强有力的方法。­tive explanations of the failure of the maggots to develop. The position of the moon might have prevented the development, for all he knew, or something else might have done so. But the second group of flasks, the open ones, had the same temperature conditions, the same flask material, the same relationship to the moon, and so on. He assumed that if the temperature, the flask material, the position of the moon, or some other factor had prevented the growth of the maggots in the first set, then it should have done the same thing in the second set. But it did not. Using denial-of-the- consequent reasoning (do you see how?), he was in a position to reject the hypothe­

­ible. The experimental hypothesis is that the sealing of the flasks prevented maggots from developing in the meat. This hypothesis was made credible by the elimination The results for the control group made the experimental hypothesis more credible. The experimental hypothesis is that the sealing of the flasks prevented maggots from developing in the meat. This hypothesis was made credible by the elimination of alternative hypotheses. It was the control group results that justified the elimination of these alternatives.  
对照组的结果使实验假设更加可信。实验假设是，瓶子的封闭防止了蛆在肉中孵化。通过排除其他假设，这个假设变得可信。正是对照组的结果证明了这些其他假设的排除。­tion of these alternatives.

­ine. For example, another possible explanation is that the material used in covering Note that there are other possible explanations that a creative person can imagine. For example, another possible explanation is that the material used in covering the flasks was poisonous to maggots. Another is that the material frightened the little maggots, so that they did not develop. There are always other possible explanations resulting from the introduction of the experimental factor. One strategy in experimentation is to design the experiment so that the plausible ones can be eliminated on the basis of the results, or to design other experiments to test these other possible explanations. For example, Redi might have designed an experiment to test the compatibility of the covering with the maggots, perhaps bv leaving a hole in the covering for one group of flasks to see whether the covering is poisonous or frightens little maggots. But there would still be other possibilities, perhaps even less plausible than the ones I suggested. Can you think of any?  
请注意，还有其他可能的解释，可以由有创造力的人想象出来。例如，另一个可能的解释是覆盖瓶子的材料对蛆虫有毒。另一个可能的解释是，这种材料吓到了小蛆虫，使它们没有发育。引入实验因素总会有其他可能的解释。实验中的一个策略是设计实验，以便根据结果排除可能的解释，或者设计其他实验来测试这些其他可能的解释。例如，雷迪可能设计了一个实验来测试覆盖物与蛆虫的兼容性，也许通过在覆盖物上留一个孔，观察一组瓶子是否有毒或者是否吓到小蛆虫。但仍然存在其他可能性，甚至可能比我提出的还不太可能。你能想到其他的可能性吗？­tle maggots, so that they did not develop. There are always other possible explana­tions resulting from the introduction of the experimental factor. One strategy in experimentation is to design the experiment so that the plausible ones can be elimi­nated on the basis of the results, or to design other experiments to test these other possible explanations. For example, Redi might have designed an experiment to test the compatibility of the covering with the maggots, perhaps bv leaving a hole in the covering for one group of flasks to see whether the covering is poisonous or fright­­sible than the ones I suggested. Can you think of any?

A Critical Thinking Experiment  
批判性思维实验

­dents. I have designed an experiment to test this hypothesis. It goes as follows. I pick an experimental group and a comparable control group and give the students in eachMy other example bears on a general hypothesis of mine. It is that taking a course in critical thinking, using this book, tends to improve the critical thinking ability of students. I have designed an experiment to test this hypothesis. It goes as follows. I pick an experimental group and a comparable control group and give the students in each group a critical thinking pretest such as the Cornell Critical Thinking Test, Level Z.[footnoteRef:14] Then I teach this course to the experimental group and make sure that the control group is not exposed to this course or any like it. Let us suppose that the other experiences of the two groups (for example, their other courses) are essentially the same. Then, at the end of the course, I give the test over again. Suppose that the experimental group’s average improvement turns out to be significantly more than the average improvement of the control group. I might well conclude that the critical thinking course brought about the greater experimental-group improvement in critical thinking ability revealed by the testing. Note that this is a specific conclusion about this one experiment. It is loosely implied by the general hypothesis mentioned at the beginning of this paragraph, but is different.  
我的另一个例子与我提出的一个普遍假设有关。这个假设是，通过学习这本书，参加批判性思维课程可以提高学生的批判性思维能力。我设计了一个实验来测试这个假设。实验步骤如下：我选择一个实验组和一个可比较的对照组，并给每个组的学生进行一次批判性思维预测试，例如康奈尔批判性思维测试，Z级[14]。然后我教授这门课程给实验组的学生，并确保对照组没有接触过这门课程或类似的课程。假设两组的其他经历（例如其他课程）基本相同。然后，在课程结束时，我再次进行测试。假设实验组的平均改进明显大于对照组的平均改进。我可能会得出结论，批判性思维课程通过测试揭示的实验组批判性思维能力的改进更大。请注意，这是关于这个实验的具体结论。它与本段开头提到的普遍假设有些关联，但是是不同的。[[13]](#footnote-13)­riences of the two groups (for example, their other courses) are essentially the same. Then, at the end of the course, I give the test over again. Suppose that the experi­mental group’s average improvement turns out to be significantly more than the average improvement of the control group. I might well conclude that the critical thinking course brought about the greater experimental-group improvement in crit­ical thinking ability revealed by the testing. Note that this is a specific conclusion about this one experiment. It is loosely implied by the general hypothesis mentioned at the beginning of this paragraph, but is different.

My reasoning in drawing the specific conclusion would be as follows: The greater experimental-group improvement is best explained by the fact that the course was given to the experimental group and not to the control group. What other explanation could there be, since all other things were essentially the same for the two groups?  
我得出具体结论的推理如下：实验组的改善程度更大，最好的解释是因为课程只给了实验组而没有给对照组。既然其他方面对于两组来说基本相同，还能有其他解释吗？

­tion. One might be that there were thought-provoking posters in the room where the instruction occurred and that these were responsible. Another might be that my dour personality was the cause. Another might be that because the experimental group was picked out for special treatment, its members were motivated to become better critical thinkers or to try harder on the posttest. A fourth could arise from the grading situation: If the members of the experimental group get a score on the test that counts in the course grade, but the members of the control group get no grade for critical thinking ability, then the difference in grade motivation might account for the difference. Yet it would not seem fair to give the control group members a grade on something they had not studied; and it would probably be a mistake in a grade- oriented system, as ours often is, to fail to use the critical thinking test final score in calculating a grade for the experimental group students. Each of these four problems might be avoided by a careful design and implementation of the experiment, but I cannot take steps to defeat all possible alternative hypotheses. The best I can do in one experiment is to try to design it so that the plausible alternative hypotheses that occur to me could be shown to be false, and to watch the progress of the experiment very closely to see whether other plausible alternative explanations appear.Actually there would be other possible explanations, some arising from the conditions that could have accompanied the introduction of the experimental condition. One might be that there were thought-provoking posters in the room where the instruction occurred and that these were responsible. Another might be that my dour personality was the cause. Another might be that because the experimental group was picked out for special treatment, its members were motivated to become better critical thinkers or to try harder on the posttest. A fourth could arise from the grading situation: If the members of the experimental group get a score on the test that counts in the course grade, but the members of the control group get no grade for critical thinking ability, then the difference in grade motivation might account for the difference. Yet it would not seem fair to give the control group members a grade on something they had not studied; and it would probably be a mistake in a grade- oriented system, as ours often is, to fail to use the critical thinking test final score in calculating a grade for the experimental group students. Each of these four problems might be avoided by a careful design and implementation of the experiment, but I cannot take steps to defeat all possible alternative hypotheses. The best I can do in one experiment is to try to design it so that the plausible alternative hypotheses that occur to me could be shown to be false, and to watch the progress of the experiment very closely to see whether other plausible alternative explanations appear.  
实际上可能会有其他可能的解释，其中一些可能是由于实验条件引起的。一个可能是在教学发生的房间里有发人深省的海报，这可能是原因。另一个可能是我的沉闷个性是原因。另一个可能是因为实验组被挑选出来接受特殊待遇，其成员被激励成为更好的批判性思考者或在后测中更加努力。第四个可能是由于评分情况：如果实验组成员在考试中获得了计入课程成绩的分数，而对照组成员在批判性思维能力上没有得分，那么成绩动机的差异可能解释这种差异。然而，给对照组成员在他们没有学习的东西上打分似乎是不公平的；而且在一个以成绩为导向的系统中，像我们这样的系统，不利用批判性思维测试的最终分数来计算实验组学生的成绩可能是一个错误。这四个问题中的每一个都可以通过仔细设计和实施实验来避免，但我不能采取措施来排除所有可能的替代假设。在一个实验中，我所能做的就是尽力设计它，使我能够证明我所想到的合理的替代假设是错误的，并密切观察实验的进展，看是否出现其他合理的替代解释。

­dents. The original conclusion was not a generalization. It was only about the one particular situation. The generalization would be supported because it would be a broader explanation of the results of the experiment. However, the generalization would not be established by the one experiment because (among other reasons) the representativeness of the student population has not been established. It might be that such a course is effective in this decade for a certain kind of student from a cer­tain part of the world, but not otherwise effective. From this one experiment, IThe imagined results also support the general hypothesis that taking a course in critical thinking, using this book, tends to improve the critical thinking ability of students. The original conclusion was not a generalization. It was only about the one particular situation. The generalization would be supported because it would be a broader explanation of the results of the experiment. However, the generalization would not be established by the one experiment because (among other reasons) the representativeness of the student population has not been established. It might be that such a course is effective in this decade for a certain kind of student from a certain part of the world, but not otherwise effective. From this one experiment, I should not generalize unless the situation and people involved are representative of the population covered by the generalization. I shall say more about generalizing later, but at least want to point out that the generalization might well receive some support from the results I imagined. The amount of support can vary with the specific situation and details.  
想象的结果也支持一般假设，即通过学习这本书中的批判性思维课程，学生的批判性思维能力往往会得到提高。原始结论并非一般化，只是关于一个特定情况的陈述。一般化将得到支持，因为它将是对实验结果的更广泛解释。然而，这个实验并不能证实一般化，因为（除其他原因外）学生群体的代表性尚未确定。也许这门课程对于这个时代的某种类型的学生在某个地区是有效的，但对其他情况可能无效。从这个实验中，我不应该一概而论，除非所涉及的情况和人员代表了一般化所涵盖的人群。我将在后面对一般化问题进行更多讨论，但至少要指出，我想象的结果可能会在一定程度上支持这个一般化。支持的程度可以根据具体情况和细节而有所不同。­cific situation and details.

Summary and Comment  
摘要和评论

­vor of the thinking.In the maggot example and the critical thinking example, I have indicated the value of a control group when checking a hypothesis about a causal relationship. 1 here are many complicated variations of control-group experimentation, but all are governed by the goal of avoiding possible alternative explanations of the result. As with all experiment-based conclusions, the details in these two cases are very important and more complex than I have been able to represent. I have only tried to convey the flavor of the thinking.  
在蛆的例子和批判性思维的例子中，我已经指出了在检验因果关系假设时控制组的价值。有许多复杂的控制组实验变体，但它们都受到避免可能的替代解释结果的目标的控制。与所有基于实验的结论一样，这两种情况的细节非常重要，比我能够表示的更复杂。我只是试图传达思维的味道。

Because it is difficult to obtain representative samples of students, 1 emphasized the distinction between a specific hypothesis that applies only to the experiment in question and a general hypothesis. I did not emphasize this distinction in the Redi experiment because I wanted to minimize the complexity of the first experiment I considered, and because I was willing to assume that Redi,s samples of organic matter were fairly representative of maggot havens.  
因为很难获得代表性的学生样本，我强调了一个特定假设与仅适用于该实验的假设之间的区别。在Redi实验中，我没有强调这个区别，因为我想要减少我考虑的第一个实验的复杂性，并且我愿意假设Redi的有机物样本相当代表蛆的栖息地。­ter were fairly representative of maggot havens.

Check-Up 8A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

8:1 In an experiment the control group is the group that is controlled.  
8:1 在一个实验中，对照组是被控制的组。

­tions of the result.8:2 The purpose of a control group is to eliminate other possible explanations of the result.  
8:2 控制组的目的是排除其他可能的结果解释。

8:3 Although it is possible to reduce the list of other possible explanations, it is never possible with a control group to eliminate all other possible explanations.  
8:3 尽管有可能缩小其他可能解释的范围，但通过对照组，永远无法排除所有其他可能的解释。

­tion if the members of the experimental and control groups are not representative of the broader population.8:4 One should not generalize experimental results to a broader population if the members of the experimental and control groups are not representative of the broader population.  
8:4 如果实验组和对照组的成员不代表更广泛的人群，就不应该将实验结果推广到更广泛的人群。

Medium Answer  
中等答案

8:5 A student was interested in what brings about germination of seeds. He was considering the hypothesis that it is contact with soil that causes germination. He took four pole-bean seeds randomly from a recently purchased package and placed them in an empty open jar. At the same time, he took .mother four randomly selected bean seeds from the same package and placed them in some freshly dug soil in a similar open jar. He put both jars in the window sill on the first day of spring. He observed them every day and took out the results for close observation seven days later. All four seeds in the jar containing soil had germinated. None of the seeds in the empty jar had germinated. From this, he concluded that the soil was the cause of the germination of the seeds.  
8:5 一个学生对种子的发芽原因很感兴趣。他正在考虑一个假设，即接触土壤会导致种子发芽。他随机从最近购买的包装中取出四颗豆角种子，放入一个空的敞开的罐子中。同时，他从同一包装中随机选取另外四颗豆角种子，放入一些新挖的土壤中的类似敞开的罐子中。他把两个罐子都放在春天的窗台上。他每天观察它们，并在七天后取出结果进行仔细观察。土壤罐中的四颗种子都已经发芽。空罐中的种子没有发芽。因此，他得出结论，土壤是种子发芽的原因。

1. Assuming that the experimental condition was contact with soil, what was die control group?  
   假设实验条件是接触土壤，那么对照组是什么？
2. Was this a good experiment? Why?  
   这是一个好的实验吗？为什么？

**8:6 Another student set about testing the hypothesis that it is moisture that causes germination of seeds. For her experimental group, she placed four randomly selected seeds (from the same package as in 8:5) in an open small-mouth jar containing wet soil. For her control group, she used four randomly selected seeds from the same package and placed them in a similar jar containing dry soil The two samples of soil were from the same source. The original soil was put in a large jar, was thoroughly mixed, and then was divided in half. One half (with enough tap water added to make it feel wet, but not muddy) was used for the experimental seeds. The other half was heated to make it thoroughly dry and crumbly, allowed to cool to room temperature, and then used for the control seeds. The rest of the method was the same as in 8:5. At the end of the seventh day, she noticed that the four seeds from the wet-soil group had sprouts ranging in length from one to two inches, and that the seeds from the dry-soil group had not sprouted at all. She concluded that the moisture caused die experimental seeds to germinate.  
8:6 另一位学生开始测试一个假设，即湿度是导致种子发芽的原因。对于她的实验组，她将从与8:5相同的包装中随机选择的四颗种子放入一个装有湿土的小口罐中。对于她的对照组，她使用了从同一包装中随机选择的四颗种子，并将它们放入一个类似的罐子中，里面装有干燥的土壤。这两个土壤样本来自同一来源。原始土壤被放入一个大罐子中，彻底混合，然后分成两半。其中一半（加入足够的自来水使其感觉湿润但不泥泞）用于实验种子。另一半土壤被加热至彻底干燥和易碎，然后冷却至室温，并用于对照组种子。其余的步骤与8:5中的相同。第七天结束时，她注意到湿土组的四颗种子发芽的长度在一到两英寸之间，而干土组的种子则没有发芽。她得出结论，湿度导致了实验种子的发芽。**­­

**a. State an alternative hypothesis not ruled out in this experiment, b. Was this a good experiment? Why?  
在这个实验中，提出一个未被排除的替代假设。这是一个好的实验吗？为什么？**

1. Design and describe an experiment to test the hypothesis you suggested in λ.  
   设计并描述一个实验来测试您在λ中提出的假设。­

**8:7 A new method of examining teeth, called Ultralight, was suspected of causing cancer. A group of twenty white rats was randomly split in half into experimental and control groups. Each member of the experimental group was given one Ultralight treatment of three hundredths of the strength of that used for a standard human tooth examination. The members of the experimental and control groups were assigned each to separate alternate cages and given the same food, water, and living conditions for a period of three months. Then each rat was examined. All of the treated rats had cancer. None of the control group had cancer. Assume for the present purposes that rats and humans are identical in cancer receptivity. It was concluded that Ultralight treatments cause cancer in the rats.  
8:7 一种名为Ultralight的检查牙齿的新方法被怀疑会导致癌症。一个由二十只白色大鼠组成的小组被随机分成实验组和对照组。实验组的每个成员都接受了一次Ultralight治疗，强度为标准人类牙齿检查的三百分之一。实验组和对照组的成员分别被分配到不同的笼子中，并在三个月的时间里给予相同的食物、水和生活条件。然后对每只大鼠进行了检查。所有接受治疗的大鼠都患有癌症，而对照组中没有一只大鼠患有癌症。在目前的目的下假设大鼠和人类在癌症易感性上是相同的。因此得出结论，Ultralight治疗会导致大鼠患癌症。**­tal

1. Can you think of an advantage of randomly assigning rats to experimental and control group (as opposed to assigning the first ten you catch to the experimental group and the other ten to the control group)? State the advantage.  
   随机将大鼠分配到实验组和对照组（而不是将你捕捉到的前十只分配到实验组，另外十只分配到对照组）有什么优势？请说明该优势。
2. State an alternative possible explanation that is not ruled out by the control group results.  
   陈述一个可能的替代解释，该解释不被对照组结果排除。
3. State the advantage of using twenty rats instead of two (one as experimental, one as control).  
   使用二十只老鼠而不是两只（一只作为实验组，一只作为对照组）的优势。
4. State an advantage, in terms of this experiment, of using a control group (as opposed to having all twenty rats as an experimental group).  
   使用对照组（而不是将所有20只大鼠作为实验组）的优点在于，从这个实验的角度来看，可以得出一个优势。
5. Is this a good experiment? Why?  
   这是一个好的实验吗？为什么？

**8:8 A social studies teacher at Renfrew High was also the volleyball coach, and was very concerned about lack of community interest in the volleyball team. Applying an idea from sociology, she wondered whether familiarity with the story of the team and its accomplishments would increase interest. So she tried an experiment.  
8:8 一位在Renfrew High担任社会学教师的人也是排球教练，对于社区对排球队缺乏兴趣非常担心。她借鉴了社会学的一个想法，想知道对于球队的故事和成就的熟悉程度是否会增加兴趣。于是她进行了一个实验。**­leyball team. Applying an idea from sociology, she wondered whether familiarity with the story of the team and its accomplishments would increase interest. So she tried an experiment.

In one of her civics classes, she passed out a well-written story about how the team was started and how tryouts were conducted. After each game, she wrote an account of the game, passed it out in class, and asked her students to take it home to their parents.  
在她的公民课中，她分发了一篇写得很好的关于团队是如何开始和如何进行选拔的故事。每场比赛后，她写了一份比赛记录，发给班上的学生，并要求他们带回家给父母看。

­ball team, and no written material about the team was distributed.In her other civics class, there was no mention made of the volleyball team, and no written material about the team was distributed.  
在她的其他公民课上，没有提到排球队，也没有发放关于该队的书面材料。

The last game of the season was at night. On the next day, she asked the students in each class how many of their parents went to the game. In the class that received information about the team, twenty out of twenty-five raised their hands. In the other class, four out of twenty-eight raised their hands. She concluded that familiarity with the team had resulted in increased parental interest in the volleyball team.  
赛季的最后一场比赛是在晚上。第二天，她询问每个班级的学生有多少人的父母去看比赛。在了解了球队情况的班级中，25个人中有20个举手。而在另一个班级中，28个人中有4个举手。她得出结论，对球队的熟悉导致了家长对排球队的兴趣增加。

1. Can you think of any other possible explanation of the result? If so, state one.  
   你能想到其他可能的结果解释吗？如果可以，请提出一个。
2. Was this a good experiment? Why?  
   这是一个好的实验吗？为什么？
3. Could the experiment have been improved? If so, state two ways of improving it.  
   实验是否可以改进？如果可以，提出两种改进方法。

Longer Answer  
更长的答案

**8:9 It is widely believed in some areas that planting root crops by the dark of the moon makes it much more likely that the crop will be a good crop. The dark-of-the-moon period of the month is that of the new moon (the opposite of a full moon).  
在某些地区，广泛认为在月黑时种植根茎作物会大大增加作物的丰收。月黑期是指新月（与满月相反）的时期。**

A resident of East Central Illinois devised an experiment to test this hypothesis. He planted a row of seed potatoes on the tenth of April (which was the dark of the moon that year) and an equal amount in an adjoining row two weeks later in the full moon period. For each planting, he used white seed potatoes bought from the local seed store, planted in accord with the recommendations of the store manager. All the seed potatoes were bought at the same time and came from the same bag. They were bought just before the first planting, were randomly assigned to the two groups; the ones not immediately planted were stored in a cool, dark root cellar until time for planting.  
伊利诺伊州中东部的居民设计了一个实验来测试这个假设。他在四月十日（那年是月黑期）种植了一排种薯，两周后在满月期间又在相邻的一排种了同样数量的种薯。对于每一次种植，他使用了从当地种子店购买的白色种薯，并按照店经理的建议种植。所有的种薯都是同时购买的，来自同一个袋子。它们在第一次种植之前购买，并随机分配到两组；没有立即种植的种薯被存放在一个凉爽、黑暗的地窖中，直到种植的时间。­ager. All the seed potatoes were bought at the same time and came from the same bag. They were bought just before the first planting, were randomly assigned to the two groups; the ones not immediately planted were stored in a cool, dark root cellar until time for planting.

Each row was ten feet long. They were two feet apart and were two feet from adjoining plants, which were also potatoes. No fertilizer was used in this rich Illinois soil, which had been planted in grass for the previous ten years.  
每一行都有十英尺长。它们相距两英尺，离相邻的植物也有两英尺的距离，这些植物也是土豆。在这块富饶的伊利诺伊州土壤中没有使用肥料，这块土地之前种植了十年的草。

All potatoes were dug on September 30, by which time all the vines had stopped growing and had died (a normal occurrence). The potatoes from each row were weighed. The total weight from the dark-of- the-moon row was 17.5 pounds; from the full moon row, 16.8 pounds.  
所有土豆在9月30日挖出，此时所有的藤蔓都停止生长并死亡（这是正常现象）。每一行的土豆都被称重。新月行的总重量为17.5磅；满月行的总重量为16.8磅。­toes from each row were weighed. The total weight from the dark-of- the-moon row was 17.5 pounds; from the full moon row, 16.8 pounds.

1. Can you think of any plausible explanations of the result other than the widely held belief? If so, state one.  
   你能想到除了广泛认可的观点之外的任何合理解释吗？如果可以，请提出一个。
2. Was this a good experiment? Why?  
   这是一个好的实验吗？为什么？
3. What, if anything, would you conclude from this experiment? Why?  
   如果有的话，你会从这个实验中得出什么结论？为什么？
4. How would you redesign this experiment? Explain why you make the changes you make.  
   如何重新设计这个实验？解释一下你为什么要做出这些改变。

**8:10 Design an experiment that uses a control group to test a hypothesis that interests you. Describe your experiment and tell why you plan it the way you do.  
设计一个实验，使用对照组来测试你感兴趣的假设。描述你的实验，并解释为什么你计划以这种方式进行。**

Systematic Control of the Variables in an Experiment—Without Using a Separate Control Group  
在实验中系统地控制变量，而不使用单独的对照组

­ing the other group as is, and watch them both at the same time. It seems that we need only a representative group of pendulums. A basis for comparison can be the pendulums before we make the change. We might even do our work with only one pendulum and then see whether we get the same results with other pendulums and in other situations. But we would vary only one thing at a time to locate the factor or factors that influence the period.In some experiments, it does not seem reasonable to set up a separate control group, but we still want to be able to limit the possible alternative explanations of the results. Suppose, for example, that we are trying to find out what influences the period of a pendulum, as found in a playground swing, or a grandfather clock. (The period is the time it takes for one swing back and forth). A separate control group does not seem necessary here. That is, it seems unnecessary to set up two groups of pendulums that are comparable to each other and to make a change in some factor in one group, leaving the other group as is, and watch them both at the same time. It seems that we need only a representative group of pendulums. A basis for comparison can be the pendulums before we make the change. We might even do our work with only one pendulum and then see whether we get the same results with other pendulums and in other situations. But we would vary only one thing at a time to locate the factor or factors that influence the period.  
在一些实验中，设立一个单独的对照组似乎是不合理的，但我们仍然希望能够限制对结果的可能替代解释。例如，假设我们正在试图找出影响钟摆周期的因素，比如游乐场秋千或者座钟。（周期是钟摆来回摆动所需的时间）。在这里，似乎不需要设立一个单独的对照组。也就是说，似乎没有必要设置两组相互可比较的钟摆，并在其中一组中改变某个因素，保持另一组不变，并同时观察它们。似乎我们只需要一个代表性的钟摆组。作为比较的基础可以是在我们进行改变之前的钟摆。我们甚至可以只用一个钟摆进行工作，然后观察是否能够在其他钟摆和其他情况下得到相同的结果。但我们每次只会改变一件事来确定影响周期的因素或因素。

One fruitful beginning seems to be to make some intelligent guesses about what might influence the period, and experiment by varying them one at a time. First, we might change the amount of weight and see whether that affects the period, hold ing everything else constant. Then we might change the length (from the pivot point to the weight) and see whether that affects the period, again holding everything else (including the weight) constant. If we vary two factors at the same time, then we would not know which was responsible for the result, if any. T hat is, we would have two alternative possible explanations of a change in the period. For example, if we doubled the weight and doubled the length of the pendulum, and discovered that the period increased, we would have three alternative possible explanations of the result: the change in weight, the change in length, and perhaps a combination of the two. Furthermore, if each really did have an effect, and if the effects were in opposite directions, then we might get no observed change because each change we introduced canceled the other. Then we might be tempted to conclude mistakenly that neither type of change has an effect.  
一个富有成果的开始似乎是对可能影响这一时期的因素进行一些明智的猜测，并通过逐一变化它们来进行实验。首先，我们可以改变重量的数量，看看是否会影响时期，同时保持其他一切不变。然后，我们可以改变长度（从支点到重物的距离），看看是否会影响时期，同样保持其他一切（包括重量）不变。如果我们同时改变两个因素，那么我们将不知道哪个因素导致了结果（如果有的话）。也就是说，我们将对时期变化有两种可能的解释。例如，如果我们将重量加倍，将摆长加倍，并发现时期增加了，那么我们将对结果有三种可能的解释：重量的变化，长度的变化，以及两者的组合。此外，如果每个因素确实产生了影响，并且影响方向相反，那么我们可能观察不到任何变化，因为我们引入的每个变化都会抵消另一个变化。然后我们可能错误地得出结论，即两种类型的变化都没有影响。­­duced canceled the other. Then we might be tempted to conclude mistakenly that neither type of change has an effect.

­cantly different, we could probably conclude that length is a factor. This hypothesis would seem to be the only explanation of the change in period that we find. Thus, varying only one thing at a time can be a useful way to test hypotheses experimentally.But if we vary just the weight, and there is no change in the period, then we can probably rule out weight as a factor that has independent influence. The hypothesis that weight influences the period would be inconsistent with the facts. Then, if we vary the length but hold everything else constant, and find that the period is significantly different, we could probably conclude that length is a factor. This hypothesis would seem to be the only explanation of the change in period that we find. Thus, varying only one thing at a time can be a useful way to test hypotheses experimentally.  
但是如果我们只改变重量，而周期没有变化，那么我们可以推断重量不是一个独立影响因素。重量影响周期的假设与事实不一致。然后，如果我们改变长度但保持其他条件不变，并发现周期明显不同，我们可以得出长度是一个因素的结论。这个假设似乎是我们发现周期变化的唯一解释。因此，一次只改变一个因素可以是测试假设的一种有用方法。

Dependent and Independent Variables  
依赖变量和独立变量

We use the word variable to refer to the things that change or might change in an experiment. In the investigation of factors that affect the period of a pendulum, the length of the pendulum is a variable. So is the weight. The period of the pendulum is also a variable. The period is called a dependent variable because, according to the hypothesis, its variation, if any, would depend on the variation of the others, which are called independent variables. They are called independent because variation in them is presumed not to be dependent on the variation of the other variables. For example, variation in the length is presumed for the sake of the investigation not to be dependent on the period. Independent variables, then, are those that are manipulated to see whether they affect a dependent variable. In the pendulum experiment, as I described it, the length and the weight are independent variables; the period is a dependent variable.  
我们使用变量一词来指代在实验中会改变或可能改变的事物。在研究影响钟摆周期的因素时，钟摆的长度是一个变量。重量也是如此。钟摆的周期也是一个变量。周期被称为因变量，因为根据假设，它的变化（如果有的话）将取决于其他变量的变化，这些变量被称为自变量。它们被称为自变量，是因为它们的变化被假定不依赖于其他变量的变化。例如，为了研究的目的，长度的变化被假定不依赖于周期。因此，自变量是那些被操纵以观察它们是否影响因变量的变量。在我描述的钟摆实验中，长度和重量是自变量；周期是因变量。­iment. In the investigation of factors that affect the period of a pendulum, the length of the pendulum is a variable. So is the weight. The period of the pendulum is also a vari­able. The period is called a *­pendent variables.*

Beware: There are technical uses of these terms that supposedly do not imply the causal relationships that I have just assumed. They occur in fields where some people are reluctant to assume or conclude that there are causal relationships. In these fields, the independent variable is that which is somehow prior. I find such uses misleading where I have encountered them, and do not recommend them to you.  
注意：这些术语有一些技术用途，据说并不意味着我刚才假设的因果关系。它们出现在一些领域，一些人不愿意假设或得出因果关系的结论。在这些领域中，独立变量是某种程度上较早的变量。我发现这样的用法会误导，不建议您使用。

Difficulty in Controlling the  
控制困难

Possible Independent Variables  
可能的自变量

In the pendulum experiment, it is fairly easy to vary the length while holding the weight constant, and to vary the w,cight w hile holding the length constant. But the independent variable, time, is not held constant. (The observations before and after the variation occur at different times.) Neither arc all the things that vary with the time, such as weather conditions, phases of the moon, position of the sun, interest rates, the price of gasoline, the mood of the experimenter, and the number of bicycles in the bicycle rack. For the pendulum experiment, I would be willing to assume that these things do not matter. But for other experiments in which one tries to vary one thing at a time, things that change with time can matter. For example, in the dandelion experiment I described at the beginning of this chapter, the other things that occurred during the passage of time from one year to the next could have explained the absence of dandelions in my friend’s patch of grass.  
在摆锤实验中，很容易在保持重量恒定的同时改变长度，并且在保持长度恒定的同时改变重量。但是独立变量时间并不保持恒定。（变化前后的观察发生在不同的时间点。）并非所有随时间变化的事物都是如此，比如天气条件、月相、太阳位置、利率、汽油价格、实验者的心情以及自行车架上的自行车数量。对于摆锤实验，我愿意假设这些事物并不重要。但对于其他试图一次只改变一件事物的实验来说，随时间变化的事物可能是重要的。例如，在本章开头我描述的蒲公英实验中，从一年到下一年的时间段内发生的其他事情可能解释了我朋友草坪上没有蒲公英的原因。­cles in the bicycle rack. For the pendulum experiment, ­delion

­egy of varying one Consider next an example dιat falls somewhere in between the pendulum experiment and the original dandelion experiment, given our concern with the strategy of varying one thing at a time.  
考虑下一个介于钟摆实验和原始蒲公英实验之间的例子，考虑到我们关注一次只改变一件事的策略。

My associates and I did a critical thinking teaching experiment with only one group. We gave a critical thinking pretest to a class and waited for one semester. Then we gave the class the same test again, and then instructed the class in critical thinking for one semester, after which we gave the test a third time. We tried to vary only one thing: critical thinking instruction. The independent variable was critical thinking instruction. The dependent variable was critical thinking ability, as indicated by the test. We compared their improvement in the first semester with that in the second semester. Although we tried to vary only the independent variable (the instruction), other variables in the students’ lives besides critical thinking instruction must have changed during the experiment. The students were out in the world and had many varied experiences. They became older and wiser, and might have passed through a phase of rapid natural growth in wisdom during the critical thinking semester. They took other courses during that semester, in some of which they were learning things that might well have improved their thinking ability. National and international events occurred during the critical thinking semester. These might have provoked them to think more critically and practice their skills, and thus might have explained the results.  
我和我的合作伙伴进行了一次关于批判性思维的教学实验，只有一个小组参与。我们给一个班级进行了一次批判性思维的预测测试，并等待了一个学期。然后我们再次给这个班级进行了同样的测试，然后在一个学期里教授了批判性思维，之后我们再次进行了测试。我们试图只改变一个因素：批判性思维的教学。独立变量是批判性思维的教学。依赖变量是测试所示的批判性思维能力。我们将他们在第一个学期的进步与第二个学期进行了比较。尽管我们试图只改变独立变量（教学），但学生们在实验期间除了批判性思维教学之外的其他生活变量可能已经发生了变化。学生们在世界上有很多不同的经历。他们变得更加年长和聪明，并且在批判性思维学期可能经历了一个快速自然成长的阶段。他们在那个学期还学习了其他课程，其中一些课程可能会提高他们的思维能力。在批判性思维学期期间发生了国内外事件。这些事件可能激发他们更加批判地思考和实践他们的技能，从而解释了结果。

These are all exterior possibilities that were not introduced by us in the experiment. There were some that we introduced as well. For example, by giving the test two times and by telling them they would receive critical thinking instruction, we might then have provoked the students to improve their thinking on their own. Or the tests might have so familiarized them with critical-thinking questions that they developed skills on their own, without the course. These all provide other possible explanations of the results.  
这些都是在实验中我们没有介绍的外部可能性。我们也介绍了一些。例如，通过两次测试并告诉他们他们将接受批判性思维指导，我们可能激发学生自己改善思维能力。或者这些测试可能使他们对批判性思维问题变得非常熟悉，从而在没有课程的情况下自己发展了技能。这些都提供了其他可能的结果解释。­ment.

The test score difference from the second to third administration was significantly greater than the difference from the first to the second. Could we conclude from only what I have told you that the critical thinking course improved the students’ critical thinking ability? I think not. Not only are there some possible alternative explanations introduced by what we did, but a number of things could have occurred as time passed that could explain the results, as I have indicated.  
第二次到第三次考试成绩的差异明显大于第一次到第二次的差异。仅凭我告诉你的这些，我们能得出结论说批判性思维课程提高了学生的批判性思维能力吗？我认为不行。不仅我们所做的事情引入了一些可能的替代解释，而且随着时间的推移，许多事情可能发生，这些事情可以解释结果，正如我所指出的。­cantly

Importance of Knowledge in the Area of Investigation  
调查领域中的知识的重要性

­pendent variables one at a time (for a single group or thing) can be a good one, but From these three examples, we can see that the idea of isolating and varying the independent variables one at a time (for a single group or thing) can be a good one, but there are limitations. One must be familiar with the area of investigation to decide this. We had to know about weights, lengths, and pendulums to decide on a good strategy for pendulums. Our knowledge of plants and things that influence them enabled us to realize that, even though the use of the chemical was followed by the nonappearance of dandelions at the regular time, this fact does not establish the effectiveness of the chemical. Instead, it provided a slim amount of support: The hypothesis that the chemical is effective could explain the results in my patch, but so could many alternative hypotheses.  
从这三个例子中，我们可以看出一个一个地隔离和改变独立变量的想法（对于一个单一的群体或事物）是一个不错的想法，但也有限制。一个人必须熟悉调查领域才能决定这一点。我们必须了解重量、长度和摆锤才能决定一个好的摆锤策略。我们对植物和影响它们的事物的了解使我们意识到，尽管化学物质的使用导致了蒲公英在正常时间不出现，但这个事实并不能证明化学物质的有效性。相反，它提供了一些微弱的支持：化学物质有效的假设可以解释我花坛的结果，但也有许多其他的假设可以解释这些结果。­tiveness of the chemical. Instead, it provided a slim amount of support: The hypoth­

­ing track of what else the students were doing, and talking with them to see what was influencing their thinking. We watched them catch onto things and heard them talk about what it was in the teaching and the materials that helped them learn.It is important to have general knowledge about the sort of situation being investigated, but knowledge of the particular experimental situation was also very important to the critical thinking case. We watched the situation very closely, keeping track of what else the students were doing, and talking with them to see what was influencing their thinking. We watched them catch onto things and heard them talk about what it was in the teaching and the materials that helped them learn.  
对于正在调查的情况，了解一般知识非常重要，但对于批判性思维案例来说，了解特定的实验情况也非常重要。我们密切关注情况的发展，记录学生们在做什么，并与他们交谈以了解影响他们思考的因素。我们观察到他们逐渐理解事物，并听到他们谈论教学和教材对他们学习的帮助。

We tentatively concluded that the critical thinking instruction did help improve their critical thinking ability. We felt that the instruction was part of the explanation of their improvement. But we would not have been justified in drawing this conclusion if we had not followed the students closely. We found no plausible alternative explanations of their improvement, even though we looked for them.  
我们暂时得出结论，批判性思维教学确实有助于提高他们的批判性思维能力。我们觉得这种教学是他们进步的解释的一部分。但如果我们没有密切跟踪学生，我们就不能得出这个结论。尽管我们寻找了其他合理的解释，但我们没有找到他们进步的可信替代解释。­sion if we had not followed the students closely. We found no plausible alternative explanations of their improvement, even though we looked for them.

When there are other plausible explanations of the results, the best we can say about a vary-one-thing-at-a-time experiment with a single group of subjects is that the hypothesis could explain the data and is consistent with it. We must undertake further investigation and experimentation to try to rule out the other plausible and even-slightly-plausible explanations, if we want to say something stronger.  
当结果存在其他合理解释时，我们对一个单一受试者组的逐一变量实验所能说的最好的是，假设可以解释数据并与之一致。如果我们想要表达更强的观点，我们必须进行进一步的调查和实验，以排除其他合理甚至稍微合理的解释。

Greater Complexity: Multiple Variables  
更大的复杂性：多个变量

In one well-known chemical puzzle, five colorless liquids, when mixed together, become yellow. Suppose the problem is to find out what minimal combination pro­duces the color. What would you do? Think about this before reading further. (Incidentally, this problem—and the next one—show that there is not a sharp line between experimentation and diagnosis and troubleshooting. Their solutions seem to involve both experimentation and diagnosis.)

My strategy would be first to label the liquids A, B, C, D, and E. Then I would vary one thing at a time, looking for a liquid that can be omitted from the mixture. Given the way things are in this puzzle, two of the liquids would turn out not to be part of the explanation of the yellow color. That is, for two of them, say A and E, I would find that the color appears even when these two are omitted from the mixture, even though the hypothesis for each of them is that it is necessarv for the color. For the other three, B, C, and E), I would find that their omission would be accompanied by colorlessness. Then, to check myself, I would make a mixture of the three, B, C, and D, and would find the yellow color. My final conclusion is that each of the three, B, C, and D, is a necessary condition for the color, and that jointlv the three are suf­ficient for the color. This double hypothesis explains the data and is consistent with it. The competing hypotheses that give each of the other two liquids a role would be inconsistent with the data. Both of these competitor hypotheses would be inconsis­tent with my finding the yellow' color from the three. Furthermore, each competing

hypothesis is inconsistent with our finding the yellow color from the other four.  
在一个众所周知的化学难题中，五种无色液体混合在一起后会变成黄色。假设问题是找出产生这种颜色的最小组合。你会怎么做？在继续阅读之前先思考一下。（顺便说一句，这个问题和下一个问题都表明实验和诊断以及故障排除之间没有明确的界限。它们的解决方案似乎涉及实验和诊断的两者。）我的策略是首先给液体标记为A、B、C、D和E。然后我会逐一变化一件事情，寻找可以从混合物中省略的液体。根据这个难题的情况，其中两种液体将被证明不是黄色的解释部分。也就是说，对于其中两种液体，比如A和E，我会发现即使将它们从混合物中省略，颜色仍然出现，尽管每种液体的假设都是它对于颜色是必要的。对于另外三种液体，B、C和E，我会发现它们的省略会导致无色。然后，为了自我检验，我会将三种液体B、C和D混合在一起，然后发现黄色。我的最终结论是，这三种液体B、C和D中的每一种都是颜色的必要条件，并且三者共同是颜色的充分条件。这个双重假设解释了数据并与之一致。给其他两种液体赋予角色的竞争假设将与数据不一致。这两个竞争假设都与我从这三种液体中发现黄色不一致。此外，每个竞争假设都与我们从其他四种液体中发现黄色不一致。

­less liquids, Things can get more complicated than this. Suppose that you have five colorless liquids, A, B, C, D, and E, but that A and B are in fact the same kind of liquid. Suppose that the combination of C, D, and either A or B is necessary and sufficient to get the color, and that E makes no difference. But all you know at the beginning is that all five together make the color, and you are asked to find out which ones matter. You might find it interesting to try to design an investigation that will enable you to discover the factors that matter, doing at most, nine tests. Remember that your hypothesis must explain the data and that alternative hypotheses must be ruled out by the data.  
事情可能会比这更复杂。假设你有五种无色液体，A、B、C、D和E，但实际上A和B是同一种液体。假设C、D和A或B的组合是获得颜色所必需且足够的，而E没有任何影响。但你一开始只知道这五种液体一起可以产生颜色，并且被要求找出哪些液体是重要的。你可以尝试设计一个调查，最多进行九次测试，以便发现重要的因素。请记住，你的假设必须解释数据，并且通过数据排除其他假设。­ter. You might find it interesting to try to design an investigation that will enable you to discover the factors that matter, doing at most, nine tests. Remember that your hypothesis must explain the data and that alternative hypotheses must be ruled out

Check-Up 8B

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**8:11 The independent variable is the one the investigator observes to see the effect, if any, of varying the dependent variable(s).  
8:11 独立变量是研究者观察以查看对依赖变量（们）进行变化的效果（如果有的话）的变量。**

**8:12 If we have identified all the relevant variables, then varying them one at a time, holding the others constant, is a strategy that is certain to identify a variable that explains the changes in the dependent variable.  
如果我们已经确定了所有相关的变量，那么逐个变化它们，同时保持其他变量不变，是一种确定能够解释因变量变化的变量的策略。**

**8:13 A major goal in isolation and methodical variation of the independent variables is the elimination of alternative possible explanatory hypotheses.  
8:13 在隔离和系统变化自变量的过程中，一个主要目标是消除可能的替代性解释假设。**

**8:14 One disadvantage of control-group experimentation is that it generally does not try to rule out time-related explanatory factors.  
8:14 对照组实验的一个缺点是通常不试图排除与时间相关的解释因素。**

**8:15 Knowledge about the facts and generalizations surrounding an experiment is not very important if you carefully vary each of the identified variables one at a time.  
8:15 关于实验周围的事实和概括的知识并不重要，如果你仔细地逐个变化已确定的变量。**­ment is not very important if you carefully vary each of the identified

Medium Answer  
中等答案

8:16 Criticize the following argument using the FRISCO approach:  
8:16 使用FRISCO方法批评以下论点：

I had been getting about 30 miles to the gallon in my car ever since I bought it six months ago. I have checked this at least five times. Then I added one ounce of Triple-X Fuel Miser. I found at my next fill-up that I got 38 miles to the gallon. Triple-X Fuel Miser obviously saves fuel. I tried it and it worked.  
我自从六个月前购买了这辆车以来，每加仑汽油行驶大约30英里。我至少已经检查过五次。然后我加了一盎司的Triple-X节油剂。我发现下次加油时每加仑汽油可以行驶38英里。Triple-X节油剂显然可以节省燃料。我尝试了它，它有效果。

**8:17 Do the same for the following argument adapted from an advertisement:  
8:17 对于下面从广告中改编的论点，做同样的处理：**

I have been twenty pounds overweight for as long as I can remember. Then, on the recommendation of a friend, I started taking Frank’s Minimizer Tablets, one each day. Since then, I lost about two pounds a week for the next ten weeks. When I got down to the right weight, I kept taking the tablets. My weight stayed there and has been there ever since. These tablets, as you can see, are quite effective in weight control. You should try them.  
我一直记得自己超重了二十磅。然后，在朋友的推荐下，我开始每天服用弗兰克的减肥片，每天一片。从那时起，接下来的十个星期里，我每周减掉大约两磅。当我达到合适的体重后，我继续服用这些片剂。我的体重保持在那里，至今没有变化。正如你所见，这些片剂在控制体重方面非常有效。你应该试试它们。

8:18 Do the same for a control-group experiment you find described in a newspaper, magazine, or report. Include a copy. Remember under R to evaluate the reasons from the point of view of their acceptability, as well as (under Γ) the degree of support that they would provide, if true.  
8:18 对于在报纸、杂志或报告中描述的对照组实验，做同样的事情。包括一份副本。记住在 R 下评估原因的可接受性，以及（在 Γ 下）如果真实，它们将提供的支持程度。

8:19 Do the same for an experiment that you find described in a newspaper, magazine, or report, and that involves variation without a control group. Include a copy.  
8:19 对于一篇报纸、杂志或报告中描述的涉及没有对照组的变异的实验，也要进行相同的操作。附上一份复印件。

Longer Answer  
更长的答案

­ity, given a certain kind of usage? Do not use a control group, but do plan to vary one or more variables.8:20 Plan an experiment that is addressed to a concern of yours. Here are some concerns of mine, which might suggest some concerns that you have: How can you make a good omelette, using a stove to which you have access? Another: What bicycle helmet materials best resist impact? Still another: Which of two or more engine oils best retains its viscosity, given a certain kind of usage? Do not use a control group, but do plan to vary one or more variables.  
8:20 计划一个针对你关心的问题的实验。以下是我关心的一些问题，可能会引发你的一些关注：如何在你可以使用的炉子上制作一份好的煎蛋卷？另一个问题是：哪种自行车头盔材料最能抵抗冲击？还有一个问题是：在某种特定的使用情况下，两种或更多种发动机油中哪种保持黏度最好？不要使用对照组，但请计划变化一个或多个变量。

1. State your concern.  
   陈述你的关切。
2. State a hypothesis.  
   陈述一个假设。
3. Describe your experimental plan for testing the hypothesis. Be sure to identify your independent and dependent variables.  
   描述你的实验计划以测试假设。确保识别出你的自变量和因变量。
4. ­ment and describe your results).Imagine and describe a set of possible results (or do the experiment and describe your results).  
   想象并描述一组可能的结果（或进行实验并描述您的结果）。
5. State an alternative hypothesis that is ruled out by these results, and explain why it is ruled out.  
   这些结果排除了一个被这些结果证伪的备择假设，请解释为什么它被排除。
6. ­esis, and tell why.Tell whether the results are reason enough to accept your hypothesis, and tell why.  
   判断结果是否足够理由接受你的假设，并解释原因。

­sary and sufficient for any mixture of them to be colored. E makes no difference. Describe an investigation in which you could discover these facts without knowing them in advance. Your investigation should employ at most nine tests, given that you already know that all five together make a yellow liquid.8:21 Puzzle: There are five colorless liquids, A, B, C, D, and E. A and B are the same kind. The combination of C, D, and either A or B is necessary and sufficient for any mixture of them to be colored. E makes no difference. Describe an investigation in which you could discover these facts without knowing them in advance. Your investigation should employ at most nine tests, given that you already know that all five together make a yellow liquid.  
8:21难题：有五种无色液体，A、B、C、D和E。A和B是同一种。C、D和A或B的任意组合对于任何混合物着色是必要且充分的。E没有影响。描述一项调查，你可以在不事先知道这些事实的情况下发现它们。你的调查应该最多使用九个测试，已知这五种液体一起制成黄色液体。

Comparability  
可比性

­nation of the results: the dissimilarity.In a well-conducted experiment, the things compared and the treatments they receive must be sufficiently similar. Without similarity, there would be another possible explanation of the results: the dissimilarity.  
在一项进行良好的实验中，进行比较的事物和它们接受的处理必须足够相似。如果没有相似性，结果就会有另一个可能的解释：不相似性。

In my experimental control-group critical-thinking experiment, for example, if the two groups are different at the beginning, then that difference might account for the experimental results. If the groups are treated differently (in addition to the critical-thinking-instruction difference), then that difference might account for the differences in results.  
例如，在我的实验对照组批判性思维实验中，如果两组在开始时就不同，那么这种差异可能解释实验结果。如果两组在处理上有所不同（除了批判性思维教学的差异），那么这种差异可能解释结果的差异。

Random Assignment to  
随机分配给

Experimental and Control Groups  
实验组和对照组

­trol groups is to start with one pool of objects (seeds, people, etc.) and assign them One commonly recommended way to secure comparability of experimental and control groups is to start with one pool of objects (seeds, people, etc.) and assign them at random to the experimental and control groups. Random assignment is an assignment in which each object has an equal chance of being in either group. Random assignment does not guarantee that the groups will be the same because by chance one group could contain, for example, more tall students or more mathematics majors. But random assignment is held by many authorities to be the best way to secure similar groups.  
一种常见的推荐方法是确保实验组和对照组的可比性，即从一个对象池（种子、人等）开始，并将它们随机分配到实验组和对照组。随机分配是一种每个对象都有相等机会进入任一组的分配方式。随机分配并不能保证组别完全相同，因为偶然情况下，一个组可能包含更多高个子学生或更多数学专业学生。但是，许多权威机构认为随机分配是确保相似组别的最佳方式。­ment in which each object has an equal chance of being in either group. Random assignment does not guarantee that the groups will be the same because by chance one group could contain, for example, more tall students or more mathematics majors. But random assignment is held by many authorities to be the best way to secure similar

­ficult to achieve Although random assignment to experimental and control groups is easy to achieve for many types of objects (such as bean seeds and white rats), it is usually difficult to achieve in practical and representative situations involving human beings. For example, I have never succeeded in getting such random assignment in studies of critical thinking, nor do I know of any significant critical thinking study in which such random assignment was achieved. There have always been a number of practical problems that interfered. Random assignment is not impossible for human beings in practical situations; rather, it is difficult. Sometimes this difficulty leads people to select hypotheses that deal with artificial or nonhuman situations, for which random assignment is easier. Sometimes the difficulty leads people to test a hypothesis that they are really interested in, but in situations that are not at all representative of those we care about. Sometimes, the result is the neglect of experimental study of such important areas as critical thinking instruction.  
虽然对于许多类型的对象（如豆子种子和白色大鼠），将实验组和对照组进行随机分配很容易实现，但在涉及人类的实际和代表性情境中，通常很难实现。例如，我从未成功地在批判性思维研究中实现过这种随机分配，也不知道任何一项重要的批判性思维研究中实现了这种随机分配。总是存在一些干扰的实际问题。在实际情况下，人类并非无法进行随机分配，而是困难重重。有时，这种困难会导致人们选择处理人工或非人类情境的假设，因为这样的情境更容易进行随机分配。有时，这种困难会导致人们在与我们关心的情境完全不相符的情况下测试一个他们真正感兴趣的假设。有时，结果是对于诸如批判性思维教学等重要领域的实验研究的忽视。

Alternative Ways of Securing Comparability of Groups  
组间比较的替代方式

­trol People sometimes use other ways to achieve comparability of experimental and control groups. One is to try to match individuals, neglecting the individuals who were not matched. For example, for each individual in the experimental group, we might seek an individual outside of it who matches on IQ, sex, age, and socioeconomic status. The group of individuals who match up with the members of the experimental group would then be the control group. The unmatched members of the experimental group, if any, would then be neglected in compiling experimental results. But matching is very difficult to do, and the design is open to the charge that there might well be some other significant variable that could influence the results (for example, the one that accounts for the inability to find a matchee) and that is more heavily weighted in one of the groups. There is another common difficulty called regression to the mean, but it is beyond the scope of this book.  
有时人们会使用其他方法来实现实验组和对照组的可比性。其中一种方法是尝试匹配个体，忽略未匹配的个体。例如，对于实验组中的每个个体，我们可能会寻找一个在智商、性别、年龄和社会经济地位上与其匹配的个体。与实验组成员匹配的个体群将成为对照组。实验组中未匹配的成员（如果有的话）将被忽略在编制实验结果时。但是匹配是非常困难的，并且这种设计容易受到指责，认为可能存在其他一些重要变量可能会影响结果（例如，解释无法找到匹配者的变量），并且在其中一组中具有更大的权重。还有另一个常见的困难叫做回归到平均值，但它超出了本书的范围。­tus. The group ­mental

A commonly used way to achieve similarity is to find a total group that seems roughly the same as the experimental group in important respects (such as the same school or college, or the same level). This method has dangers because there are usually significant differences between the groups.  
实现相似性的常用方法是找到一个在重要方面（如同一所学校或大学，或同一级别）与实验组大致相同的总体群体。这种方法存在危险，因为通常群体之间存在显著差异。­ally significant differences between the groups.

There are also statistical ways of attempting to equate experimental and control groups. I will not go into them here, nor into their difficulties. Consult a statistics text if you want to know about them.  
还有一些统计方法可以尝试将实验组和对照组进行等价。我不会在这里详细介绍，也不会涉及它们的困难。如果你想了解它们，请参考统计学教材。

Experiments Without a Separate Control Croup  
没有单独对照组的实验

­rate control group. In the two-semester critical thinking instruction experiment described earlier (done without a separate control group), it was important that the group not have significantly changed from the fall semester to the spring semester. Otherwise, there would have been another possible explanation of the results. We had to monitor the situation closely, and even then we could not be certain that the group had not changed, thus inviting another plausible explanation.The comparability problems exist not only for separate control-group experiments, but also for experiments in which the variables are controlled without using a separate control group. In the two-semester critical thinking instruction experiment described earlier (done without a separate control group), it was important that the group not have significantly changed from the fall semester to the spring semester. Otherwise, there would have been another possible explanation of the results. We had to monitor the situation closely, and even then we could not be certain that the group had not changed, thus inviting another plausible explanation.  
存在可比性问题不仅仅是针对独立对照组实验，也适用于在没有使用独立对照组的实验中控制变量的情况。在之前描述的为期两个学期的批判性思维教学实验中（没有使用独立对照组），重要的是小组在秋季学期到春季学期之间没有显著变化。否则，结果可能有另一个可能的解释。我们必须密切监控情况，即使如此，我们也不能确定小组没有发生变化，从而引发另一个合理的解释。

Summary So Far  
迄今为止的摘要

­trol of factors that change with time.Control-group experimentation and systematic variation without a control group can both be very helpful in eliminating possible alternative hypotheses. The simplest control-group experiment requires comparable experimental and control groups and the addition of one special factor to the experimental group situation; furthermore, all other factors should be the same for the experimental and control groups. The simplest systematic variation without a control group is to varv one thing at a time, holding the others constant. An advantage of control-group investigation is its control of factors that change with time.  
对照组实验和没有对照组的系统变异都可以帮助消除可能的替代假设。最简单的对照组实验需要具有可比性的实验组和对照组，并在实验组情境中添加一个特殊因素；此外，实验组和对照组的其他因素应该保持一致。最简单的没有对照组的系统变异是逐一改变一件事情，保持其他因素不变。对照组调查的一个优点是它可以控制随时间变化的因素。

Neither procedure completely eliminates the possibility' of alternative hvpothe- ses. They are simply effective ways of reducing the number. An investigator must be aware of the facts and general characteristics of the situation in order to be a good judge of the extent to which possible alternative hypotheses have been eliminated.  
没有一个过程完全消除了可能的替代假设的可能性。它们只是减少数量的有效方式。调查人员必须了解事实和情况的一般特征，以便能够判断可能的替代假设被消除的程度。

­uations. You must know the field of study, be aware of types of problems that can develop, and do the best you can. When using a control group to study individuals who vary significantly from one to the next, random assignment to experimental and control groups is a good procedure, though often difficult to achieve. The degree to which you need a separate control group, as well as strategics for handling compara­bility of subjects and treatments, depends on the nature of the subjects. People, bean seeds, and pendulums arc significantly different from each other. But in all cases, skill­ful planning, familiarity with the subjects and the field of study, careful work, and close monitoring of the situation arc helpful in achieving comparability of subjects, treatments, and conditions.There are no perfect ways of equating experimental and control groups and situations. You must know the field of study, be aware of types of problems that can develop, and do the best you can. When using a control group to study individuals who vary significantly from one to the next, random assignment to experimental and control groups is a good procedure, though often difficult to achieve. The degree to which you need a separate control group, as well as strategics for handling comparability of subjects and treatments, depends on the nature of the subjects. People, bean seeds, and pendulums arc significantly different from each other. But in all cases, skillful planning, familiarity with the subjects and the field of study, careful work, and close monitoring of the situation arc helpful in achieving comparability of subjects, treatments, and conditions.  
没有完美的方法来等同实验组和对照组以及情境。你必须了解研究领域，意识到可能出现的问题类型，并尽力而为。当使用对照组研究彼此差异显著的个体时，随机分配到实验组和对照组是一个好的方法，尽管通常难以实现。你需要一个单独的对照组的程度，以及处理受试者和治疗的可比性的策略，取决于受试者的性质。人、豆子种子和摆锤彼此之间有显著的差异。但在所有情况下，熟练的规划、对受试者和研究领域的熟悉、认真的工作和对情况的密切监控有助于实现受试者、治疗和条件的可比性。

You encountered a I .atin term in this chapter, post hoc. The post hoc fallacy is the mistake of concluding simply on the basis of one thing’s coming after another that the fust caused the second. I he mistake is a common one; you should recognize it when it occurs and avoid making it yourself. Furthermore it is important for you to know the meaning of the term post hoc so that you will not be puzzled or intimidated when you hear or see it.  
你在本章中遇到了一个拉丁术语，post hoc。后 hoc 谬误是仅仅基于一件事情在另一件事情之后发生而得出结论，即第一件事情导致了第二件事情的错误。这个错误很常见；当它发生时，你应该能够识别并避免自己犯这个错误。此外，你需要了解 post hoc 这个术语的意义，这样当你听到或看到它时就不会感到困惑或受到威胁。

­self whether it all makes sense.Experimental investigations must be accompanied by a good understanding of the situation and some good judgment as well. You have encountered the main ideas in experimental investigations, but there arc many refinements. The main things to remember are to be alert for alternative possible explanations and keep asking yourself whether it all makes sense.  
实验研究必须伴随着对情况的良好理解和一些良好的判断力。你已经遇到了实验研究的主要思想，但还有许多细节需要注意。记住的主要事项是要警惕可能的替代解释，并不断问自己是否一切都合乎逻辑。

Check-Up 8C

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

­out a definite plan.8:22 Random assignment of subjects is any assignment that proceeds without a definite plan.  
8:22 随机分配受试者是指在没有明确计划的情况下进行的任意分配。

8:23 Random assignment of subjects might result in two groups that are different in significant respects.  
8:23 随机分配受试者可能导致两组在重要方面有所不同。

8:24 Separate experimental and control groups are never identical in all respects.  
8:24 实验组和对照组在所有方面都不完全相同。

8:25 Separate experimental and control groups never have identical sets of experiences, even when the independent variable is neglected.  
8:25 分离实验组和对照组从未有完全相同的经历，即使独立变量被忽略。

8:26 The lack of a separate control group is never acceptable in an experiment.  
8:26 实验中缺乏独立的对照组是不可接受的。

8:27 When using a separate control group, assignment to experimental and control groups should always be done at random, even though it is sometimes difficult.  
8:27 当使用独立的对照组时，实验组和对照组的分配应始终随机进行，即使有时候很困难。

8:28 The main reason for achieving comparability in subjects and treatment is to reduce the number of possible alternative explanations of the results.  
8:28 实现科目和处理的可比性的主要原因是为了减少结果的可能的替代解释数量。

Medium Answer  
中等答案

Consider these experiments and answer the questions that follow.  
考虑这些实验并回答后面的问题。

8:29 What happens when sugar is eliminated from the diet? Alan and Rose said they wanted to find out. They secured the cooperation of their tw enty-five classmates. In the beginning of April, they explained to the class some of the suspicions they had about sugar and persuaded them to agree not to put sugar on any of their foods for a two-month period. During the period, Alan and Rose continually encouraged their classmates to stay with the plan, telling them how much better they would feel if they ate no sugar. The classmates all said that they had not and would not add sugar to their food during the two-month period. At the end of the period, Alan and Rose asked their classmates to fill out a questionnaire dealing with how they felt about life.   
8:29 当食物中的糖被排除时会发生什么？艾伦和罗斯说他们想要找出答案。他们获得了他们二十五位同学的合作。四月初，他们向班级解释了他们对糖的一些怀疑，并说服他们在两个月的时间里不在任何食物上加糖。在这段时间里，艾伦和罗斯不断鼓励他们的同学坚持计划，告诉他们如果不吃糖会感觉更好。同学们都表示在这两个月的时间里没有添加过糖。在期末，艾伦和罗斯请同学们填写一份关于他们对生活感受的问卷调查。

Twenty said they felt better about life than at the beginning of the study, and eighteen of these said that they believed that it was because they had stopped adding sugar to things. The other five said that they did not feel good about life, but did not think that this had anything to do with the sugar. On the basis of this experiment, Alan and Rose concluded that the elimination of sugar from the diet promoted a good attitude toward life for most of their classmates.  
二十人表示他们对生活的感觉比研究开始时好，其中十八人认为这是因为他们停止往食物中加糖。另外五人表示他们对生活感觉不好，但他们认为这与糖没有任何关系。根据这个实验，艾伦和罗斯得出结论，从饮食中消除糖对大部分同学的生活态度有积极的促进作用。

1. Was there a control group in the study? If so, identify it.  
   在研究中是否有对照组？如果有，请指出。
2. ­tions before and during the treatment?What steps were taken to ensure the comparability of the situations before and during the treatment?  
   在治疗前后如何确保情况的可比性采取了哪些步骤？
3. Were the situations before and during the treatment similar enough? Why?  
   治疗前后的情况是否足够相似？为什么？
4. ­sible as you can.State another plausible explanation of the results. Make it as plausible as you can.  
   提出另一个可能的结果解释。尽可能使其合理。
5. Were they justified in drawing the conclusion they did? Why?  
   他们得出的结论是否合理？为什么？

­tions to which it had been applied.8:30 Millie and Arturo were curious to see whether a particular cream is helpful in reducing painful sunburn. They marked out ten equal (Γ' × 1") sections across each of their shoulders (making twenty areas in all) and numbered the sections on each back from 1 to 10, going from left to right. For each pair of sections (for example, Millie’s #1 and Arturo’s #1), they flipped a coin to decide which would receive the cream treatment. It turned out that four sections from Millie’s and six sections from Arturo’s shoulder were selected to receive cream. They applied the cream to the selected sections and lay in the midday sun face down for one hour with their shoulders uncovered. That night, the cream was washed off. The next day, they examined the twenty sections and found that in all cases the ones that were not creamed were painful and the ones that had been creamed were not painful. They concluded that the cream prevented painful sunburn on the sections to which it had been applied.  
8:30米莉和阿图罗很好奇一种特定的乳霜是否有助于减轻痛苦的晒伤。他们在每个肩膀上划出了十个相等（Γ' × 1"）的部分（总共二十个区域），并在每个背部的部分上标上了从1到10的数字，从左到右。对于每一对部分（例如，米莉的#1和阿图罗的#1），他们抛硬币决定哪个部分会接受乳霜治疗。结果是米莉的四个部分和阿图罗的六个部分被选中接受乳霜。他们将乳霜涂在选定的部分上，然后面朝下躺在正午的阳光下一小时，肩膀暴露在外。那天晚上，他们洗掉了乳霜。第二天，他们检查了这二十个部分，发现在所有情况下，没有涂乳霜的部分都很疼痛，而涂了乳霜的部分则不疼痛。他们得出结论，这种乳霜可以预防涂抹部位的痛苦晒伤。

1. What was the experimental group? The control group?  
   实验组是什么？对照组是什么？
2. Did they achieve random assignment to the experimental and control groups?  
   他们是否实现了对实验组和对照组的随机分配？
3. Were the experimental and control groups similar enough? Why?  
   实验组和对照组是否足够相似？为什么？
4. ­ble as you can.State another possible explanation of the results. Make it as plausible as you can.  
   提出另一个可能的结果解释。尽可能使其合理。
5. Were Millie and Arturo justified in drawing the conclusion that they did? Why?  
   他们是合理的得出他们的结论吗？为什么？

Experimental Reasoning Assumptions  
实验推理假设

When we reason about experiments, we make assumptions. That is, we take certain things for granted. Because of these assumptions, our results never give us the absolute certainty of a conclusion’s following necessarily from the data. The most we can ever hope for is proof beyond a reasonable doubt, and often we have less than this.  
当我们推理实验时，我们会做出一些假设。也就是说，我们认为某些事情是理所当然的。由于这些假设，我们的结果从来不能给我们绝对的确定性，即从数据中必然得出结论。我们所能期望的最多就是超越合理怀疑的证明，而通常我们的证据还不足以达到这一点。

The type of assumptions I shall be discussing here come under the I in the FRISCO approach. This is the type of assumption that is needed to justify an inference.  
我将在这里讨论的假设类型属于FRISCO方法中的I。这是一种需要用来证明推理的假设类型。

The Assumption that the Experiment  
假设实验

Was Carefully and Properly Done  
仔细而正确地完成

Consider again the Redi experiment. One possible alternative explanation of the absence of maggots in the sealed flasks is that the meat was poisoned. That alternative hypothesis would explain w hy no maggots were observed by Redi in the sealed flasks. But if the experiment had been conducted properly, Redi would have taken steps to see to it that the meat was normal meat. In reasoning about the experiment, he assumed that the steps had been effective and that the meat was normal meat. This is one part of his broader assumption that the experiment had been conducted properly.  
再次考虑雷迪实验。密封瓶中没有蛆虫的一个可能的替代解释是肉被毒害了。这个替代假设可以解释为什么雷迪在密封瓶中没有观察到蛆虫。但是如果实验被正确地进行，雷迪会采取措施确保肉是正常的。在对实验进行推理时，他假设这些步骤是有效的，并且肉是正常的。这是他更广泛的假设的一部分，即实验已经被正确地进行了。

The control group (consisting of the pieces of meat in the open flasks) was supposed to provide a check on the possibility of such things as poisoned meat. The alternative hypothesis that the meat was poisoned seems to be ruled out by what happened to the control group. From the poisoned-meat hypothesis, we wzould have predicted that maggots would not grow in the control flasks, but maggots did grow in the control flasks. By denial-of-the-consequent reasoning, it seemed to follow that the poisoned-meat hypothesis was false.  
对照组（由开放烧瓶中的肉块组成）应该用来检查是否存在毒肉等可能性。肉被毒害的替代假设似乎被对照组的情况所排除。根据被毒肉假设，我们预测对照烧瓶中不会生长蛆虫，但实际上对照烧瓶中确实生长了蛆虫。通过否定-因果推理，似乎可以得出被毒肉假设是错误的结论。­posed to provide ­pened to ­dicted

However, comparability of experimental and control groups was assumed in deriving this prediction from the poisoned-meat hypothesis. The two selections of meat were supposed to have been the same at the outset, so that they could be compared at the end of the experiment. But suppose that the meat in the covered flasks had been poisoned, through carelessness, but the meat in the open flasks had not been poisoned. Then the explanation that the meat (in the covered flasks) was poisoned wrould not have been ruled out by the results for the open flasks.  
然而，在从毒肉假设中推导出这个预测时，假设实验组和对照组之间是可比较的。两份肉的选择在一开始被假定是相同的，以便在实验结束时进行比较。但是假设被覆盖瓶中的肉是由于疏忽而被毒害的，而敞开瓶中的肉没有被毒害。那么，对于敞开瓶的结果来说，肉（在覆盖瓶中）被毒害的解释将不会被排除。­pared ­

In order that the control group results rule out the poisoned-meat hypothesis, Redi assumed that the experimental and control groups were similar at the outset. This assumption is part of the broader assumption that the experiment was properly conducted.  
为了排除有毒肉假设，雷迪假设实验组和对照组在开始时是相似的，以便对照组的结果排除有毒肉假设。这个假设是更广泛的实验正常进行的假设的一部分。­tion

Assumptions About the Way Things Happen  
关于事情发生方式的假设

A second kind of assumption we generally make is about the way things generally happen. For example, as I suggested earlier, it was logically possible that maggots developed in the experimental group meat but saw the covering, were frightened by it, and became immobile, like a baby rabbit when frightened. Perhaps they then stopped growing because they did not eat, but went into a state of suspended animation, like hibernating bears. We might think that this is all wildly implausible, based on w hat we know' about maggots, but if it had happened, it would have been an alternative explanation of Redi’s failure to observe maggots around the meat in the covered flasks. In drawing his conclusion, Redi assumed that the maggots, if any were produced, would be detectable. This seems to be a plausible assumption about the way things happen, but Redi’s reasoning did depend on it. It was one of many assumptions he made about the way things generally happen.  
我们通常做出的第二种假设是关于事物通常发生的方式。例如，正如我之前提到的，逻辑上可能会发生在实验组的肉中产生蛆，但看到了覆盖物，被吓到了，变得不动，就像小兔子受到惊吓时一样。也许它们停止生长是因为它们没有进食，而是进入了一种悬浮动画的状态，就像冬眠的熊一样。我们可能认为这一切都是荒谬的，基于我们对蛆的了解，但如果发生了这种情况，它将是对雷迪未能观察到覆盖瓶中肉周围蛆的另一种解释。在得出结论时，雷迪假设如果产生了蛆，它们将是可检测到的。这似乎是一种关于事物发生方式的合理假设，但雷迪的推理确实依赖于它。这是他关于事物通常发生方式的众多假设之一。­mation, like hibernating bears. We might think that this is all wildly implausible,

Summary and Comment  
摘要和评论

At least two general types of assumptions are generally needed in reasoning about experiments: assumptions about the degree to which the experiment was well- conducted, and assumptions about the way things generally happen. There is not always a sharp line between these types, because in deciding whether the experiment was conducted well, we make assumptions about the way things happen. For example, in deciding that the possible poisoning of the meat was a relevant condition, we made the assumption that poisoning of the meat would have prevented the growth of maggots. This last is an assumption about the way things happen. The need for these assumptions to be true makes thinking about the following two questions useful:  
至少有两种一般类型的假设在推理实验时通常是必需的：关于实验进行得好的程度的假设，以及关于事物通常发生的方式的假设。这些类型之间并不总是有明确的界限，因为在决定实验是否进行得好时，我们会对事物发生的方式做出假设。例如，在决定可能的肉类中毒是一个相关条件时，我们做出了这样一个假设，即肉类中毒会阻止蛆的生长。这最后一个假设是关于事物发生方式的假设。这些假设需要为真，因此思考以下两个问题是有用的：

1. Was the experiment conducted well?  
   实验进行得好吗？
2. Is the reasoning supported by what it is plausible to believe about the way things happen?  
   推理是否得到了对事物发生方式的合理信任的支持？

The importance of the assumptions about the way things happen shows the importance of knowing the field of study when doing or judging an experiment. This is part of knowing the situation, the 5 in FRISCO.  
对事物发生方式的假设的重要性显示了在进行或评判实验时了解研究领域的重要性。这是了解情况的一部分，FRISCO中的5。

The Reasoning Pattern in Rejecting Hypotheses  
拒绝假设的推理模式

When we reason from a denied prediction back to a denial of a hypothesis, the form of the reasoning follows deductive patterns you have seen earlier (in Chapters 5, 6, and 7). In Example 8:1, this rejection-of-the-hypothesis-reasoning is presented as a two-step process in order to emphasize the role of the assumptions.  
当我们从被否定的预测推理回到对假设的否定时，推理的形式遵循你之前见过的演绎模式（在第5、6和7章）。在例8:1中，这种拒绝假设的推理被呈现为一个两步过程，以强调假设的假设的作用。

Example 8:1

First Step-  
第一步

1. If the hypothesis is true and the assumptions are true, then the prediction will be true.  
   如果假设是正确的，且假设是真实的，那么预测将是正确的。
2. If *h* and *a,* then *p.*
3. *Notp.*
4. Therefore, not *(h* and *a)* (not both *b* and *a).*
5. Not *(b* and *a)* (using the conclusion of the first step as a reason in the second).
6. a.
7. Therefore, not *h.*
8. The prediction is not true.  
   预测不准确。
9. Therefore, not both the hypothesis and the assumptions are true.  
   因此，假设和假设并非都是真实的。

Second Step:  
第二步：

1. Not both the hypothesis and assumptions are true  
   假设和假设不全都是真的
2. Theassumptions are true.
3. Therefore, the hypothesis is not true.   
   因此，假设不成立。

­sists of the denial of the consequent. The second step is deductively valid because it consists of the affirmation of one part of a denied conjunction. If you affirm one part, you have to deny the other. Therefore, the whole argument is deductively valid.In this two-step process, die conclusion of the first step (line #3) is used as a reason (line #4) in the second step. The first step is deductively valid because it consists of the denial of the consequent. The second step is deductively valid because it consists of the affirmation of one part of a denied conjunction. If you affirm one part, you have to deny the other. Therefore, the whole argument is deductively valid.  
在这个两步骤的过程中，第一步的结论（第3行）被用作第二步的原因（第4行）。第一步是演绎有效的，因为它包括否定后果。第二步是演绎有效的，因为它包括否定连词的一部分的肯定。如果你肯定一部分，就必须否定另一部分。因此，整个论证是演绎有效的。

Note that the falsity of the prediction docs not by itself require us to deny the hypothesis. An alternative would be to deny one of the assumptions. The falsity of the prediction requires us only to deny either the hypothesis or at least one of the assumptions.  
请注意，预测的错误并不意味着我们必须否定假设。另一种选择是否定其中一个假设。预测的错误只要求我们否定假设或者至少否定其中一个假设。

One key point here is tiιat such reasoning is not simple denial-of the- consequent reasoning that leads from a false prediction to the denial of the hypothesis. There is a logical way out for a defender of the hypothesis: to claim that one or more of the assumptions is false.  
这里的一个关键点是，这种推理并不是简单地否认从错误的预测到假设的否定的推理。对于假设的辩护者来说，有一种逻辑的解决办法：声称其中一个或多个假设是错误的。­esis.

Consider the poisoned meat hypothesis (PMH for short), which is offered to explain why the maggots did not grow' in the experimental (covered) flasks:  
考虑被毒害的肉假设（简称PMH），该假设被提出来解释为什么实验（盖着的）瓶子里的蛆没有生长。

*PMH: The meat in the covered flasks was poisoned.  
PMH：覆盖瓶中的肉被毒害了。*

One of the assumptions in reasoning to a rejection of this hypothesis is that the experiment was otherwise done well, which includes the assumption that the experimental group and control group were similar. There were many other assumptions as well. (For simplicity', let us group them all together under the label EODWfor experiment otherwise done well.) If this broad assumption and the alternative hypothesis, PMH, are true, then we would have predicted that there would be no maggots in the control group pieces of meat. (Call this prediction NMC.) But there were maggots in those pieces of meat. Therefore, (by denial-of-the-consequent reasoning) not both the assumption and the hypothesis, PMH, are true. Example 8:2 presents this first step, using intuitive abbreviations on the left and generic abbreviations on the right.  
推翻这个假设的推理中的一个假设是实验本身做得很好，其中包括实验组和对照组相似的假设。还有许多其他的假设。（为简单起见，让我们将它们都归为“EODW”即实验本身做得很好的标签下。）如果这个广义的假设和备择假设PMH都是真的，那么我们预测对照组的肉块中不会有蛆。（将这个预测称为NMC。）但是那些肉块中有蛆。因此，（通过否定-推论推理）假设和假设PMH不可能同时成立。例子8:2展示了这个第一步，左边使用直观的缩写，右边使用通用的缩写。­*­*

Example 8:2

1. If *PMH* and *EODW,* then *NMC.*
2. Not *NMC.*
3. Therefore, not both *PMH* and *EODW.*

**(or) 1.** If *h* and *et,* then *p.*

1. *Notp.*
2. Therefore, not *(h* and *a).*

Suppose further that the assumption, EODW, is true. Then (by deductively valid reasoning using the assertion of one part of a negated conjunction), the hypothesis, PMH, must be false. Example 8:3 presents this second step.  
假设进一步，假设EODW是真的。然后（通过使用否定连词的一部分的断言进行演绎有效推理），假设PMH必须是错误的。例8:3展示了这第二步。­esis,

Example 8:3

1. Not both PMH and EODW.  
   不能同时是PMH和EODW。
2. *EODW.*
3. Therefore, not *PMH.*

**(or) 4.** Not *(h* and a).

1. a
2. Therefore, not *h.*

Thus, establishing the falsity of PMH depends not only on the results in the control group, but also on the assumption that the experimental and control groups were similar, together with many other assumptions. If one of these assumptions is false, then the control group results do not refute the hypothesis, PMH.  
因此，证明PMH的虚假性不仅取决于对照组的结果，还取决于实验组和对照组相似的假设，以及许多其他假设。如果其中一个假设是错误的，那么对照组的结果就不能否定假设PMH。

Can you develop an argument against the spontaneous-generation hypothesis, using the two-step procedure and a broad assumption? Try it.  
你能否使用两步骤程序和广泛假设来反驳自发生成假说？试试看。

Accepting Hypotheses: Four Criteria  
接受假设：四个标准

Although rejection of hypotheses follows a deductive pattern, the acceptance of hypotheses instead depends on the satisfaction of these four criteria:  
虽然假设的拒绝遵循演绎的模式，但假设的接受取决于满足以下四个标准：

1. The hypothesis should explain some facts, given reasonable assumptions.  
   假设应该解释一些事实，假设合理的前提条件。
2. Other possible explanations should be inconsistent with some other facts, given reasonable assumptions.  
   其他可能的解释应该与其他事实不一致，假设合理的情况下。
3. ­sonable assumptions.The hypothesis itself should not be inconsistent with any facts, given reasonable assumptions.  
   假设本身不应与任何事实相矛盾，假设合理的前提条件。
4. The hypothesis and the mechanism of operation should be plausible.  
   假设和操作机制应该是合理的。

The first three criteria give necessary conditions, and the fourth a desirable condition.  
第一、第二和第三个条件是必要条件，第四个条件是可取条件。

Let us see how these criteria apply to the Redi hypothesis about the source of the maggots. In this discussion of these criteria, I leave out a number of qualifying words in order to convey the total picture. The application of these criteria is not as neat as it may appear, and requires good well-informed judgment.  
让我们看看这些标准如何适用于关于蛆源的雷迪假设。在讨论这些标准时，我省略了一些限定词以传达整体情况。这些标准的应用并不像看起来那么简单，需要良好的明智判断。

1. The hypothesis would explain some facts.  
   这个假设可以解释一些事实。

If true, the hypothesis that the maggots were introduced by flies would explain how the maggots got to be on the meat: The flies had access to the meat and brought the maggots (by laying eggs that developed into maggots). In applying this criterion, we do not require that the hypothesis explain all facts, only some facts. It does this.  
如果是真的，那么蛆虫是由苍蝇引入的假设将解释蛆虫如何出现在肉上：苍蝇可以接触到肉，并带来了蛆虫（通过产卵发育成蛆虫）。在应用这个标准时，我们不要求假设解释所有事实，只要解释一些事实即可。它做到了这一点。

1. All other explanations of these facts are inconsistent with some other facts, given reasonable assumptions.  
   这些事实的其他解释与一些其他事实不一致，基于合理的假设。

This is the elimination criterion. Roughly speaking, if all other hypotheses are ruled out, given reasonable assumptions, then the remaining one is probably acceptable, provided the other criteria are satisfied. If the hypothesis that the meat was poisoned, the hypothesis that the maggots generated spontaneously, and the hypothesis that the maggots were there but not observed, were all shown to be inconsistent with some facts, given reasonable assumptions, and these are the only hypotheses that have any plausibility, then Redi’s hypothesis was strongly supported. It would satisfy this elimination - of- other- explanations criterion.  
这是排除标准。粗略地说，如果所有其他假设都被排除，根据合理的假设，那么剩下的一个可能是可接受的，前提是其他标准得到满足。如果肉被毒害的假设、蛆自发生成的假设以及蛆存在但未被观察到的假设，根据合理的假设，都被证明与一些事实不一致，并且这些是唯一具有任何合理性的假设，那么Redis的假设得到了有力的支持。它将满足这个排除其他解释的标准。

­esis, then we must not endorse the original hypothesis. Furthermore, we must have made a legitimate effort to uncover plausible alternative hypotheses.An implication of this criterion is that if there is a plausible alternative hypothesis, then we must not endorse the original hypothesis. Furthermore, we must have made a legitimate effort to uncover plausible alternative hypotheses.   
这个标准的含义是，如果存在一个合理的替代假设，那么我们不能支持原始假设。此外，我们必须努力寻找合理的替代假设。

1. The hypothesis is not inconsistent with any facts.  
   假设与任何事实都不矛盾。

­tent with this imagined fact. However, this imagined fact was never established, so it did not refute the hypothesis. Ideally, the absence of facts that appear to be inconsis­tent with the hypothesis The accepted hypothesis should not be inconsistent with any facts. Imagine it to be a tact that flies lay eggs that hatch out as flies (in a way similar to chickens). Then Redi s hypothesis would have been unacceptable because the hypothesis is inconsistent with this imagined fact. However, this imagined fact was never established, so it did not refute the hypothesis. Ideally, the absence of facts that appear to be inconsistent with the hypothesis is a necessary condition for the acceptability of a hypothesis.  
被接受的假设不应与任何事实不一致。想象一下，苍蝇产卵并孵化成苍蝇（类似于鸡），这是一个假设。那么，雷迪的假设将是不可接受的，因为该假设与这个想象的事实不一致。然而，这个想象的事实从未被证实，因此它并没有反驳这个假设。理想情况下，与假设不一致的事实的缺乏是假设可接受性的必要条件。

However, we must not be too hasty. Apparently inconsistent facts or information can sometimes be explained away. For example, the fact that no eggs were observable in the meat that was open to the air seemed inconsistent with the Redi hypothesis, if the intermediary between the flies and the maggots was assumed to be eggs laid by the flies. This apparent inconsistency could be explained away by the assumption that the eggs were too small to be observed. This assumption turned out to be true when magnification techniques were used. There is often an uncertain area between inconsistency and the possibility that something can be explained away. Judgment is required and we often cannot be sure.  
然而，我们不能过于仓促。显然不一致的事实或信息有时可以解释清楚。例如，肉类中没有可观察到的蛋与雷迪假设不一致，如果假设蝇和蛆之间的中间体是蝇产下的卵。这种明显的不一致可以通过假设卵太小而无法观察来解释清楚。当使用放大技术时，这种假设被证明是正确的。在不一致和某事可以解释清楚的可能性之间经常存在一个不确定的领域。需要判断，我们通常无法确定。­tion can sometimes

1. The hypothesis is plausible.  
   假设是合理的。

Satisfaction of the plausibility criterion is not a strict requirement. It just helps. Sometimes the hypothesis is a radical departure from what seems plausible. At one time, for example, it seemed implausible that flies laid eggs that turn into maggots. At one time, it seemed implausible that the earth was round, and at one time, Einstein’s relativity hypothesis seemed implausible (and still does to many people).  
满足可信度标准并非严格要求。它只是有所帮助。有时候，假设与看似合理的观点存在激烈的分歧。比如，曾经有一段时间，苍蝇产卵后会孵化成蛆这一观点似乎不太可能。曾经有一段时间，地球是圆的这一观点似乎不太可能，而爱因斯坦的相对论假设在某个时候也似乎不太可能（对许多人来说至今如此）。

But the more implausible the hypothesis, the stronger must be the satisfaction of the other criteria, especially the elimination-of-alternatives criterion. If we accept a hvpothesis that seems implausible at first sight, then the alternatives that have occurred to us must be that much more implausible. And we must be that much more certain that there are no other alternatives.  
但是假设越不可信，其他标准的满足度就必须越强，尤其是排除其他可能性的标准。如果我们接受了一种乍看起来不可信的假设，那么我们所考虑到的其他可能性就必须更加不可信。而且我们必须更加确定没有其他的选择。

The reasoning for hypothesis acceptance is not as neat as that in which hypotheses are rejected. In hvpothesis rejection, given the assumptions and the results, it could follow necessarily that the hypothesis is false. In hypothesis acceptance, satisfaction of the criteria can make it very probable that the hypothesis is true, but it is still possible that the hypothesis is not true: There might be another possible explanation of the facts that has not occurred to us. For example, most people living in the fifteenth century believed that the world is flat. From their everyday experiences, they had no reason to think otherwise. The hypothesis that the world is flat explained why it looked roughly flat and explained, they thought, why people do not fall off the world: The world is always under them. It explained why people who traveled very far away sometimes did not return: They fell off, according to the view. But there was another explanation of those facts. Suppose you had lived then. What would you have thought?  
假设被接受的推理并不像假设被拒绝的那样简洁。在假设被拒绝的情况下，根据假设和结果，可以必然得出假设是错误的结论。在假设被接受的情况下，满足标准可能使假设为真的可能性非常大，但仍然有可能假设不为真：可能存在另一种我们没有想到的事实解释。例如，大多数生活在15世纪的人相信地球是平的。根据他们的日常经验，他们没有理由认为不是这样。地球是平的这个假设解释了为什么看起来大致是平的，也解释了为什么人们不会从地球上掉下来：地球始终在他们下面。它解释了为什么有些人远离家乡后有时不会回来：根据这种观点，他们掉下来了。但这些事实还有另一种解释。假设你当时生活在那个时代，你会怎么想？­ses ­­

Roughly speaking, the reasoning pattern in accepting a hypothesis is a process of elimination. We try to eliminate all the hypotheses; if just one remains and explains certain facts, we probably should accept it, at least provisionally. This pattern fits experimental reasoning. It also fits diagnosis, troubleshooting, and many other areas of reasoning, as we shall see.   
粗略地说，接受假设的推理模式是一个排除的过程。我们试图排除所有的假设；如果只剩下一个并能解释某些事实，我们可能应该接受它，至少是暂时的。这个模式适用于实验推理。它也适用于诊断、故障排除和许多其他推理领域，正如我们将看到的。

Actually, this account and the examples of hypothesis acceptance and rejection are simplified for purposes of explaining the patterns. When people are deeply involved in an investigation, things tend to get much more complex. Word meanings change, and auxiliary assumptions are invented to save hypotheses. Sometimes, even when there is conflicting evidence, hypotheses are kept because they work for many situations, and there is no better hypothesis. You must use your judgment, try to be well-informed, and be patient.  
实际上，为了解释这些模式，这个账户和假设接受和拒绝的例子都被简化了。当人们深入调查时，事情往往变得更加复杂。词义会改变，辅助假设会被创造出来以支持假设。有时，即使存在冲突的证据，假设也会被保留，因为它们适用于许多情况，而且没有更好的假设。你必须运用判断力，努力获取充分的信息，并保持耐心。

Summary So Far—And Comment  
目前为止的总结和评论

The criteria for accepting a hypothesis are as follows:  
接受假设的标准如下：

1. The hypothesis should explain some facts, given reasonable assumptions.  
   假设应该解释一些事实，假设合理的前提条件。
2. Other possible explanations should be inconsistent with some other facts, given reasonable assumptions.  
   其他可能的解释应该与其他事实不一致，假设合理的情况下。
3. ­able assumptions.The hypothesis should not be inconsistent with any facts, given reasonable assumptions.  
   假设不应与任何事实不一致，假设合理的前提条件。
4. The hypothesis should be plausible.  
   假设应该是合理的。

­tive hypotheses.The first three criteria are ideal necessary conditions; the fourth is a desirable condition. The second criterion requires that we not accept a hypothesis, if there is a plausible alternative—and we must have made a legitimate effort to uncover alternative hypotheses.  
第一、第二、第三个条件是理想的必要条件；第四个条件是可取的条件。第二个标准要求我们如果存在一个合理的替代方案，就不接受一个假设，并且我们必须努力寻找替代的假设。

­sistency. The third criterion expresses an ideal.The third criterion requires that we not accept a hypothesis, if it is inconsistent with known facts. But in complex cases, it is often difficult to be sure of this inconsistency. The third criterion expresses an ideal.  
第三个标准要求我们不接受与已知事实不一致的假设。但在复杂情况下，确定这种不一致往往很困难。第三个标准表达了一个理想。

These criteria are broad and general. Different fields of study emphasize different ones of the four, and add refinements and rules that are specific to the field. But these four provide a good basis for understanding the basic thinking in any experimentation.  
这些标准是宽泛而普遍的。不同的研究领域强调其中的不同点，并添加了特定于该领域的细化和规则。但这四个标准为理解任何实验的基本思维提供了良好的基础。

­antee of success in selecting correct conclusions. These criteria must be applied with care and thought, and must be applied by someone who knows something about the topic. There are assumptions involved in deciding that the competing hypotheses are inconsistent with some set of facts, in deciding that the selected hypothesis is consis­tent with the facts, and in deciding about the plausibility and explanatory ability of the hypothesis. Good judgment and background knowledge are required in deciding about the assumptions.The criteria we use in judging hypotheses of experiments do not give us a guarantee of success in selecting correct conclusions. These criteria must be applied with care and thought, and must be applied by someone who knows something about the topic. There are assumptions involved in deciding that the competing hypotheses are inconsistent with some set of facts, in deciding that the selected hypothesis is consistent with the facts, and in deciding about the plausibility and explanatory ability of the hypothesis. Good judgment and background knowledge are required in deciding about the assumptions.  
我们在评判实验假设时使用的标准并不能保证我们在选择正确结论时取得成功。这些标准必须谨慎和深思熟虑地应用，并且必须由了解相关主题的人来应用。在决定竞争性假设与某些事实不一致、决定所选假设与事实一致以及决定假设的合理性和解释能力时，都涉及到一些假设。在决定这些假设时需要良好的判断力和背景知识。

I am not saying that we can never know anything. We do know that maggots do not spontaneously generate in meat. We do know that flies often lay eggs on meat, if they get the chance, and that these eggs often develop into maggots. We do know that the defendant in the jury trial I discussed performed the act that caused the death of the victim. To use the language of the courts, these things have been proven beyond a reasonable doubt.  
我并不是说我们永远无法知道任何事情。我们确实知道蛆不会在肉中自发生成。我们确实知道苍蝇经常在肉上产卵，如果它们有机会的话，这些卵通常会发育成蛆。我们确实知道我讨论的陪审团审判中的被告犯下了导致受害者死亡的行为。用法庭的说法，这些事情已经被证明无可置疑。

­ments in the FRISG() approach. As shown in the Redi example, the hypothesis- acceptance criteria apply to the inference (∕') step in Actually, these four criteria for hypotheses arc appropriate to apply in many elements in the FRISG() approach. As shown in the Redi example, the hypothesis- acceptance criteria apply to the inference (∕') step in FRISCO. But they apply to more than inferences to hypotheses in experiments. As you will see, they also apply to infer ences to hypotheses about what someone is thinking, about what actually happened in the past (including the claim that Arlene killed Al, as well as all of history), and about what someone meant in saving or writing something.  
实际上，这四个假设的标准适用于FRISG()方法中的许多要素。正如在Redi的例子中所示，假设接受标准适用于FRISCO中的推理（∕'）步骤。但它们不仅适用于实验中对假设的推理，正如你将看到的，它们还适用于对某人的思考、过去实际发生的事情（包括Arlene杀死Al的说法以及整个历史）以及某人在保存或书写某事时的意思的推理。­

­tion of the conclusion in some arguments, is difficult and engenders the hypothesis that a given proposition is the conclusion. It is similar with the identification of rea­sons, with the determination of the situation, with the identification of some assump­tions, and with judgments about clarity (which often require judgments about what someone meant). There will be more about this broader applicability of these crite­ria for hypotheses in the next chapter.Furthermore, in complex cases, the identification of many elements within FRISCO constitutes hypothesis formulation and judgment. For example, identification of the conclusion in some arguments, is difficult and engenders the hypothesis that a given proposition is the conclusion. It is similar with the identification of reasons, with the determination of the situation, with the identification of some assumptions, and with judgments about clarity (which often require judgments about what someone meant). There will be more about this broader applicability of these criteria for hypotheses in the next chapter.  
此外，在复杂的情况下，对FRISCO中的许多要素进行识别构成了假设形成和判断。例如，在某些论证中，对结论的识别是困难的，并引发了一个假设，即某个命题是结论。对于原因的识别、情况的确定、某些假设的识别以及对清晰度的判断（通常需要对某人的意图进行判断），也是类似的情况。关于这些假设的更广泛适用性，下一章将有更多内容。

Check-Up 8D

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

8:31 In concluding that the ‘"worms” were introduced by flies, Redi assumed that the experiment was conducted properly.  
在得出‘蠕虫是由苍蝇引入’的结论时，雷迪假设实验被正确地进行了。

8:32 One criterion for judging hypotheses of experiments is that there are no more than two other plausible explanations of the facts.  
8:32 判断实验假设的一个标准是，事实上不存在超过两个其他合理的解释。

8:33 If the results turn out other than predicted, then the hypothesis must be false, regardless of the truth of the assumptions.  
8:33 如果结果与预测不符，则假设必定是错误的，无论假设的真实性如何。

8:34 In a good control-group experiment, the only significant difference in the treatments of the experimental and control groups is the difference in the independent variable.  
在一个良好的对照组实验中，实验组和对照组的处理方式唯一的显著差异就是自变量的差异。

8:35 Judging hypotheses involves all elements of FRISCO.  
8:35 判断假设涉及到 FRISCO 的所有要素。

Medium Answer  
中等答案

8:36 Two English teachers were interested in the view that reading about violence tends to make adolescents more violence-prone. They decided to check one implication of this view: that reading Hamlet would tend to make their adolescent students more violence-prone. At the beginning of the school year the teachers took their alphabetized literature class lists (each teacher had one class of twenty-five students) and assigned every other student to an experimental group. The others were assigned to a control group. There were twenty-five twelfthgrade students in each group, with an average age of about seventeen years. Because the classes met concurrently, one teacher, who specialized in Hamlet, taught all the experimental students a unit on Hamlet that lasted three weeks. The other teacher taught the control students a unit on Romantic poetry.  
8:36 两位英语教师对阅读暴力内容会使青少年更容易变得暴力倾向感兴趣。他们决定验证这一观点的一个推论：阅读《哈姆雷特》会使他们的青少年学生更容易变得暴力倾向。在学年初，这两位教师拿出他们按字母顺序排列的文学课名单（每位教师有一个班级，每个班级有25名学生），将每隔一个学生分配到实验组，其他学生分配到对照组。每组都有25名12年级学生，平均年龄约为17岁。由于两个班级同时上课，一位专攻《哈姆雷特》的教师教授所有实验组学生一个为期三周的《哈姆雷特》单元。另一位教师则教授对照组学生一个关于浪漫主义诗歌的单元。­ning of the school year the teachers took their alphabetized literature class lists (each teacher had one class of twenty-five students) and assigned every other student to an experimental group. The others were assigned to a control group. There were twenty-five twelfth­grade students in each group, with an average age of about seventeen years. Because the classes met concurrently, one teacher, who special­ized in

At the end of the three-week period, each student was asked to rate the following statement on a scale ranging from a ‘"Strongly dis­agree” through “Strongly agree”- “The use of force and violence is often justified in our daily lives.”

­cantly more toward the “Strongly Agree” end of the scale than the control group’s average score. Suppose also that the teachers con­cluded that reading about violence in Suppose that the experimental group’s average score was significantly more toward the “Strongly Agree” end of the scale than the control group’s average score. Suppose also that the teachers concluded that reading about violence in Hamlet did tend to make the experimental group students violence-prone.  
在三周的期末，每个学生被要求根据一个从'强烈不同意'到'强烈同意'的范围来评价以下陈述：在我们的日常生活中，使用武力和暴力经常是合理的。 假设实验组的平均分明显偏向于'强烈同意'这一范围的末端，而对照组的平均分则不然。假设教师们得出结论，阅读《哈姆雷特》中的暴力确实会使实验组的学生更容易倾向于暴力行为。

1. Name a variable (other than the independent variable) that might have accounted for such results.  
   除了自变量之外，能够解释这些结果的变量的名称。
2. ­ing such a conclusion.State an assumption that the teachers would have made in drawing such a conclusion.  
   假设老师们在得出这样的结论时做出了一个假设。
3. If the assumption you just stated were false, would the teachers have been justified in drawing the conclusion? Why?  
   如果您刚刚提出的假设是错误的，老师们在得出结论时是否合理？为什么？

**8:37 Now suppose that, in the experiment described in 8:36, there was no significant difference between the two groups in their answer to the question. Also suppose that the teachers concluded that reading about violence in Hamlet did not tend to make the experimental-group students violence-prone.  
8:37 现在假设，在8:36中描述的实验中，两组在回答问题上没有显著差异。还假设教师得出结论，阅读《哈姆雷特》中关于暴力的内容并不会使实验组学生具有暴力倾向。**­dents violence-prone.

1. State an assumption that the teachers would have made in drawing that conclusion.  
   假设老师们在得出这个结论时做出了一个假设。­ing that conclusion.
2. If the assumption you just stated were false, would the teachers have been justified in drawing their conclusion? Why?  
   如果你刚才提出的假设是错误的，老师们得出结论是否合理？为什么？
3. State one weak feature in this experimental plan. Tell why you think it is a weak feature.  
   这个实验计划中存在一个弱点。解释为什么你认为它是一个弱点。
4. State one good feature in this experimental plan. Tell why you think it is a good feature.  
   在这个实验计划中，列举一个好的特点。解释为什么你认为它是一个好的特点。
5. Describe at least one change you would have made in the experimental plan and defend your suggestion.  
   描述你会对实验计划做出的至少一个改变，并为你的建议进行辩护。­mental plan and defend
6. Given the specified results (no significant difference), tell whether you think the teachers would be justified in drawing the conclusion given. Defend your judgment.  
   给定指定的结果（没有显著差异），请告诉我您是否认为教师在得出给定的结论时是合理的。请为您的判断提供辩护。­

**8:38 Using Redi’s evidence, develop and write out an argument against the spontaneous generation hypothesis as the explanation of what happened to Redi’s control group. Follow the two-step process and state at least one of the assumptions that you use.  
8:38 使用Redis的证据，针对自发生成假设作为解释Redis对照组发生的事情的论证进行开发和撰写。遵循两步骤的过程，并声明您使用的至少一个假设。**­pened to Redi’s control group. Follow the two-step process and state at least one of the assumptions that

**8:39 Revise your appraisal done as 8:18 or 8:19. To the extent that you are able in a reasonable period of time, apply all the elements in FRISCO.  
8:39 请将您的评估修订为8:18或8:19。在合理的时间范围内，尽可能地应用FRISCO的所有要素。**

Diagnosis or Troubleshooting2

Diagnosis and troubleshooting also produce and test hypotheses about the cause of a problem, but call for tests and analysis of symptoms. When either diagnosis or trou-

2 This discussion has been informed by the work of Scott D. Johnson and his associates. See their Application of Cognitive Theory to the Design, Development, and Implementation of a Computer-Based Troubleshooting Tutor (Berkeley, CA: National Center for Research in Vocational Education, 1992). bleshooting require deliberate intervention to see what happens, then it is also experimenting. I he reasoning patterns for diagnosis, troubleshooting, and experimentation are similar. Furthermore, the general principles of diagnosis and troubleshooting are identical. What to call it depends on the field (for example, medicine versus auto mechanics).  
诊断和故障排除也会对问题的原因产生和测试假设，但需要对症状进行测试和分析。当诊断或故障排除需要有意干预以观察结果时，这也是一种实验。诊断、故障排除和实验的推理模式相似。此外，诊断和故障排除的一般原则是相同的。如何称呼取决于领域（例如，医学与汽车机械）。­imenting. I he reasoning patterns for diagnosis, troubleshooting, and experimenta­

*Diagnosis, or troubleshooting, is a type of activity that has the goal of finding out what is wrong with something that malfunctions. We all diagnose and troubleshoot. Some people do it for a living, but we all do it for personal reasons at least once in a while. Perhaps a flashlight does not work; perhaps a bicycle’s gear shift is inoperative; perhaps one’s own body has a problem: a fingernail breaks or one gets a headache. To diagnose or troubleshoot a problem with our bodies or a complex piece of machinery usually requires more knowledge than most of us have, so we are often very dependent on repair, maintenance, and medical people. In this section, you will see a few principles of diagnosis or troubleshooting. They can serve as guides to the things we can do for ourselves, but also as basic guidelines for professional troubleshooters and diagnosticians. You will also see some things that we can do for others to facilitate the diagnosing or troubleshooting that they do for us.  
诊断或故障排除是一种活动，其目标是找出出现故障的事物出了什么问题。我们都会进行诊断和故障排除。有些人以此为职业，但我们每个人都会偶尔为了个人原因进行诊断和故障排除。也许手电筒不工作，也许自行车的变速器失灵，也许我们自己的身体出了问题：指甲断了或者头痛了。要诊断或故障排除我们的身体或复杂的机械问题通常需要比我们大多数人拥有的知识更多，所以我们常常非常依赖维修、保养和医疗人员。在本节中，您将看到一些诊断或故障排除的原则。它们可以作为我们自己能够做的指南，同时也是专业故障排除者和诊断师的基本准则。您还将看到一些我们可以为他人做的事情，以促进他们为我们进行诊断或故障排除。*­bleshooters and diagnosticians. You will also see some things that we can do for oth­ers to facilitate the diagnosing or troubleshooting that they do for us.

Do-It-Yourself Troubleshooting: The Inoperative Flashlight  
自助故障排除：无法运行的手电筒

Consider first this simple example of my troubleshooting a defective four-battery flashlight (which I shall call F). The flashlight did not operate when the switch was turned on. I happen to know that some of the things that can cause flashlights to be inoperative are these: bad batteries, extreme cold, a broken filament in the light bulb, corrosion on the switch and other contacts, and separation of the electrical contact between the body of the flashlight and the head. The basic strategy is to rule out possible causes, that is, to rule out hypotheses about what is causing the malfunction. When all but one are eliminated, then that one might well be the cause of the problem. But we have to check to make sure.  
首先考虑一下我解决一个有缺陷的四节电池手电筒（我称之为F）的简单例子。当打开开关时，手电筒无法工作。我碰巧知道导致手电筒无法工作的一些原因是：电池不好、极端寒冷、灯泡中的灯丝断裂、开关和其他接触点上的腐蚀，以及手电筒机身和头部之间的电气接触分离。基本策略是排除可能的原因，也就是排除关于故障原因的假设。当除了一个原因之外的所有原因都被排除时，那个原因很可能是问题的原因。但我们必须进行检查以确保。­sible causes, that is, to rule out hypotheses about what is causing the malfunction. When all but one are eliminated, then that one might well be the cause of the prob­lem. But we have to check to make sure.

It was not cold, so I ruled out that possible cause. I decided to test things one at a time bv putting the components in a similar flashlight that worked (which I shall call Z). Thad brand new batteries. Even though *Fs* batteries were new, I tested them by putting all of them in *Z* and found that *Z* did not work. The batteries were in series; that is, any one’s being bad was a sufficient condition for the flashlight not to operate. Note again the importance of background knowledge. I concluded that there was a defect in the set of batteries. Such a defect would have explained the fail­ure of both flashlights, and there was almost certainly no other factor that would have explained the failure of Zbecause it had just worked with its own battery set. (This is another example, by the way, of best-explanation proof beyond a reasonable doubt.)

There might possibly have also been another problem, perhaps with the switch, perhaps with the bulb, perhaps something else. I had not yet ruled them out. I would have been careless to claim at that point that I had found the problem. I had found one sufficient condition for the malfunction, but there might have been another, for all I knew at that time.  
天气不冷，所以我排除了这个可能的原因。我决定逐一测试事物，将这些组件放入一个工作正常的类似手电筒中（我将其称为Z）。Z使用了全新的电池。尽管Fs的电池是新的，但我将它们全部放入Z中进行了测试，结果发现Z并没有工作。这些电池是串联的，也就是说，只要有一个电池坏了，手电筒就无法工作。再次强调背景知识的重要性。我得出结论，电池组中存在缺陷。这个缺陷可以解释两个手电筒都无法正常工作的原因，而且几乎肯定没有其他因素可以解释Z的故障，因为它刚刚使用了自己的电池组。（顺便说一下，这也是一个以最佳解释证明的例子，足以排除合理怀疑。）可能还存在其他问题，比如开关问题、灯泡问题，或者其他问题。我尚未排除它们。在那个时候，如果我声称已经找到了问题，那是粗心大意的。我只找到了一个导致故障的充分条件，但我当时并不知道是否还有其他条件。

Next, I was careful to keep the batteries identified as the Fset and the Zset, each consisting of four batteries. Because I was interested in determining which one or ones of the F set were defective, I kept the F batteries lined up in order. Had the problem been more complex, I might have labeled them to make sure that they were not mixed up.  
接下来，我小心地将电池标识为F组和Z组，每组都由四个电池组成。因为我想确定哪个或哪些F组的电池有问题，所以我将F组的电池按顺序排列。如果问题更复杂，我可能会给它们贴上标签，以确保它们不会混淆。

A simple procedure (and the thing that I did) was to put three of the original Z batteries in Z and try the original batteries one at a time as the fourth battery. That involved four more tests.  
一个简单的步骤（以及我所做的事情）是将三个原始的Z电池放入Z，并逐个尝试原始电池作为第四个电池。这涉及四个额外的测试。

Efficiency  
效率

If testing had been very expensive or time-consuming (as it often is, though not in this case), the testing could have been done with fewer tests by putting two of Z,s original batteries in Ztogether with two of Fs batteries at once. Note that this is not varying one thing at a time. This shows that the method of varying one thing at a time, although the most thorough method, is sometimes too costly and inefficient to use.  
如果测试非常昂贵或耗时（尽管在这种情况下并非如此），可以通过同时将Z的两个原始电池与F的两个电池放在一起，以减少测试次数。请注意，这不是逐一变化一件事情。这表明，逐一变化一件事情的方法，尽管是最彻底的方法，有时候使用起来成本过高且效率低下。­nal batteries in Ztogether with two of ­ing one thing at a time. This shows that the method of varying one thing at a time, although the most thorough method, is sometimes too costly and inefficient to use.

If the flashlight worked, then with only one test I would have eliminated two possible causes, that is, two batteries as possible causes. I could then have tried each of the other two F batteries with three good batteries and thus located the defective battery or batteries. Even if the first of these two F batteries had been defective, I had to test the other battery because both might have been defective. I found that the fourth F battery was defective, and after replacing it in Z and checking to make sure that the replacement worked, put all four in F, which then tested satisfactorily. This last test was necessary because there might have been another problem in the flashlight.  
如果手电筒工作了，那么只需要一次测试，我就可以排除两个可能的原因，也就是两个电池可能的原因。然后，我可以用三个好电池分别测试另外两个F电池，从而找出有问题的电池。即使这两个F电池中的第一个是有问题的，我也必须测试另一个电池，因为两个电池都有可能有问题。我发现第四个F电池有问题，然后将其替换到Z中并检查确保替换后的电池工作正常，然后将所有四个电池放回F中，经过测试后，手电筒正常工作。这最后一次测试是必要的，因为手电筒可能还存在其他问题。­tery or batteries. Even if the first of these two

If each test had taken an hour to set up, rather than the few seconds it takes to replace and test a flashlight battery, then it might have been worth seeking the fewer number of tests. I mention this because in complex items (such as a large computer, a computer program, or an airplane navigation system), we can achieve significant savings in time and money by organizing more efficient tests.  
如果每个测试都需要花费一个小时来设置，而不是几秒钟来更换和测试手电筒电池，那么寻求更少的测试可能是值得的。我之所以提到这一点，是因为在复杂的物品（如大型计算机、计算机程序或飞机导航系统）中，通过组织更高效的测试，我们可以节省大量的时间和金钱。

The principle to follow is this: To the extent that testing is expensive or time­consuming, organize your test plan to secure a maximum amount of information from each test. Ideally, each test should eliminate a maximum number of likely causes of the problem, if we make certain simplifying assumptions. Testing two batteries in one test does that. If the light works, we eliminate the two batteries being tested; if it does not work, we might have eliminated the other batteries as the cause. (But remember that there might be more than one problem.)

­standing of the functioning of the whole system indicates that this series might well contain the cause. Then it might well be a good idea to use this test, and possibly rule out a large number of hypotheses at once. The assumption is that if a whole series of components works, then each individual one works and can be eliminated as a possi­ble cause of the malfunction. This is usually a reasonable assumption to make.If testing is expensive, narrow down the possibilities as quickly as possible. Suppose that one test will check a whole series of components, and your understanding of the functioning of the whole system indicates that this series might well contain the cause. Then it might well be a good idea to use this test, and possibly rule out a large number of hypotheses at once. The assumption is that if a whole series of components works, then each individual one works and can be eliminated as a possible cause of the malfunction. This is usually a reasonable assumption to make.  
遵循的原则是：在测试费用昂贵或耗时的情况下，组织你的测试计划以从每个测试中获得尽可能多的信息。理想情况下，每个测试应该消除尽可能多的问题可能原因，如果我们做出了某些简化的假设。在一个测试中测试两个电池可以做到这一点。如果灯亮了，我们排除了正在测试的两个电池；如果灯不亮，我们可能已经排除了其他电池作为原因。（但请记住可能存在多个问题。）如果测试费用昂贵，尽快缩小可能性。假设一个测试将检查一整个系列的组件，并且你对整个系统的功能了解表明该系列可能包含原因。那么使用这个测试，并可能一次排除大量的假设，可能是一个好主意。假设是，如果一整个系列的组件都工作正常，那么每个单独的组件都工作正常，并且可以排除为故障的可能原因。这通常是一个合理的假设。

A hypothesis is eliminated by its being found inconsistent with the test results, using denial-of-the-consequent reasoning. But there is always the possibility that it is the assumption that is faulty, rather than the hypothesis.  
一个假设被发现与测试结果不一致时，通过否定后果的推理来排除。但是，可能性总是存在，即假设有问题，而不是假设本身。

Alternative Diagnostic and Troubleshooting Strategies  
替代性诊断和故障排除策略

Γhcrc are three basic strategies. The efficiency strategy just described is especially appropriate when testing is expensive, but requires an experienced insightful person, especially if an understanding of the functioning of the whole system is to guide the selection of which subsystem to test first. Without such deep insight, understanding is still required in order to divide the whole system into (usually) equal parts. Differential cost of testing, however, is also a factor. Given two equally likely subsystems, the one to test first is usually the one that is least expensive to test.  
Γhcrc有三种基本策略。刚刚描述的效率策略在测试成本高昂时尤为合适，但需要经验丰富、洞察力强的人，尤其是如果要根据对整个系统运行的理解来指导选择先测试哪个子系统。如果没有这样深入的洞察力，仍然需要理解才能将整个系统分成（通常是）相等的部分。然而，测试的差异成本也是一个因素。在两个同样可能的子系统中，通常先测试的是成本较低的那个。­tems, the one to test

A second approach to diagnosis and testing is the one 1 first mentioned with the flashlight batteries: systematic testing ofevery component in order, varying one thing at a time. If you do not understand the total system, or if testing this way is so easy that a complex test is not worth the trouble, this approach might be the best compromise.  
诊断和测试的第二种方法是与手电筒电池提到的方法：按顺序对每个组件进行系统测试，一次只改变一件事。如果您不了解整个系统，或者以这种方式进行测试很容易，以至于复杂的测试不值得麻烦，那么这种方法可能是最好的妥协。

A third approach to troubleshooting and diagnosis is the memory approach. This approach depends on the troubleshooter’s remembering that specific symptoms have in the past been associated with specific causes. This approach does not require the deep expertise of the advanced efficiency approaches, but is sometimes the most feasible. One example of this approach is my habit of automatically replacing the light bulb in a house lamp when, immediately after turning on the light, there is a flash, and then the light is inoperative. 1 remember from experience that this combination of symptoms has always meant that the bulb is burned out.  
故障排除和诊断的第三种方法是记忆法。这种方法依赖于故障排除者记住过去特定症状与特定原因相关联的事实。这种方法不需要高级效率方法的深入专业知识，但有时是最可行的。这种方法的一个例子是当我打开灯光后，立即出现闪光，然后灯光无法工作时，我自动更换房间灯泡的习惯。根据经验，我记得这种症状组合总是意味着灯泡烧坏了。­sible. One example

Even though tins memory strategy is effective, for a limited range of situations, I would rather leave difficult diagnosis and troubleshooting in the hands of someone with understanding. Such a person can deal with a wider range of symptoms, including those that deviate slightly from the pattern that is memorized and that might have radically different causes.  
尽管这种记忆策略有效，但只适用于有限范围的情况，我宁愿将困难的诊断和故障排除交给理解问题的人。这样的人可以处理更广泛的症状，包括那些与已记忆模式稍有偏差并可能有根本不同原因的症状。­ing

In actual practice, the best diagnosticians and troubleshooters use all three strategies and combinations thereof, combining them as appropriate in a given situation.  
在实际操作中，最好的诊断师和故障排除者会使用所有三种策略及其组合，在特定情况下适当地将它们结合起来。­gies

Perhaps we might add a fourth strategy for the person too ignorant to engage in the simplest troubleshooting, especially if the testing might be dangerous: Call in an expert. Even here, there is an important critical thinking process: applying the criteria of credibilitv not only in the initial selection, but as the services of an expert continue to be used.  
也许我们可以为那些太无知以至于无法进行最简单的故障排除的人添加第四种策略，尤其是如果测试可能会有危险的话：请专家来帮忙。即使在这种情况下，也存在一个重要的批判性思维过程：不仅在最初选择时应用可信度的标准，而且在继续使用专家的服务时也要应用这些标准。­teria ­

Cooperating with Maintenance Specialists: Troubleshooting the Inoperative Radio  
与维护专家合作：故障排除无法运行的收音机。

Like most of us, I am not competent to repair radios and many other items I use in daily life. But there are things that I can do to help specialists in their diagnoses. For example, when I was maintenance officer for an aviation club, there were many things I could do to help the radio specialists when a radio malfunctioned. Doing these things often saved the club both time and money, because otherwise the repairer would not have found the problem without expensive flight testing. It was important that I describe the complaint as fully as possible, stating the conditions under which the malfunction occurred, and those under which it did not occur.  
像我们大多数人一样，我没有能力修理收音机和其他我日常生活中使用的物品。但是有些事情我可以做来帮助专家进行诊断。例如，当我担任航空俱乐部的维修官时，当收音机发生故障时，我可以做很多事情来帮助收音机专家。这些做法通常可以节省俱乐部的时间和金钱，因为否则修理人员将无法在昂贵的飞行测试中找到问题。重要的是，我尽可能详细地描述问题，说明故障发生的条件以及未发生故障的条件。

One time a navigational radio needle became inoperative during a trip. To keep down costs, we needed to provide the radio repairer with more information than that. We determined and recorded the temperature, the altitude, and the location and fre­quency of the signal source, and tried both to reproduce the problem and to find out when it did not occur. In this case, when we experimented with it on the trip, the problem seemed to occur with every frequency ending in .9, and did not occur with any other frequency. This was very helpful information because the fact that it workedon all other frequencies enabled the repairer to eliminate a large number of hypothe­ses; and the fact that the radio did not work on the frequencies ending with .9 sug­gested to him a few hypotheses that he was then able to narrow down to one by fur­ther tests. This experimenting on our part was virtually at no cost because the airplane was flying anyway on its return home. (In modern aircraft, there are generally a num­ber of alternate sources of the same navigation information; flying was safe in the pre­vailing weather conditions.)

Principles of Diagnosis and Troubleshooting

­responds to a hypothesis that explains the malfunction. Ruling out hypotheses nar­rows down the field of possibilities.Although the particular strategy in diagnosis and troubleshooting depends on the facts of the situation and the expense involved, there are some general principles that fit into the hypothesis-testing approaches described earlier. Each possible cause corresponds to a hypothesis that explains the malfunction. Ruling out hypotheses narrows down the field of possibilities.  
有一次，在旅途中，导航无线电指针失效了。为了降低成本，我们需要向无线电维修人员提供更多的信息。我们确定并记录了温度、高度、信号源的位置和频率，并尝试重现问题，并找出问题不发生的时候。在这种情况下，当我们在旅途中进行实验时，问题似乎发生在以.9结尾的每个频率上，而在其他频率上则没有发生。这些信息非常有帮助，因为它工作在其他频率上的事实使维修人员能够排除大量的假设；而无线电在以.9结尾的频率上无法工作则向他提出了一些假设，他通过进一步的测试将其缩小到一个。我们的实验几乎没有成本，因为飞机无论如何都在返回家的途中飞行。（在现代飞机上，通常有多个相同导航信息的备用来源；在当前的天气条件下，飞行是安全的。）诊断和故障排除原则虽然诊断和故障排除中的具体策略取决于情况和涉及的费用，但有一些通用原则适用于前面描述的假设测试方法。每个可能的原因都对应着解释故障的假设。排除假设可以缩小可能性的范围。

1. Be well-informed.  
   了解清楚。
2. Do not assume that new parts always work.  
   不要假设新零件总是有效的。
3. If the symptoms are always associated with one cause, and you remember this, possibly you are in luck. Check this one if testing is inexpensive. But if this does not solve the problem, go on to the next step.  
   如果症状总是与一个原因相关，并且您记住了这一点，那么您可能很幸运。如果测试不贵，请检查这个原因。但如果这不能解决问题，请继续下一步。
4. Identify as many possible causes of the problem as you can. Each possible cause has an associated hypothesis: namely, that it is the cause of the problem.  
   尽可能确定问题的多种可能原因。每个可能的原因都有一个相关的假设：即它是问题的原因。
5. ­ally picking the most likely ones first (this choice requires expertise). When one and only one hypothesis remains, it probably represents the cause, if it was probable that you identified them all in the first place. Check it, though.Try to eliminate as many of the associated hypotheses as you can, generally picking the most likely ones first (this choice requires expertise). When one and only one hypothesis remains, it probably represents the cause, if it was probable that you identified them all in the first place. Check it, though.  
   尽量排除尽可能多的相关假设，通常首先选择最有可能的假设（这需要专业知识）。当只剩下一个假设时，它很可能代表了原因，如果你在一开始就有可能识别出它们的话。不过还是要进行检查。
6. To the extent that testing is expensive, try to eliminate as many likelv hypotheses as possible with each test. If you have the expertise, select the most likely subsystem first, given your understanding of the functioning of the system. However, if testing the most likely one is much more expensive than testing a less likely one, you must strike a balance.  
   在测试成本高昂的情况下，尽量通过每次测试消除尽可能多的可能性假设。如果您具备专业知识，请根据对系统功能的理解，首先选择最有可能的子系统。然而，如果测试最有可能的子系统比测试一个不太可能的子系统要昂贵得多，您必须取得平衡。
7. ­tory, this conservative vary-one-thing-at-a-time testing strategy is also appropriate.If the problem does not have a definite set of known possible causes, then narrow down the problem to a particular sequence or area, study it, and try to come up with some further hypotheses. Vary things one at a time to test these hypotheses. When you are operating in unfamiliar territory, this conservative vary-one-thing-at-a-time testing strategy is also appropriate.  
   如果问题没有明确的已知可能原因集合，则将问题缩小到特定的序列或区域，进行研究，并尝试提出进一步的假设。逐一变化以测试这些假设。当您在陌生领域操作时，这种保守的逐一变化测试策略也是适用的。
8. When turning over the problem to a maintenance person, provide details about the situation, and specify the conditions under which the problem appeared. If possible, also identify the type of conditions under which the problem regularly appears and the conditions under which it does not appear.  
   将问题交给维护人员时，请提供有关情况的详细信息，并指明问题出现的条件。如果可能的话，还要确定问题经常出现的条件和不出现的条件。
9. Check every conclusion you draw with some kind of test.  
   用某种测试来验证你所得出的每个结论。

Do not memorize these principles. Understand them and practice applying them.   
不要死记硬背这些原则。理解它们并实践应用。

Implicit in the application of these principles to the situations I described (and others as well) are the elements of the FRISCO approach. The question, “What is the defect?,” and the hypothesis, “The fourth battery is bad,” provided the foci (F) at different stages in the investigation. The reasons (R) included the facts that Z did not work when a particular battery was in it, but did work when the battery was replaced. An alternative hypothesis was that the bulb was bad, but that was refuted (/) by its working when the batteries were replaced. Criteria of inference (7) that I used were the criteria of hypothesis testing (presented earlier in this chapter). An assumption made in testing complex and expensive-to-test systems is that if a whole sequence of components works well, then each is all right. This assumption also bears on inference (∕). Important situational (S) factors included the expense and time involved in doing tests and the extent to which the possible causes of a particular kind of malfunction are known. There was no particular problem with clarity (C) in these cases, although it was important for me in reporting to the radio repairer to know the meaning of a number of key terms such as frequency and omni. Lastly, the overview (0) process consisted of checking over my thinking and the evidence.  
这些原则在我描述的情况（以及其他情况）中的应用中隐含了FRISCO方法的要素。问题是，“缺陷是什么？”，假设是，“第四个电池坏了”，提供了调查不同阶段的焦点（F）。原因（R）包括当一个特定的电池放入时，Z不工作，但当电池更换后，Z工作了。另一种假设是灯泡坏了，但是当电池更换时，这个假设被证伪（/）。我使用的推理标准（7）是假设检验的标准（在本章前面介绍过）。在测试复杂且昂贵的系统时，假设是如果整个组件序列工作正常，那么每个组件都是正常的。这个假设也涉及推理（∕）。重要的情境（S）因素包括测试所涉及的费用和时间，以及已知某种故障可能原因的程度。在这些情况下，清晰度（C）没有特别的问题，尽管对我来说，了解一些关键术语的含义，如频率和全向，对向无线电修理师报告很重要。最后，概述（0）过程包括检查我的思考和证据。­ferent stages in the investigation. The reasons (R) included the facts that Z did not work when a particular battery was in it, but did work when the battery was replaced. An alternative hypothesis was that the bulb was bad, but that was refuted (/) by its working when the batteries were replaced. Criteria of inference (7) that I used were the criteria of hypothesis testing (presented earlier in this chapter). An assumption made in testing complex and expensive-to-test systems is that if a whole sequence of components works well, then each is all right. This assumption also bears on infer­ence (∕). Important situational (S) factors included the expense and time involved in doing tests and the extent to which the possible causes of a particular kind of mal­function are known. There was no particular problem with clarity (C) in these cases, although it was important for me in reporting to the radio repairer to know the meaning of a number of key terms such as

Summary and Comment  
摘要和评论

*Diagnosis, or troubleshooting, is an activity that has the goal of finding out what is wrong with something that malfunctions. The basic strategy is to eliminate hypotheses that identify possible causes of the problem, to be methodical about this, and to check the results. To the extent that the possible causes are known and to the extent that testing is costly in time or money, methods should be used that are likely to rule out a large number of hypotheses at each test. To the extent that we know few of the possible causes, a more conservative vary-one-thing-at-a-time strategy is appropriate. If we have good reason to believe that one and only one thing can cause the symptom of the kind reported, select that. But check it out.  
诊断，或故障排除，是一种旨在找出出现故障的事物出了什么问题的活动。基本策略是排除可能导致问题的假设，对此要有方法论，并检查结果。在已知可能原因的程度和测试耗时或金钱的程度上，应使用能够在每次测试中排除大量假设的方法。在我们了解可能原因很少的情况下，更保守的逐一变动策略是适当的。如果我们有充分理由相信只有一件事物能够引起所报告的症状，选择它。但要进行检查。*­ses that identify possible causes of the problem, to be methodical about this, and to check the results. To the extent that the possible causes are known and to the extent that testing is costly in time or money, methods should be used that are likely to rule out a large number ­tom

Diagnosis and troubleshooting fit under the FRISCO approach to reasoning and investigation. All the elements are involved, as are all the critical thinking dispositions, especially the dispositions to take into account the total situation, to try to be well-informed, to look for alternatives, to endorse a position only to the extent that it is justified by the information available.  
诊断和故障排除属于FRISCO方法的推理和调查范畴。所有要素都涉及其中，所有批判性思维倾向也都涵盖其中，尤其是考虑整体情况、努力获取充分信息、寻找替代方案、仅在信息可靠的情况下支持某个立场的倾向。­sitions, especially

Check-Up 8E

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**8:40 The reasoning involved in diagnosis or troubleshooting is basically that of hypothesis testing.  
8:40 诊断或故障排除所涉及的推理基本上是假设测试的过程。**

**8:41 In troubleshooting, it is sometimes a good idea to vary more than one thing at a time.  
在故障排除中，有时候同时改变多个因素是个不错的主意。**

**8:42 Because you might be wrong about it, it is generally best not to provide maintenance people with a description of conditions under which the malfunction regularly appears, and those under which it regularly does not appear. At most, you should tell what it is that is bothering you.   
8:42 因为你可能对此有误解，所以通常最好不要向维修人员提供故障定期出现的条件描述，以及定期不出现的条件描述。最多，你只需要告诉他们你所困扰的是什么。**

**8:43 In efficient diagnosis and troubleshooting (testing a number of components at once), the following assumption is generally made: If a connected set of components functions correctly, then each individual component is probably all right.  
8:43 在高效的诊断和故障排除中（同时测试多个组件），通常做出以下假设：如果一个连接的组件集合正常工作，则每个单独的组件可能都是正常的。**­ponents at once), the following assumption is generally made: If a connected set of components functions correctly, then each individual component is probably all right.

Medium Answer  
中等答案

**8:44 Suppose you have an eight-battery flashlight that is inoperative and that you have determined by putting the batteries in an otherwise functioning flashlight that the problem is with the batteries. Also suppose that it is very easy and quick to test individual batteries. The batteries in the flashlight are in series, that is, the operation of each is a necessary condition for the operation of the set. Describe an appropriate strategy to locate the problem.  
假设你有一个无法运作的八电池手电筒，并且你已经通过将电池放入一个正常运作的手电筒来确定问题出在电池上。还假设测试单个电池非常容易和快速。手电筒中的电池是串联的，也就是说，每个电池的运作对整个组合的运作是必要条件。描述一个适当的策略来找到问题所在。**­pose that it is very easy and quick to test individual batteries. The bat­teries in the flashlight are in series, that is, the operation of each is a necessary condition for the operation of the set. Describe an appropri­ate strategy to locate the problem.

**8:45 Suppose that it suddenly has become very expensive to test batteries and that you have the same problem as in 8:44. Describe an efficient strategy, assuming that only one battery is bad.  
8:45 假设测试电池的费用突然变得非常昂贵，并且您面临与8:44相同的问题。描述一种高效的策略，假设只有一个电池是坏的。**

**8:46 Now suppose that a four-battery flashlight has been bouncing around in the trunk of a car for two years and is inoperative when you discover it. You want to get it working again because, as you remember it, it is basically a good flashlight. You are reluctant to take it to a repair shop because the repair shop would charge more than the cost of a new one. You have a battery tester and a circuit tester (a device to tell whether electricity will readily flow from one point to another). You also have an identical flashlight that works well. Describe in detail the steps you would take to troubleshoot and fix the inoperative flashlight. Take the process as far as you can. Explain why you do what you do.  
8:46 现在假设一个四节电池的手电筒在车的后备箱里跳来跳去已经两年了，当你发现它时它已经无法工作。你想要让它重新工作，因为你记得它基本上是一个好的手电筒。你不愿意把它拿到修理店修理，因为修理店的费用会比买一个新的还要高。你有一个电池测试器和一个电路测试器（一个用来判断电流是否能够从一个点流向另一个点的设备）。你还有一个工作正常的相同型号的手电筒。请详细描述你会采取哪些步骤来排除故障并修复这个无法工作的手电筒。尽可能详细地解释你为什么要这样做。**

Longer Answer  
更长的答案

**8:47** Describe a challenging diagnosis or troubleshooting situation in which you have been involved. Assuming that your audience is the member­ship of this class, describe and appraise in writing what you did, and what others did, if others were involved. Be prepared to tell the class about it orally. If there are any features of the situation or mechanism you are troubleshooting that are likely to be unfamiliar to the members of the class, be sure to include an account of how these things work

Brain Teaser

**8:48** A troubleshooting brain teaser for a rainy weekend: Suppose you have twelve pennies, eleven of which weigh the same, and one of which is off-weight, weighing either more or less than each of the others, but you do not know which. You also have a balance scale, on each side of which can be placed one or more pennies. The scale will show whether the weight on one side is equal to I hat on the other, or, if one side is heavier, will show which side is heavier. That is all the scale can do. It cannot be used to read weights. Suppose that it is very expensive to operate balance scales. Describe how to identify the off-penny effi­ciently, and to tell whether it is heavier or lighter than each of the oth­ers. Unfortunately, the difference in weight is too small for you to

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8:47 描述一个你参与过的具有挑战性的诊断或故障排除情况。假设你的听众是这个班级的成员，请书面描述并评估你所做的事情，以及其他人所做的事情（如果其他人参与其中）。准备好口头告诉班级。如果情况或机制的某些特征对于班级成员来说可能不熟悉，请确保包括这些事物如何工作的说明。 Brain Teaser8:48 一个适合在一个雨天周末解决的难题：假设你有十二个一分硬币，其中十一个重量相同，另一个重量不同，比其他硬币重或轻，但你不知道哪个。你还有一个天平，每一边都可以放置一个或多个硬币。天平会显示一边的重量是否等于另一边的重量，或者如果一边更重，会显示哪一边更重。这就是天平的全部功能。它不能用来读取重量。请描述如何高效地识别出不同重量的硬币，并判断它是比其他硬币更重还是更轻。不幸的是，重量的差异对你来说太小，无法进行实验、诊断和故障排除。**

•» —

detect in any way but with this balance scale. If you can do this in three balancings, you are eligible for a Master General-Troubleshooter Efficiency Aw ard.  
以这个天平来检测，但不能用其他方法。如果你能在三次称重中完成，你就有资格获得总体问题解决高手效率奖。

Writing About Your Results  
写关于您的结果

In writing about the results of your experimental, diagnostic, or troubleshooting work, the primary question to consider is “How will this report be most useful to the reader of this report (who might in fact be you, later on)?” The report should contain the information the reader needs to know in making future decisions.  
在撰写关于实验、诊断或故障排除工作结果的报告时，首要考虑的问题是这份报告对于读者（实际上可能是你自己，以后）来说最有用的是什么？报告应包含读者在未来决策中需要了解的信息。­tain the information the reader needs to know in making future decisions.

Reports About Experiments  
实验报告

Experiments are usually conducted in order to develop knowledge about a topic, such as knowledge about the nature of meat spoilage and ways to prevent it, or knowledge about the factors that affect the learning of critical thinking. Although standard forms for such reports vary from field to field, certain sorts of things generally should appear in such reports. These include the identification of the question or hypothesis, including definitions of key terms; a discussion of the significance of the question or hypothesis; a review of prior work in the area, on which the experimental results should build; a description of the procedures used, including methods of measurement if these are not obvious; a report of results; a discussion of the results, including their bearing on the hypothesis and the question, and including your conclusion; suggestions for further research; and an abstract, which generally appears at the beginning. When you write a report of your experiment, these items might provide an outline and be useful as subheadings, but they should be adjusted to fit the field of your work and the likely interests of your reading audience.  
实验通常是为了开发关于一个主题的知识而进行的，比如关于肉类变质的性质和预防方法的知识，或者关于影响批判性思维学习的因素的知识。尽管这类报告的标准形式因领域而异，但通常应包含某些内容。这些内容包括问题或假设的确定，包括关键术语的定义；对问题或假设重要性的讨论；对该领域先前工作的回顾，这些工作是实验结果应该建立在其基础上的；描述所使用的程序，包括如果这些程序不明显的测量方法；结果的报告；对结果的讨论，包括对假设和问题的影响，以及你的结论；进一步研究的建议；以及摘要，通常出现在开头。当你写实验报告时，这些项目可能提供一个大纲，并且作为副标题很有用，但它们应根据你的工作领域和读者的可能兴趣进行调整。­ally ­tal results ­clusion; suggestions ­vide an outline

It is important to prepare a written report of some kind. Otherwise, the work is likely to be lost. Even the results of the experimenting you do for your own interests are likely to be at least partially lost, even to you. Most people cannot keep such things fully in their memories.  
准备一份书面报告是很重要的。否则，工作很可能会丢失。即使是你为自己的兴趣进行的实验结果，也很可能至少部分丢失，即使对你来说也是如此。大多数人无法完全记住这些事情。­ests are

Because actual report organization justifiably differs in format from field to field, I cannot provide much more general advice, but do urge you to read a number of reports in your field before you write yours. Perhaps you will want to make some changes in the standard form for the field. This is best approached from a knowledge of standard practices and their strengths and weaknesses.  
由于实际报告的组织形式因领域而异，我无法提供更多的一般建议，但我建议您在撰写报告之前阅读一些您领域内的报告。也许您会想要对该领域的标准形式进行一些修改。这最好是基于对标准实践及其优点和缺点的了解来进行。

Reporting the Results of  
报告结果

Diagnosis and Troubleshooting  
诊断和故障排除

Reports of results of troubleshooting tend to be much shorter than reports of experiments, perhaps because the results are usually of interest to a much smaller audience, perhaps only the person whose body is being diagnosed or whose mechanism is the object of the troubleshooting. The results usually do not have general application, but there usually should still be a report when the results are significant, as in the repair of a car or the diagnosis and treatment of cancer. Such a report helps us to handle recurrences of the symptoms and to assess the adequacy of the treatment or repaiι.  
故障排除结果的报告往往比实验报告要短得多，可能是因为结果通常只对一个更小的受众感兴趣，可能只有那些身体正在被诊断或机制正在被排除故障的人。这些结果通常没有普遍适用性，但当结果显著时，通常仍应有一份报告，例如汽车维修或癌症的诊断和治疗。这样的报告有助于我们处理症状的复发，并评估治疗或修复的适当性。­­

Such reports always should describe the remedial action taken, if any, such as “Filter #3045 replaced” or “Methocarbomyl prescribed.” It is also desirable that tests be administered and their results described. The dates of the tests and the remedial action are essential. Description of the original symptoms is also important so that others can assess the appropriateness of the tests and can check on the diagnosis. Can you think of any other essential items?  
这样的报告应该始终描述采取的补救措施，如果有的话，比如更换过滤器#3045或者开具甲氧卡巴肟处方。还应该进行测试并描述其结果，这是可取的。测试和补救措施的日期是必要的。还应该描述原始症状，以便他人可以评估测试的适当性并检查诊断。你能想到其他必要的项目吗？

Check-Up 8F

**Longer Answer  
更长的答案**

**8:49 Write a report of the results of an experiment, preferably one you have done. Describe your intended audience. Use the subheadings suggested in the text, unless you have good reason to do it differently.  
8:49 写一份实验结果报告，最好是你自己做过的。描述你的目标读者。使用文本中建议的副标题，除非你有充分的理由做出不同的安排。**­gested in the text, unless you have good reason to do it differently.

**8:50 Write up the results of some troubleshooting or diagnosis you have done. Describe your audience and the situation. Cover the topics mentioned in the text, unless you have good reason to do it differently. If feasible, assume that you are doing it for pay and submit a bill that justifies your charge, probably combining your report and your justification of your charges.  
8:50 写下你所做的一些故障排除或诊断结果。描述你的受众和情况。涵盖文本中提到的主题，除非你有充分的理由做出不同的处理。如果可行，假设你是为了报酬而进行此项工作，并提交一份能够证明你费用合理性的账单，可能需要结合你的报告和费用的辩解。**­tioned in the text, unless you have good reason to do it differently. If feasible, assume that you are doing it for pay and submit a bill that jus­tifies your charge, probably combining your report and your justifica­tion of your charges.

Chapter Summary  
章节摘要

In reasoning about experiments, we make assumptions of at least two kinds. One is that the experiment was done carefully and well. An assumption about comparability is of this kind. The other kind of assumption in reasoning about experiments involves the way things happen. Even though there is not a sharp line between the two kinds of assumptions, it is helpful to ask yourself about each. Because of the assumptions inevitably made in drawing a conclusion from an investigation, it is important that we be familiar with the subject matter of the investigation.  
在对实验进行推理时，我们做出至少两种假设。一种是实验被仔细而完善地进行了。关于可比性的假设属于这一类。在对实验进行推理时，另一种假设涉及事物发生的方式。尽管这两种假设之间没有明显的界限，但对每种假设进行自我询问是有帮助的。由于在从调查中得出结论时不可避免地做出了假设，因此我们对调查的主题应该很熟悉是很重要的。

­junction, which produces a denial of the hypothesis but depends on the acceptance of the assumptions.In simplified form, the reasoning to reject a hypothesis is deductive and has two steps: a denying-thc-consequent step, which produces a denial of the conjunction of a hypothesis and a set of assumptions; and a step affirming one part of a denied conjunction, which produces a denial of the hypothesis but depends on the acceptance of the assumptions.  
在简化形式中，拒绝一个假设的推理是演绎的，并且有两个步骤：否定-因果步骤，它产生了对假设和一组假设的否定的连接的否定；以及肯定一个被否定的连接的一部分的步骤，它产生了对假设的否定，但依赖于对假设的接受。

­ria; the first three are ideal necessary conditions, the fourth a desirable condition:The reasoning to accept a hypothesis should adhere to the following four criteria; the first three are ideal necessary conditions, the fourth a desirable condition:  
接受一个假设的推理应遵循以下四个标准；前三个是理想的必要条件，第四个是可取的条件。

1. The hypothesis should explain some facts, given reasonable assumptions.  
   假设应该解释一些事实，假设合理的前提条件。
2. ­sonable assumptions.Other possible explanations should be inconsistent with facts, given reasonable assumptions.  
   其他可能的解释应该与事实不一致，基于合理的假设。
3. ­able assumptions.The hypothesis should not be inconsistent with any facts, given reasonable assumptions.  
   假设不应与任何事实不一致，假设合理的前提条件。
4. The hypothesis should be plausible.  
   假设应该是合理的。

­Overwhelming satisfaction of these criteria (assuming that we have made a strong effort to develop plausible alternative hypotheses) gives us proof beyond a rea sonable doubt. If an alternative plausible hypothesis remains, then we should not endorse the original hypothesis.  
这些标准的压倒性满足（假设我们已经努力发展了合理的替代假设）使我们有了超出合理怀疑的证据。如果仍然存在一个合理的替代假设，那么我们不应该支持原始假设。

Generalizing from the results of a few experiments to a large population is a topic reserved for the next chapter. However, representativeness is an important consideration.  
从一些实验的结果推广到大规模人口是下一章的内容。然而，代表性是一个重要的考虑因素。

In planning and executing an experimental investigation, we should control the variables to the extent that this is feasible. Generally this means the following: The variable or variables that are not being deliberately varied to see their effect should be held constant. One way to make sure that the groups start out the same is to assign members at random to the experimental and control groups. Other ways of ensuring comparability are often needed because random assignment is in many situations not achievable. It the experiment compares something with the same thing at another time, given the introduction of one (or perhaps more) experimental variables, then the other variables should be held constant from one observation to the next.  
在规划和执行实验调查时，我们应尽可能控制变量。一般来说，这意味着以下几点：没有被有意改变以观察其效果的变量应保持不变。确保两组起始状态相同的一种方法是将成员随机分配到实验组和对照组。由于在许多情况下无法实现随机分配，通常需要其他方法来确保可比性。如果实验比较的是同一事物在另一个时间点，并引入了一个（或多个）实验变量，那么其他变量应该在每次观察中保持不变。

Controlling the variables has the function of ruling out alternative hypotheses (that is, satisfying criterion #2). If there is no other difference between two groups being compared, then alternative hypotheses that require such differences are ruled out.  
控制变量的作用是排除替代假设（即满足准则#2）。如果比较的两组之间没有其他差异，那么需要这些差异的替代假设就被排除了。

Diagnosis, or troubleshooting, is an activity that has the goal of finding out what is wrong with some body or piece of equipment that malfunctions. Hypothesis testing reasoning applies to diagnosis and troubleshooting, but practical concerns such as expense and time are important. To the extent that the malfunction has a definite number of possible causes, we can be efficient in testing (and save money, if testing is expensive) by checking a combination of components all together. To the extent that we are not sure of the possible causes, a vary-one-thing-at-a-time strategy is generally appropriate. The basic strategy is to rule out more and more possible causes of the malfunction, that is, to rule out hypotheses.  
诊断或故障排除是一种旨在找出身体或设备故障的问题的活动。诊断和故障排除应用假设测试推理，但实际关注点如费用和时间也很重要。在故障具有明确可能原因的程度上，我们可以通过一起检查一组组件来进行高效测试（如果测试费用昂贵，则可以节省金钱）。在我们不确定可能原因的程度上，逐一变化一件事的策略通常是合适的。基本策略是逐渐排除更多可能引起故障的原因，也就是排除假设。­inite ­ing is

When someone else is diagnosing or troubleshooting on our behalf, it is good to be able to provide that person with a description of the conditions under which the malfunction occurred, and even better to provide the conditions under which it regularlv occurs and those under which it regularly does not occur. This enables the person more effectively to rule out alternate hypotheses. In any case, a methodical procedure and a check of the results are essential.  
当其他人代表我们进行诊断或故障排除时，能够向该人提供故障发生的条件描述是很好的，甚至能够提供故障经常发生和不发生的条件更好。这使得该人能更有效地排除其他假设。无论如何，方法论的步骤和结果的检查是必不可少的。

All the elements of the FRISCO approach apply to experimental reasoning, diagnosis, and troubleshooting. Assumption identification and application of hypothesistesting criteria can fit into the I. The application of observation and credibility-of- sources criteria fits into the R of the FRISCO approach. The situation (S), clarity (C), focus (F), and overview (O) are also essential.  
FRISCO方法的所有要素都适用于实验推理、诊断和故障排除。假设识别和应用假设测试标准可以适应I。观察和来源可信度标准的应用适用于FRISCO方法的R。情境（S）、清晰度（C）、焦点（F）和概述（O）也是必不可少的。­nosis, ­

­shooting, focus on what your audience needs to know. When you report the results of your experimentation, diagnosis, or troubleshooting, focus on what your audience needs to know. Follow the standard format for the field unless you have good reason to do otherwise, but in any case, be clear.  
当您报告实验、诊断或故障排除的结果时，请关注您的受众需要了解的内容。除非您有充分的理由，否则请遵循该领域的标准格式，但无论如何，请保持清晰明了。

Suggested Answers for Chapter 8  
第8章的建议答案

**Check-Up 8A**

8:1 F 8:2 T 8:3 T 8:4 T

**8:1 The control group is the group not exposed to the experimental factors, but supposedly otherwise the same as the experimental group.   
8:1 对照组是未暴露于实验因素的组，但在其他方面应该与实验组相同。**­

8:5 a. The seeds in the empty dry open jar.  
8:5 a. 空的干燥开放罐中的种子。

1. Not very good, but not terrible either, assuming a student with a level of sophistication for which the experiment would be interesting. One difficulty was that the student did not avoid contamination of the earth with another possible factor, water. Some other difficulties are that only one source of earth was used, which might have been special, and that only one bottle and location were used, possibly also special. Furthermore, we have no assurance that the bottles were clean. But the control group did receive roughly the same treatment as the experimental group, except for what he assumed was the pure experimental treatment. The use of a control group is for many people a great step forward.  
   不是很好，但也不是很糟糕，假设一个具有足够复杂程度以使实验有趣的学生。一个困难是学生没有避免地球被另一个可能的因素——水——污染。还有一些困难，比如只使用了一个地球样本，可能是特殊的，只使用了一个瓶子和一个位置，可能也是特殊的。此外，我们不能保证瓶子是干净的。但对照组接受了与实验组大致相同的处理，除了他认为是纯实验处理的部分。对照组的使用对许多人来说是一个重要的进步。­­

8:6 a. The heating of the soil ruined its seed germinating power.  
8:6 a. 土壤的加热破坏了其种子发芽能力。

1. Fairly good at an elementary level. She did separate the soil and moisture variables, something that was not done in the previous experiment. But she did not secure samples of soil and water from different sources, so the result might have been attributable to the peculiarities of the water and soil used. She also did not guard against the hypothesis in a,.  
   在初级水平上相当不错。她确实分离了土壤和湿度变量，这在之前的实验中没有做过。但她没有从不同的来源获取土壤和水样本，所以结果可能归因于使用的水和土壤的特殊性。她也没有防范假设 a 的情况。
2. Do a similar experiment, but use a variety of sources of soil and water and add another set of seeds to be planted in soils that are heated the same way and then wet again.  
   做一个类似的实验，但使用多种土壤和水源，并在以相同方式加热后再次浇水后再种植另一组种子。

8:7 a. The first ten caught might be the weakest.  
8:7 a. 前十个被捕的可能是最弱的。

1. That there was a cancer-producing substance accidentally available to the experimental rats during the Ultralight treatment, and it was eaten by them.  
   在超轻治疗期间，实验鼠无意中接触到了一种致癌物质，并被其食用。
2. If they had used just two rats, the experimental rat might have been going to get cancer anyway, just by chance.  
   如果他们只使用了两只老鼠，实验老鼠可能本来就有机会患上癌症，只是偶然的机会。
3. ­tracted cancer, but there had been no control group, then any number of other things that also happened to the experimental rats might have caused the cancer. For example, the food they ate might have been cancer-producing.If all twenty rats had been exposed to Ultralight and had contracted cancer, but there had been no control group, then any number of other things that also happened to the experimental rats might have caused the cancer. For example, the food they ate might have been cancer-producing.  
   如果所有二十只老鼠都接触到了超轻并且患上了癌症，但没有设置对照组，那么实验老鼠可能发生癌症的原因可能是其他很多事情造成的。例如，它们吃的食物可能是致癌的。
4. ­tal and control groups, equal treatment of experimental and con­trol groups (except for the experimental condition), and a fairly good number of subjects.Yes, it is fairly good. There was random assignment to experimental and control groups, equal treatment of experimental and control groups (except for the experimental condition), and a fairly good number of subjects.  
   是的，它相当不错。对实验组和对照组进行了随机分配，对实验组和对照组进行了相同的处理（除了实验条件），而且受试者数量相当不错。

8:8 a. That the students in the first class presured their parents to go to the game.  
8:8 a. 第一班的学生们向他们的父母施加压力去看比赛。

1. No. There were too many alternative explanations of the results.  
   没有。对结果有太多的替代解释。
2. Yes. Two suggestions: Do a survev of the two classes’ parents’ attendance before she began distributing the information about the team, in order to check the initial comparability of the experi­mental and control groups. Secure the information directly from the parents. (Perhaps the students were just trying to please her.)

**8:9 Deliberately not included.  
是的。两个建议：在她开始分发关于团队的信息之前，对两个班级的家长出席情况进行调查，以检查实验组和对照组的初始可比性。直接向家长获取信息。（也许学生只是想取悦她。） 8:9故意未包括。**

**8:10 Check yourself: Be attentive to comparability of experimental and control groups, to seeing to it that the groups receive the intended treatments only, and to minimizing the possibility of plausible alternative explanations of the results.  
8:10 检查自己：注意实验组和对照组的可比性，确保组别只接受预期的处理，并尽量减少结果可能存在合理替代解释的可能性。**­trol groups, to seeing to it that the groups receive the intended treat­ments only, and to minimizing the possibility of plausible alternative explanations of the results.

**Check-Up 8B**

8:11 F 8:12 F 8:13 T 8:14 F 8:15 F

8:11 A dependent variable is one the investigator observes to see the effect, if any, of varying the independent variable.  
8:11 一个依赖变量是研究者观察以查看独立变量变化的效果（如果有的话）的变量。

**8:12 Change certain to likely.  
8:12 将 certain 改为 likely。**

**8:14 One advantage of control-group experimentation is that it usually is able to rule out time-related explanation factors.  
8:14 控制组实验的一个优点是通常能排除与时间相关的解释因素。**

**8:15 “is very important, even if. . . .”  
8:15非常重要，即使...**

**8,16 F: The conclusion is, “Triple-X Fuel Miser saves fuel.”  
结论是，Triple-X燃油节省器节省燃料。**

R: The first four sentences arc the reasons. We are assuming them to be true, but if the source is selling Triple-X Fuel Miser, there is at least some ground for suspicion of the evidence.  
R: 前四个句子是原因。我们假设它们是真实的，但如果信息源销售Triple-X Fuel Miser，那么对证据存在一些怀疑的理由。

I: Some alternatives that occur to me are these:  
我：我想到的一些替代方案是这些：

He took a long trip after adding Triplc-X Fuel Miser, whereas all previous mileage determinations were based on local driving.  
他在加入Triplc-X燃油节能剂后进行了一次长途旅行，而之前的里程测算都是基于本地驾驶的。­

The carburetor suddenly started to function better.  
化油器突然开始运转更好。

He failed to fill the tank last time.  
他上次没有加满油箱。

So, I do not feel that the conclusion is established. The other possible explanations are not ruled out and are plausible possibilities.  
所以，我不觉得结论已经确立。其他可能的解释没有被排除，而且是可行的可能性。

S: The situation is insufficiently described. There is no way I can tell whether the narrator has a conflict of interest. I do not know why the narrator is giving us this information. And I do not know who might have been monitoring the experiment. However, I have some relevant information about the situation: If there were a fuel additive that could make a significant difference, then I would expect the automobile companies to make a fuss about its not being in the fuel in the first place. It is in the interest of the automobile companies for gasoline mileage to be good. But they have not made a fuss. So the proposed conclusion is inconsistent with this information about automobile companies’ motivation.  
S：情况描述不足。我无法判断叙述者是否存在利益冲突。我不知道叙述者为什么向我们提供这些信息。我也不知道谁可能一直在监控这个实验。然而，我对这个情况有一些相关的信息：如果有一种燃料添加剂可以产生显著的差异，那么我会期望汽车公司首先对其不在燃料中进行大肆宣传。对汽车公司来说，汽油的里程数好是符合他们的利益的。但他们没有大肆宣传。因此，根据关于汽车公司动机的这些信息，所提出的结论与之不一致。­­

C: The words seem clear.  
这些词似乎很清楚。

O: After review I still feel that the first alternative hypothesis is such a plausible possibility that I should not accept the conclusion.  
经过审查，我仍然觉得第一个备选假设是一个合理的可能性，所以我不应该接受这个结论。

**8:17 Deliberately not included.  
8:17 故意不包含。**

**8:18-8:20 Up to you.  
由你决定。**

**8:21 Omit one at a time (five tests). Results: C and D are necessary; A and B, and E not necessary. Try only C and D together (the sixth test). Result: C and D are not by themselves sufficient. Try C and D together with each of A, B, and E (three more tests, making nine in all). Result: CDA works, CDB works, CDE does not work. Conclusion: C and D are each necessary and C and D and either A or B are jointly sufficient. E is not a factor  
8:21 逐个省略（五个测试）。结果：C和D是必要的；A和B以及E不是必要的。仅尝试C和D一起（第六个测试）。结果：C和D本身不足够。尝试C和D与A、B和E中的每一个一起（另外三个测试，总共九个）。结果：CDA有效，CDB有效，CDE无效。结论：C和D各自是必要的，C和D以及A或B一起足够。E不是一个因素。**

**Check-Up 8C**

**8:22 F 8:23 T 8:24 T 8:25 T 8:26 F 8:27 F**

8:28 T

8:22 Random assignment of subjects is an assignment in which each has an equal chance of being in either group.  
8:22 随机分配受试者是一种分配方式，每个受试者被分到任何一组的机会相等。

**8:26 Change never to sometimes.  
8:26 改变从来不会到有时候。**

**8:27 Change should always be to is often best.  
8:27 改变应该总是是最好的。**

**8:29 and 8:30 Deliberately not included. Be sure to be attentive to the meaning of the conclusions (the C in FRISCO), especially for 8:30. Your evaluation will depend heavily on your interpretation.  
8:29和8:30故意未包括。务必注意结论（FRISCO中的C）的含义，特别是对于8:30。你的评估将严重依赖于你的解释。**­tion will depend heavily on your interpretation.

**Check-Up 8D**

8:31 T 8:32 F 8:33 F 8:34 T 8:35 T

**8:32 Omit more than two.  
8:32 忽略超过两个。**

**8:33 If the results turn out otherwise than predicted, then the hypothesis or one of the assumptions is probably false.  
8:33 如果结果与预测不符，则假设或其中一个假设可能是错误的。**

**8:36 a. One possibility: Differences in personalities of the teachers.  
8:36 a. 一个可能性：教师的个性差异。**

1. ­dents’ violence proneness.One possibility: Teacher personality differences did not affect students’ violence proneness.  
   一个可能性：教师个性差异不会影响学生的暴力倾向。
2. No, because the differences in the teachers’ personalities might well have accounted for the results, as might the differences in the way they handled the subject matter.  
   不，因为教师个性的差异可能会解释这些结果，以及他们处理教材的方式的差异。

**8:37 Deliberately not included.  
8:37 Deliberately not included.**

**8:38 I shall assume that the experimental group meat was not contaminated with poison after it was assigned to the flasks to be covered. If this and certain other assumptions are correct, and if spontaneous generation occurred in the control group, then there would have been maggots in the covered meat. But there were none. So it is not true both that the spontaneous generation occurred in the control group and that the assumptions are true. There is good reason to believe that the assumptions are true. Therefore, spontaneous generation did not occur in the control group.  
8:38 我将假设实验组的肉在分配到瓶子上盖好之后没有被毒药污染。如果这个假设和其他一些假设是正确的，而且如果在对照组中发生了自发生成，那么盖着的肉里应该有蛆。但是没有。所以在对照组中既没有发生自发生成，也没有假设是正确的。有充分的理由相信这些假设是正确的。因此，在对照组中没有发生自发生成。**­tions are true. Therefore, spontaneous generation did not occur in the control group.

**8:39 This one is yours.  
这个是你的。**

**Check-Up 8E**

8:40 T 8:41 T 8:42 F 8:43 T

**8:42 Change Because to Even though. Omit the first not. Change most to least.  
8:42 改为尽管。省略第一个不。将最多改为最少。**

**8:44 Identify all batteries by making two separate lines of batteries, or some other way. Put seven of the good batteries in the good flashlight, and check the ones from the bad group one at a time, being very careful to keep track of those that have been checked and found good, keeping them separate from those that have been checked and found bad. When finished, replace defective batteries with supposedly good ones, keeping track of the replacements, and check the whole group together.   
8:44 将所有电池分成两行，或者其他方式进行标识。将七个好的电池放入好的手电筒中，并逐个检查坏组中的电池，非常小心地记录已经检查并发现好的电池，将它们与已经检查并发现坏的电池分开。完成后，用被认为是好的电池替换有缺陷的电池，并记录替换情况，然后将整个组一起检查。**

­ies as before. Put four batteries known to be good in the functioning flashlight and add four batteries from the set containing one or more defective batteries. If the flashlight functions, put the tested batteries aside and label them 8:45 Here is one possible specific procedure: Identify each group of batteries as before. Put four batteries known to be good in the functioning flashlight and add four batteries from the set containing one or more defective batteries. If the flashlight functions, put the tested batteries aside and label them good or put them in a special place for good batteries; label the other tom as X batteries If the flashlight docs not function, label the four just tested batteries as X batteries.  
8:45 这里有一个可能的具体步骤：像之前一样，识别每组电池。将四节已知好的电池放入正常工作的手电筒中，并从包含一节或多节有缺陷的电池的组合中添加四节电池。如果手电筒正常工作，将测试过的电池放在一边，并标记为好或放在专门放好电池的地方；将其他的标记为X电池。如果手电筒不工作，将刚刚测试过的四节电池标记为X电池。­teries; label the other tom as X batteries If the flashlight docs not function, label the four just tested batteries as

Now test the X set by taking two of its members and putting them in the functioning flashlight together with six batteries known to be good. It the flashlight functions, label these two good or put them in the special place for good batteries, labeling the other two as T batteries. If the flashlight does not function, label these two just-tested batteries as T batteries. We now know that the defective battery is in the T set.  
现在测试X集合，将其中两个成员与六节已知为好的电池放入功能正常的手电筒中。如果手电筒正常工作，请将这两个电池标记为好电池，或将它们放入专门用于好电池的位置，并将另外两个电池标记为T电池。如果手电筒不工作，请将这两个刚测试的电池标记为T电池。现在我们知道有问题的电池在T集合中。

Now with seven good batteries in the functioning flashlight, test one of the Y batteries. If the flashlight functions, then the other T battery is the defective one. If the flashlight does not function, then this T battery is the defective one. We have now located the defective battery with three tests. We should then test the total set with the defective one replaced, just to be sure. That makes four tests.  
现在，将七个好电池放入正常工作的手电筒中，测试其中一个Y电池。如果手电筒正常工作，则另一个T电池是有问题的。如果手电筒不工作，则这个T电池是有问题的。通过三次测试，我们已经找到了有问题的电池。为了确保，我们应该用有问题的电池替换掉整套电池，再进行一次测试。这样总共进行了四次测试。

8:46 There are a number of ways to troubleshoot a flashlight like this, but here is an overall scheme that would guide me. First, I would shake die inoperative flashlight (F) to see whether die whole system could function. If it works, this would be an efficient quick test of the bulb, all die batteries, and the integrity of much of the system, narrowing down the problem to a loose connection somewhere.  
8:46 有很多方法可以排除这样的手电筒问题，但这是一个总体方案，可以指导我。首先，我会摇晃这个不工作的手电筒（F）来看整个系统是否能够正常工作。如果它能工作，这将是一个高效的快速测试，可以测试灯泡、所有电池以及系统的大部分完整性，从而将问题缩小到某个松动的连接。

*Butteries. If F does not work, I would try all the batteries from F in rhe flashlight that does work (Z). If Z works, then I have eliminated four possible causes (the four batteries) of the problem. If Z does not work, then I would probably check the batteries one at a time in Z with three batteries from Z; then I would replace the battery (or batteries) I discover to be defective and try out F with the resulting set of batteries. I would not use the two-battery-at-a-time test procedure because the one-at-a-time procedure is simpler and almost as easy to use. In any case, I will make sure that the batteries are installed in the direction shown in a diagram inside the flashlight. If no diagram is given, I will make sure that the electrical path through the batteries is all in the same direction (from bump end to flat end, for example).  
电池。如果F不工作，我会尝试将F中的所有电池放入能工作的手电筒（Z）中。如果Z工作，那么我就排除了问题的四个可能原因（四个电池）。如果Z不工作，那么我可能会逐个检查Z中的电池，并用Z中的三个电池进行测试；然后我会更换发现有问题的电池，并使用得到的一组电池来测试F。我不会使用两个电池一起测试的方法，因为逐个测试的方法更简单，而且几乎同样容易使用。无论如何，我会确保电池按照手电筒内部的图示方向安装。如果没有给出图示，我会确保电池的电路路径都是相同的方向（例如从凸起的一端到平坦的一端）。*­

*Bulb. Assuming that the batteries are all right but that it still does not work, I would test the bulb next because that is also an easy procedure. To do this, I would put Fs bulb in Z. If it works, then I will put it back in F. If it does not work, I will try Zs bulb in F. If it works, then I will buy a new bulb, put it in one of the flashlights, and check it.  
灯泡。假设电池都没问题，但灯泡还是不亮，我会接下来测试灯泡，因为这也是一个简单的步骤。为了做到这一点，我会把 Fs 的灯泡放在 Z 里。如果它亮了，那么我会把它放回 F。如果它还是不亮，我会尝试把 Zs 的灯泡放在 F 里。如果它亮了，那么我会买一个新的灯泡，放在其中一个手电筒里，并检查它。*­dure. To do this, I would put Fs bulb in Z. If it works, then I will put it back in

*Electrical connections. If F still does not work, I will inspect the interior of Fto try to figure out the electrical path because electricity must go from one end of the battery set through the switch and bulb back to the other end of battery set. I will make sure that contact is made at all places. I will inspect for corrosion on the contacts, probably scrape the contacts anyway, and check F. Assume that it still does not work.  
电气连接。如果 F 仍然不工作，我将检查 F 的内部，试图弄清楚电路路径，因为电流必须从电池组的一端通过开关和灯泡返回到电池组的另一端。我会确保所有地方都有接触。我会检查接触点是否有腐蚀，可能会刮擦接触点，并检查 F。假设它仍然不工作。*­

*Switch. I have now eliminated batteries, the bulb, lack of contact in visible points, and corrosion on the visible contacts as possible causes of the malfunction, and have probably narrowed it down to the switch. I will check both sides of the switch with the circuit tester in various switch positions. If it shows no through passage of electricity (an “open”) at all switch positions, then the problem is very probably in the switch.  
开关。我现在已经排除了电池、灯泡、可见接点的缺乏接触以及可见接点的腐蚀作为故障可能的原因，并且很可能将问题缩小到了开关上。我将使用电路测试仪在不同的开关位置检查开关的两侧。如果在所有开关位置上都没有电流通过（即断开状态），那么问题很可能出在开关上。*

The best I know for dealing with a flashlight switch is to spray tuner spray on the switch and work it back and forth. After doing this, I will try F again. I hope that it works because I do not know an economical way to replace a flashlight switch.  
我所知道的处理手电筒开关的最好方法是在开关上喷洒调音喷雾并来回操作。在这样做之后，我会再次尝试F。我希望它能起作用，因为我不知道替换手电筒开关的经济方式。­nomical way to replace a flashlight switch.

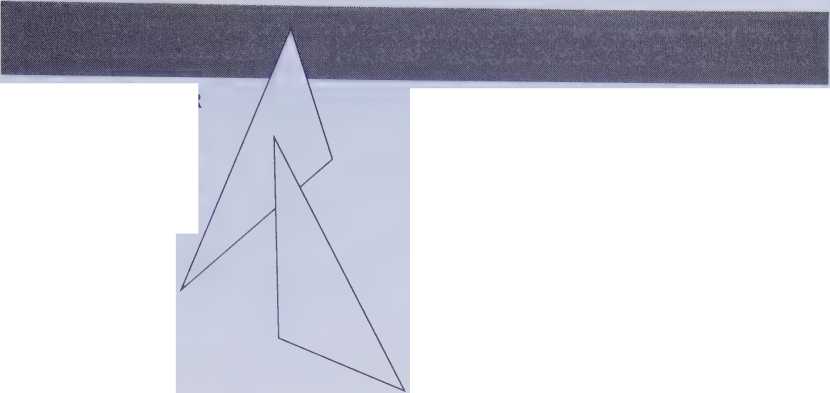
*Sum. In doing this troubleshooting, I tried to rule out possible causes, as many as I could, as quickly as I could.  
尝试排除可能的原因，尽可能快速地排除了许多可能性。*

*Note. In addition to troubleshooting and diagnosing strategy, I needed to know something about batteries, bulbs, switches, electricity, and tuner spray, showing the importance of knowledge about and understanding of the field in which you are working. If you have trouble following this example because of unfamiliarity with the materials, I apologize and hope that, even so, you understand the troubleshooting and diagnosing strategies I used sufficiency for you to use them in an area you do understand.  
注意。除了故障排除和诊断策略之外，我还需要了解一些关于电池、灯泡、开关、电力和调谐喷雾的知识，这显示了对所从事领域的知识和理解的重要性。如果由于对这些材料不熟悉而难以理解这个例子，我向您道歉，并希望即使如此，您也能充分理解我所使用的故障排除和诊断策略，以便您在您熟悉的领域中使用它们。*­­

**8:47 Remember to pay attention to the principles of troubleshooting and the criteria for hypothesis testing.  
记住要注意故障排除的原则和假设测试的标准。**

**8:48 If I tell you the answer, it will not be a brain teaser. However, if you really feel that you need a hint, read on. Otherwise, stop reading now and go back to working on the teaser. The first balancing should be four against four, selected at random. Here is another hint: Try to develop some principles by working with a smaller group, perhaps four, seeing how efficiently you can locate the off-penny in a group of that size. Then apply these principles to the teaser, or invent and apply similar principles.  
8:48 如果我告诉你答案，那就不是一个脑筋急转弯了。然而，如果你真的觉得你需要一个提示，继续阅读。否则，现在停止阅读并回去解决这个脑筋急转弯。首先，平衡应该是随机选择的四对四。这里有另一个提示：尝试通过与一个较小的团队一起工作来制定一些原则，也许是四个人，看看你能多有效地找到一组这样大小的硬币中的假币。然后将这些原则应用到这个脑筋急转弯中，或者发明并应用类似的原则。**

**8:49 and 8:50 Up to you, but show it to a friend or associate to get reactions.  
8:49和8:50 由你决定，但是给朋友或同事看看以获取反馈。**

Best-Explanation and Causal Inference: Argument and Writing Strategy  
最佳解释和因果推断：论证和写作策略

CHAPTER

9

Did Napoleon die from poison? Did Shakespeare intend Iago to be a melodramatic villain? Was Arlene’s knife stroke only moderate in force? Was Pluto once a satellite of Neptune? Is there a sizable oil deposit beneath Seal Island? Does the Prime Minister intend to resign soon? Does Martine like Karl? Did Frank trip Pele on purpose, or just by accident? Does the president feel insecure? Why did the car crash into the pole? What caused the extinction of the dinosaurs? What did Thomas Jefferson mean by “equal”?  
拿破仑是被毒死的吗？莎士比亚是否打算让伊阿古成为一个夸张的反派角色？阿琳的刀击力度只是中等吗？冥王星曾经是海王星的卫星吗？海豹岛下面有大量的油藏吗？总理打算很快辞职吗？马丁喜欢卡尔吗？弗兰克是故意绊倒贝利的，还是纯粹意外？总统感到不安吗？为什么车撞到了电线杆？是什么导致了恐龙的灭绝？托马斯·杰斐逊所说的平等是什么意思？­pose, or

Best-Explanation Hypotheses  
最佳解释假设

A proposed answer to each of these varied questions would be a fact-explaining hypothesis (or conclusion) that would be justified basically by its ability to explain the facts and the inability of its competitors to do so—or, to use a technical term, by its being the *best explanation.* Unfortunately, answers to these questions would be very difficult or impossible to obtain by experimentation. How then do we produce plau­sible answers to such questions, and how do we decide whether the evidence for such answers is strong enough? (This topic comes under the *I* for inference in *FRISCO* because we are talking about *inference* to best explanation.)

In this chapter, you will first see an approach to nonexperimental hypotheses that parallels the approach to experimental hypotheses that you found in the previous chapter. The basic criteria and reasoning are the same: Roughly speaking, hypotheses get their support from their ability to explain the facts and from the inability of their competitors to do so. But the types of evidence vary greatly from one type of situation to another, so a thorough familiarity with the area of inquiry is also necessary.  
对于这些各种问题的一个提议性答案将是一种解释事实的假设（或结论），其合理性主要是通过其解释事实的能力以及其竞争对手无法做到这一点的能力来证明的，或者用一个技术术语来说，就是最佳解释。不幸的是，通过实验很难或不可能获得这些问题的答案。那么，我们如何提出对这些问题的合理答案，并如何确定这些答案的证据是否足够强大？（这个话题属于FRISCO中的推理I，因为我们谈论的是最佳解释的推理。）在本章中，您将首先看到一种与前一章中找到的实验性假设相类似的非实验性假设的方法。基本标准和推理是相同的：粗略地说，假设的支持来自于它们解释事实的能力以及它们竞争对手无法做到这一点的能力。但是，不同类型的证据在不同类型的情况下差异很大，因此对所研究领域的彻底熟悉也是必要的。­tion

Because causation is at least closely related to the type of explanation under consideration here, a section of this chapter is devoted to causation. Furthermore, because many people need to put their hypotheses and their evaluations of them in writing, a section is also devoted to writing.   
因为因果关系至少与此处所考虑的解释类型密切相关，本章的一部分专门讨论了因果关系。此外，由于许多人需要将他们的假设和对其的评估写下来，本章还专门讨论了写作。

Different types of arguments have different criteria for their appraisal. Because you are now acquainted with two types of argument (deductive and best-explanation), and will encounter two more in the next two chapters, the question arises, “What criteria should you apply?” In this chapter, you will also find suggestions for dealing with this question.  
不同类型的论证对其评价有不同的标准。因为您现在已经熟悉了两种类型的论证（演绎和最佳解释），并且将在接下来的两章中遇到另外两种类型的论证，所以问题是，您应该应用什么标准？在本章中，您还将找到处理这个问题的建议。­teria

First, let me clarify the distinction I have assumed between hypothesis and conclusion. A hypothesis is a proposition that gets its support from its ability to account for the facts and the inability of its competitors to account for them and that is a candidate for testing in the situation. Calling something a hypothesis implies that we have not yet decided that it is correct. When someone has judged it to be correct on the basis of the evidence, then it becomes, for that person, a conclusion. The tentative nature has then been abandoned. There arc also cases in between, in which we m>ght, for example, call something a tentative conclusion.  
首先，让我澄清我所假设的假设和结论之间的区别。假设是一个命题，它通过能够解释事实并且无法被竞争对手解释来获得支持，并且在特定情况下成为测试的候选项。称某事物为假设意味着我们尚未确定其是否正确。当有人根据证据判断它是正确的时候，对于那个人来说，它就成为了结论。这种暂时性质已经被放弃。也存在一些中间情况，例如我们可能称某事物为暂时性结论。*­*­didate for testing in the situation. Calling something a hypothesis implies that ­

­clusions make value claims (such as “The habitat of every species should be pre­served,” “We should spray the area with Abate to kill the mosquito larvae,” and “Arlene was wrong in what she did”), and do not account for anything. (But the hypothesis that someone Not all conclusions, however, are former hypotheses. For example, some conclusions make value claims (such as “The habitat of every species should be preserved,” “We should spray the area with Abate to kill the mosquito larvae,” and “Arlene was wrong in what she did”), and do not account for anything. (But the hypothesis that someone believes one of those value propositions might account for some things that the person does. For example, the hypothesis that the judge believed that Arlene was wrong might account for the severity of the sentence he gave her.) These value claims are not hypotheses because they do not receive their support from their ability to account for the facts and are not alleged to account for facts. They receive their support in other ways, to be discussed in Chapter 11.  
然而，并非所有的结论都是先前的假设。例如，有些结论提出了价值主张（比如每个物种的栖息地应该得到保护，我们应该喷洒杀虫剂来消灭蚊子的幼虫，阿琳在她所做的事情上是错的），并且不解释任何事情。（但是，有人相信这些价值主张之一的假设可能解释了他所做的一些事情。例如，法官相信阿琳是错的这个假设可能解释了他给她的判决的严重性。）这些价值主张不是假设，因为它们不是通过解释事实来获得支持，也不被指称为解释事实。它们以其他方式获得支持，在第11章中将进行讨论。

Henceforth, in order to avoid having to say both words, hypothesis and conclusion, I shall usually use only the word hypothesis. But consider what I sav generally to apply also to conclusions that were or could have been hvpotheses at some time. However, I shall use the word conclusion when talking about something that in the situation clearly is a conclusion.  
从现在开始，为了避免重复使用假设和结论这两个词，我通常只会使用假设这个词。但请考虑我所说的一般情况也适用于曾经或可能是假设的结论。然而，当谈论明显是结论的某个事物时，我会使用结论这个词。*­*

Developing a Best-Explanation Hypothesis  
发展最佳解释假设

­ation. It also usually helps to think hard about the question, but sometimes it is also When facing questions like those at the start of the chapter, it helps very much to be well-informed about the topic, so that we can avoid fruitless ideas and so that hypotheses from previous similar situations might stimulate a good one for this situation. It also usually helps to think hard about the question, but sometimes it is also a good idea to get away from it for a bit. It helps to talk to others, to imagine (at least temporarily) some of the constraints under w hich we are operating to be inoperative, and to be sensitive to hints that are present in the situation. Often it helps to modify and refine an unsuccessful hypothesis in a way that responds to its difficulties, and then to refine it some more, so that the production and testing of hypotheses interact with and contribute to each other. But there is no general set of rules that, if followed, produce good hypotheses. Much about it is intuitive, personal, and dependent on our already knowing quite a bit about the topic.  
当面对章节开头的这些问题时，了解该主题非常有帮助，这样我们就可以避免无果的想法，以及之前类似情况下的假设可能会激发出对于这种情况的好的想法。思考问题通常也会有所帮助，但有时候离开一会儿也是个好主意。与他人交谈、想象（至少是暂时地）我们所面临的限制条件无效，并且对于情境中存在的暗示要敏感也是有帮助的。通常，将一个不成功的假设进行修改和完善，以应对其中的困难，然后再进一步完善它，使得假设的产生和测试相互作用并相互促进是有帮助的。但是，并没有一般的规则集，如果遵循，就能产生好的假设。其中很多是凭直觉、个人经验，并且依赖于我们已经对该主题有相当了解。­­lowed, produce good hypotheses. Much about it is intuitive, personal, and dependent

Given that we have a provisional hypothesis, produced by tιs or someone else, how do we judge it? To that topic we now turn.   
鉴于我们有一个临时假设，由tιs或其他人提出，我们如何评判它？现在我们转向这个话题。

Applying the Criteria to Be Satisfied in Accepting a Best-Explanation Hypothesis  
应用满足接受最佳解释假设的标准

­imental hypotheses, which actually are one kind of best-explanation hypothesis. That is, whether or not we have experimented, a hypothesis is justified to the extent that, given reasonable assumptions, (1) it explains some facts, (2) alternative explanations of these facts are inconsistent with some fact or facts (if there is a plausible alternative hypothesis, then we must not endorse the hypothesis), (3) it is itself consistent with the facts, and (4) it is plausible. The difference is that, when we cannot do an exper­iment to create our evidence (the The criteria for judging best-explanation hypotheses are the same as those for experimental hypotheses, which actually are one kind of best-explanation hypothesis. That is, whether or not we have experimented, a hypothesis is justified to the extent that, given reasonable assumptions, (1) it explains some facts, (2) alternative explanations of these facts are inconsistent with some fact or facts (if there is a plausible alternative hypothesis, then we must not endorse the hypothesis), (3) it is itself consistent with the facts, and (4) it is plausible. The difference is that, when we cannot do an experiment to create our evidence (the R in FRISCO), we have to search it out, as a detective does. An inference (1) that employs these criteria (whether experimental or not) is called a best-explanation inference. The term best explanation is used here because the acceptability of the hypothesis depends on its being the best explanation of the facts (as well as being a good explanation of the facts).  
判断最佳解释假设的标准与实验假设的标准相同，实际上实验假设就是最佳解释假设的一种。也就是说，无论我们是否进行了实验，一个假设在合理的假设下是有理由的，（1）它解释了一些事实，（2）这些事实的替代解释与某个事实或事实不一致（如果存在一个合理的替代假设，那么我们不能支持该假设），（3）它本身与事实一致，（4）它是合理的。不同之处在于，当我们无法进行实验来获得证据时（FRISCO中的R），我们必须像侦探一样去寻找它。使用这些标准的推理（无论是实验还是非实验）被称为最佳解释推理。这里使用最佳解释这个术语是因为假设的可接受性取决于它是否是事实的最佳解释（以及是否是事实的良好解释）。­tive does. An inference (1) that employs these criteria (whether experimental or not) is called a

Let us apply the four best-explanation criteria to the pathologist’s conclusion that the knife stroke was of moderate force:  
让我们将四个最佳解释标准应用于病理学家的结论，即刀伤是中等力度的。

1. The conclusion explains why the wound was only 2.5 inches deep.  
   结论解释了为什么伤口只有2.5英寸深。
2. ­tion is that the stroke was strong in force, but the knife was slowed by a medallion worn by Al. Given the reasonable assumption that if there had been a medallion, someone would have reported it, this alternative expla­nation was inconsistent with the fact that no medallion was reported by anyone who examined Al. All other plausible alternative explanations also seem inconsistent with the facts.An alternative explanation of the depth is that the stroke was strong in force but hit some bone. This alternative explanation was inconsistent, given reasonable assumptions, with the observation that there were no marks on the bones surrounding the wound. Another alternative explanation is that the stroke was strong in force, but the knife was slowed by a medallion worn by Al. Given the reasonable assumption that if there had been a medallion, someone would have reported it, this alternative explanation was inconsistent with the fact that no medallion was reported by anyone who examined Al. All other plausible alternative explanations also seem inconsistent with the facts.  
   深度的另一种解释是，这一击力强大，但击中了某块骨头。鉴于合理的假设，这种另一种解释与观察到的伤口周围骨头上没有痕迹的事实不一致。另一种可能的解释是，这一击力强大，但刀被阿尔佩戴的一枚勋章减缓了。鉴于合理的假设是，如果有一枚勋章，肯定会有人报告，这种另一种解释与检查阿尔的任何人都没有报告发现勋章的事实不一致。所有其他合理的替代解释也似乎与事实不一致。
3. ­sonable assumptions. It would have been inconsistent with the observed depth, if we had assumed that Al was wearing a very thick studded leather jacket. (Under that assumption, a moderate knife stroke would not have penetrated even 2.5 inches.) But that assumption seemed unrea­sonable. No one mentioned such a jacket and the photo taken of Al on the dining room floor showed no such jacket—only a thin nylon jacket.The conclusion did not seem to be inconsistent with any facts, given reasonable assumptions. It would have been inconsistent with the observed depth, if we had assumed that Al was wearing a very thick studded leather jacket. (Under that assumption, a moderate knife stroke would not have penetrated even 2.5 inches.) But that assumption seemed unreasonable. No one mentioned such a jacket and the photo taken of Al on the dining room floor showed no such jacket—only a thin nylon jacket.  
   结论似乎与任何事实都不矛盾，假设合理的情况下。如果我们假设Al穿着一件非常厚的带钉皮夹克，那么这个结论将与观察到的深度不一致。（在这种假设下，即使是中等力度的刀伤也不会穿透2.5英寸。）但这个假设似乎是不合理的。没有人提到过这样的夹克，而在餐厅地板上拍到的Al的照片也没有显示出这样的夹克，只有一件薄薄的尼龙夹克。
4. The conclusion was plausible—at least as plausible as any of the alternatives.  
   结论是合理的-至少和其他任何选择一样合理。

­ited to experimental reasoning. They apply to many other types of hypotheses, including possible answers to the questions at the beginning of the chapter, which might be characterized as historical hypotheses, interpretations of author’s meaning and intentions, and hypotheses about other people’s states of mind (beliefs, likes, intentions, dislikes, fears, etc.)—or in general, hypotheses about events or states of affairs that are not observable or are difficult to observe.Therefore, the pathologist’s conclusion that the stroke was of moderate force seemed justified on the basis of these criteria. As you can see, the criteria are not limited to experimental reasoning. They apply to many other types of hypotheses, including possible answers to the questions at the beginning of the chapter, which might be characterized as historical hypotheses, interpretations of author’s meaning and intentions, and hypotheses about other people’s states of mind (beliefs, likes, intentions, dislikes, fears, etc.)—or in general, hypotheses about events or states of affairs that are not observable or are difficult to observe.   
因此，病理学家得出的中度力量引发中风的结论似乎是基于这些标准合理的。正如你所看到的，这些标准并不仅限于实验推理。它们适用于许多其他类型的假设，包括本章开头的问题的可能答案，这些问题可能被描述为历史假设、对作者意图和意图的解释，以及关于他人心理状态（信念、喜好、意图、厌恶、恐惧等）的假设，或者一般来说，关于不可观察或难以观察的事件或状态的假设。

The Reasoning Pattern in Rejecting a  
拒绝中的推理模式

Best-Explanation Hypothesis  
最佳解释假设

The reasoning pattern for rejecting a nonexperimental hypothesis is the same as for experimental reasoning. The first stage is showing that the falsity of an implication (/) of the hypothesis (h) plus assumptions (a) requires the denial of the combination of the hypothesis and the assumptions. For example, the hypothesis that the knife stroke was strong in force (call it KS for knife and strong), together with the assumption that there was no obstruction to the blow and the assumption that a strong unobstructed knife stroke would have ∕xmetratcd more than 2.5 inches (NOUP), implied that the wound would have been more than 2.5 inches deep ( WM). Because it was not more than 2.5 inches deep, the conjunction of the hypothesis and the assumption must be false, as shown in the denial-of-the-consequent reasoning of Example 9:1, which depicts the first stage in the reasoning pattern.  
拒绝非实验性假设的推理模式与实验推理相同。第一阶段是表明假设（h）加上假设（a）的否定要求否定假设和假设的组合的蕴含（/）。例如，假设刀击力强（称之为KS），假设没有阻碍刀击的假设以及假设强有力且无阻碍的刀击会导致超过2.5英寸的切口（NOUP），暗示创伤会超过2.5英寸深（WM）。因为创伤没有超过2.5英寸深，假设和假设的组合必须是错误的，如示例9:1中的否定结果推理所示，这描绘了推理模式的第一阶段。

Example 9:1

Two alternative symbolizations of the same reasoning:  
同一推理的两种替代符号化：

1. If h and α, then i. 1. If KS and NOUP, then WM.  
   如果 h 和 α，那么 i。1. 如果 KS 和 NOUP，那么 WM。
2. Not *i.* **2.** *Not WM.*
3. Therefore, not both h and α. 3. Therefore, not both KS and NOUP.  
   因此，既不是h也不是α。3. 因此，既不是KS也不是NOUP。

Or: not (h and w) Or: not (KS and NOUP)  
或：非（h 和 w）或：非（KS 和 NOUP） Or: not (KS and NOUP)

Denial of the consequent; deductively valid  
不能被翻译。

The schematic letters h, w, and i (for hypothesis, assumption, and implication) are used in the left-hand symbolization. The letter i is used for implication (rather than p for prediction) in the left-side symbolization because the word prediction is limited to what is expected in the future. Otherwise, this pattern is the same as the one in the previous chapter on experimentation. The pattern presented here is more general than, but includes, the pattern for experimental predictions.  
h、w和i这些示意图中的字母（代表假设、假定和蕴涵）用于左侧的符号化。在左侧的符号化中，字母i用于蕴涵（而不是用p表示预测），因为预测一词仅限于对未来的期望。除此之外，这个模式与前一章中的实验相同。这里呈现的模式比实验预测的模式更加普遍，但也包括了实验预测的模式。

The content-representative letters KS, NOUP, and WM are used in the svm- bolization on the right in Example 9:1. I could also have used p, q, and r. You should use whatever system of letters is most convenient for you.  
KS、NOUP和WM是在示例9:1中右侧的符号化中所使用的代表内容的字母。我也可以使用p、q和r。您应该使用对您最方便的字母系统。

The second stage is showing that the affirming of the assumptions then requires the denial of the hypothesis. We do this by claiming the assumptions to be true. In this case, the assumptions were that there were no obstructions and that an unobstructed strong knife stroke would have penetrated more than 2.5 inches. This pattern is shown in Example 9:2.  
第二阶段是展示肯定假设需要否定假设的过程。我们通过声称假设为真来做到这一点。在这种情况下，假设是没有障碍物，并且一个没有障碍物的有力刀击会穿透超过2.5英寸。这种模式在示例9:2中展示。­structed strong knife stroke would have penetrated more than 2.5 inches. This pat­tern is shown in Example 9:2.

Example 9:2

1. Not both KS and NOUP  
   不能同时是KS和NOUP。
2. Not both *h* and *a*
3. *a*
4. Therefore, not *h*
5. *NOUP*
6. Therefore, not KS

Affirming one member of a negated conjunction; deductively valid   
肯定否定连词的一个成员；演绎有效

To review: Suppose the hypothesis is that the knife stroke was strong in force. One of the assumptions was that the knife stroke was unobstructed. Another was that an unobstructed strong knife stroke would have penetrated more than 2.5 inches. We simplify for the time being by considering only these assumptions (though there were more). If that hypothesis and the assumption are true, then Arlene’s knife stroke would have penetrated more than 2.5 inches. (This conditional is line 1 in Example 9:1.) But the knife stroke did not penetrate more than 2.5 inches (line 2), so not both the hypothesis and the assumptions are true (line 3 of Example 9:1, which is repeated and numbered 4 in Example 9:2). I accept the assumptions (line 5 in Example 9:2). So I reject the hypothesis that it was a strong knife stroke (line 6 in Example 9:2).  
回顾一下：假设是刀势很强。其中一个假设是刀势没有受阻。另一个假设是没有受阻的强劲刀势会穿透超过2.5英寸。我们暂时只考虑这些假设（尽管还有更多）。如果那个假设和假设都是真的，那么阿琳的刀势会穿透超过2.5英寸（这个条件是示例9:1中的第一行）。但是刀势没有穿透超过2.5英寸（第二行），所以假设和假设不都是真的（示例9:1中的第三行，在示例9:2中重复并编号为第四行）。我接受这些假设（示例9:2中的第五行）。所以我拒绝了刀势很强的假设（示例9:2中的第六行）。

Note that the rejection of the alternative hypothesis depends on the acceptance of the assumptions. For example, if the assumption that there were no obstructions to the blow is not acceptable, the hypothesis has not been refuted by this reasoning. Do not always blame the hypothesis for a false implication!  
请注意，对替代假设的拒绝取决于对假设的接受。例如，如果假设没有任何阻碍打击的情况是不可接受的，那么这个假设就没有被这种推理所推翻。不要总是把错误的含义归咎于假设！

As with experimental reasoning, this reasoning pattern is somewhat idealized. Often, in practice, we need to loosen its strictness somewhat by adding words such as probably, tends to, and generally. For example, one of the assumptions I mentioned should probably include the word probably: “An unobstructed strong knife stroke would probably penetrate more than 2.5 inches.” Accordingly, the rejection of the hypothesis would read, “The knife stroke was probably not strong in force.” There are no mechanical rules for loosening deductive reasoning this way. One must use one’s own good judgment, as was discussed in Chapter 7 under the heading Loose Derivation.  
与实验推理一样，这种推理模式也有一定程度的理想化。通常情况下，我们需要通过添加诸如可能、倾向于和一般来放松其严格性。例如，我提到的假设之一应该可能包括可能这个词：一次畅通无阻的有力刀击可能会穿透超过2.5英寸。因此，对假设的否定将会是，刀击可能力量不够强。没有机械规则可以以这种方式放松演绎推理。必须根据自己的判断力来决定，正如第7章的松散推导一节中所讨论的那样。

In sum, the criteria we use in rejecting a hypothesis are essentially the criteria of loose derivation (discussed in Chapter 7). This use of these criteria comes under the Jin FRISCO.  
总之，我们在拒绝一个假设时使用的标准基本上是松散推导的标准（在第7章中讨论）。这些标准的使用属于Jin FRISCO。

Details and General Knowledge  
细节和常识

I have given only a sketchy description of this example of the best-explanation way of looking at the reasoning. Without a much more complete grasp of the details in the situation, and without general knowledge about situations of this type, you are not in a position to decide whether the pathologist’s conclusion was actually justified on the basis of the facts given. For example, the knife might have been very dull. If so, the alternate conclusion that the knife stroke was strong in force would have been consistent with the evidence, and could have given a good explanation of the depth of the wound. So a knowledge of the details is important. (Reminder: If there is a plausible alternative hypothesis, one should not endorse the hypothesis in question.)

Furthermore, for all I know, the chest bones and cartilage of an adult male might be so close together and so firm that a thin piece of steel could not slip through without great force. If so, the powerful-blow explanation would have been a good one. To rule out this alternative required general knowledge that applied to this sit­uation. The pathologist was supposed to have such knowledge. We members of the jury did not have it. (Because of this sort of difference between experts and juries,experts are permitted to present their conclusions in courtroom testimony, as you will remember from Chapter 4.)

The general lesson here is this: If you do best-explanation reasoning or judge someone else’s best-explanation reasoning, you must be well-acquainted with the details of the situation and have general knowledge about the things in the situation. Sometimes the general knowledge comes from one standard subject that has been organized for teaching in our schools (chemistry, for example), but often it does not, as in the moderate-blow case. Here the knowledge comes from a number of subjects —with the addition of a large dose of general knowledge from practical experience.  
我只给出了对这个最佳解释推理方式的例子的草率描述。如果你对情况的细节没有更全面的掌握，也没有关于这种类型情况的一般知识，你就无法判断病理学家的结论是否真正基于所给的事实。例如，刀可能非常钝。如果是这样，刀划可能是强力的，这个替代性结论与证据是一致的，并且可以很好地解释伤口的深度。因此，了解细节是很重要的。（提醒：如果有一个合理的替代假设，就不应该支持所质疑的假设。）此外，据我所知，成年男性的胸骨和软骨可能非常紧密坚固，以至于一块薄钢片无法在没有巨大力量的情况下穿过。如果是这样，强力打击的解释就是一个好的解释。排除这种替代性解释需要适用于这种情况的一般知识。病理学家应该具备这样的知识。我们陪审团的成员没有这个知识。（正因为专家和陪审团之间存在这种差异，专家被允许在法庭证词中陈述他们的结论，你应该还记得第4章的内容。）这里的一般教训是：如果你进行最佳解释推理或评判别人的最佳解释推理，你必须熟悉情况的细节，并且对情况中的事物有一般知识。有时，一般知识来自于我们学校教学中组织的一个标准学科（例如化学），但通常不是这样，就像是中等力度的打击案例一样。在这种情况下，知识来自于多个学科，再加上大量的实践经验中的一般知识。

Other Types of Explanation  
其他类型的解释

The word explanation applies to a variety of things. In hypothesis testing, it applies to a proposition or factor that accounts for something.1 But there are other types of explanation, including process explanations (such as explaining how to swim), interpretation explanations (such as explaining the meaning of deductive validity}, and justification explanations (such as explaining why you should, when driving, not change lanes without signaling). Best-explanation-reasoning explanations, in contrast, are supposed to account for something that is or was. Their explaining is not describing a process, stating a meaning, or justifying something. I mention these other types of explanation in order to help you avoid confusing their kinds of explaining with the explaining by a hypothesis or a conclusion that accounts for something. Do not look for these other kinds of explanation when looking for something that accounts for something (although these other kinds of explanation can be relevant to attempts to account for something).  
解释­pretation explanations (such as explaining the meaning of ­tification explanations (such as explaining why you should, when driving, not change lanes without signaling). Best-explanation-reasoning explanations, in contrast, are supposed to

Explanation and Partial Explanation  
解释和部分解释

In the knife-stroke case, the “something” that was accounted for is the fact that the wound was only 2.5 inches deep. The proposition that was supposed to account for this fact is “The knife stroke was only of moderate force.” That proposition was the pathologist’s conclusion. It explained why the wound was onlv 2.5 inches deep.  
在刀伤案中，被解释的是伤口只有2.5英寸深的事实。用来解释这一事实的命题是刀伤只是中等力度。这个命题是病理学家的结论。它解释了为什么伤口只有2.5英寸深。

1. + It also applies to claims that the proposition or factor explains why something happened, or accounts for, or caused, something. For example, the following could be hypotheses: “The moderateness of the knife stroke explains why the wound is only 2.5 inches deep,” “The moderateness of the knife stroke accounts for the wound’s being only 2.5 inches deep,” and “The moderateness of the knife stroke caused the wound to be only 2.5 inches deep.” In order to simplify the discussion, I shall forgo a detailed discussion of this form of hypothesis, which itself incorporates terms such as caused, accounts for, and explains why. I invite those who would find it interesting to perform the extension to this kind of hypothesis.  
此外，它还适用于解释为什么某事发生的命题或因素，或者解释、说明某事的原因。例如，以下可能是假设：刀划的适度程度解释了为什么伤口只有2.5英寸深，刀划的适度程度说明了伤口只有2.5英寸深，刀划的适度程度导致伤口只有2.5英寸深。为了简化讨论，我将放弃对这种假设形式的详细讨论，它本身包含了诸如导致、解释、说明等术语。我邀请那些对此类假设感兴趣的人进行扩展。

Factors, as well as propositions, can account for things. Viewing the knife-stroke case in terms of factors, instead of propositions, the factor was the (alleged) moderateness of the knife stroke. When a factor is offe red in explanation, then the proposition that the factor obtained, or was in place, or was a characteristic of the situation (though often stilted) could be the hypothesis. Example: “Moderateness of the knife stroke was a characteristic of the situation.” More idiomatically, we would say, “The knife stroke was moderate.” Hypotheses are always propositions statable in die form of complete sentences. Factors arc ιot stated in the form of complete sentences. The difference here between talking about a proposition and talking about a factor is generally a matter of convenience of expression.   
因素和命题都可以解释事物。以因素而不是命题的角度来看刀划案例，因素是刀划的（所谓的）适度。当一个因素被提供作为解释时，那么该因素得到了，或者存在于，或者是情境的特征（尽管常常生硬）的命题可以成为假设。例如：刀划的适度是情境的特征。更习惯地，我们会说刀划是适度的。假设总是以完整句子的形式陈述的命题。因素不以完整句子的形式陈述。在这里，谈论命题和谈论因素的区别通常是表达的便利性问题。­­teristic of ­tion and talking about

Partial Explanation  
部分解释

­erateness of the stroke as A best-explanation conclusion does not need to be the total explanation of the fact to be explained. It can instead be part of the explanation, or a partial explanation. The difference is often in the way we look at things. For example, we might view the moderateness of the stroke as the explanation, given the conditions. Or we might view it as part of the explanation of the depth of the wound, the sharpness of the knife also being a part (a sharp knife encounters less resistance). Here is another way of saying the same thing: The sharpness of the knife might be deemed to be just a condition, or it might be deemed to be part of the explanation of the result. Given that a factor does play a role, we classify it as a condition, or as a partial explanation, or as the explanation, depending on what seems right to emphasize for purposes of assigning responsibility. Whether interpreted as the explanation or as a partial explanation, the moderate-force conclusion gets support from its ability to explain or help explain the facts (that is, to account for or help account for the facts).  
"最佳解释的结论不需要成为被解释事实的完全解释。它可以作为解释的一部分，或者是部分解释。区别通常在于我们看待事物的方式。例如，鉴于条件，我们可以将中风的适度性视为解释。或者我们可以将其视为创伤深度的解释的一部分，而刀的锋利也是其中的一部分（锋利的刀遇到的阻力较小）。这是另一种表达相同意思的方式：刀的锋利可能被认为只是一个条件，或者可能被认为是结果的解释的一部分。鉴于因素确实起到了作用，我们将其分类为条件，或者作为部分解释，或者作为解释，这取决于强调分配责任的合适性。无论被解释为解释还是部分解释，适度力量的结论都得到了它解释事实的能力的支持（即解释或帮助解释事实的能力）。”

If you are troubled in some cases by the idea of looking for the explanation of some facts, you might instead think of yourself as looking for something that, together with certain other circumstances, explains these facts. In our case, you might think of us as being concerned with the moderateness of the stroke as part of the explanation of the depth of the wound, another part being the sharpness of the knife. But because the sharpness of the knife is given, and the strength of the stroke is crucial, we are more interested in the latter.  
如果你在某些情况下对寻找某些事实的解释感到困扰，你可以考虑自己在寻找某些与其他特定情况一起解释这些事实的东西。在我们的例子中，你可以将我们视为关注创伤的深度解释中的划痕的适度性，而另一部分则是刀的锋利程度。但由于刀的锋利程度是已知的，而划痕的力度至关重要，所以我们更感兴趣的是后者。­cial, we are more interested in the latter.

As you might have guessed, the distinction among a condition that matters, a factor providing a partial explanation, and one providing the explanation, is a tricky one. Good judgment is required, paying attention to the details and goals in the given situation. It depends on how much responsibility you feel you are justified in allocating to the factor in the situation.  
正如你可能猜到的那样，区分一个重要的条件、一个部分解释的因素和一个提供解释的因素是棘手的。需要有良好的判断力，关注给定情况中的细节和目标。这取决于你认为在这种情况下分配给这个因素多少责任是合理的。

+ Explanation, Accounting for, and Causation  
解释、会计和因果关系

­ing something about, then the accounting-for relationship is more plausibly viewed as a causal relationship. It would then include the mechanistic type of causal rela­tionships, but also many others, including those about motivation and those involv­ing intentions and beliefs. For example, all of the following would be causal relation­ships under the broad interpretation of What sort of relationship is this accounting-for relationship? In particular, is it a causal relationship? This is a difficult and controversial question. Many people are reluctant to say so because causation seems to them to be a rigid, mechanical connection. If, on the other hand, causation is viewed as a broader concept, concerned with bringing something about, then the accounting-for relationship is more plausibly viewed as a causal relationship. It would then include the mechanistic type of causal relationships, but also many others, including those about motivation and those involving intentions and beliefs. For example, all of the following would be causal relationships under the broad interpretation of cause: “Arlene’s motive for the stabbing was jealousy,” “Her jealousy accounted for her stabbing Al,” “Her jealousy brought about her stabbing Al,” and “Her jealousy caused her to stab Al.” Furthermore, all would be regarded as saying similar things. On this broad view of causation (which actually is my view), treating accounting-for as a causal relationship enables us to get guidance in making judgments about possible account-for relationships from some principles for guiding causal judgments that are discussed later in the chapter.  
这种会计关系是什么样的关系？特别是，它是一种因果关系吗？这是一个困难且有争议的问题。许多人不愿意这样说，因为他们认为因果关系是一种严格的、机械的连接。另一方面，如果将因果关系视为一个更广泛的概念，涉及到引发某事发生，那么会计关系更有可能被视为一种因果关系。这将包括机械类型的因果关系，以及涉及动机、意图和信念的其他许多关系。例如，根据因果关系的广义解释，以下所有情况都将被视为因果关系：Arlene刺伤的动机是嫉妒，她的嫉妒解释了她刺伤Al，她的嫉妒导致了她刺伤Al，她的嫉妒使她刺伤了Al。此外，所有这些情况都被认为是在表达类似的意思。在这种广义的因果关系观点下（实际上也是我的观点），将会计解释视为一种因果关系使我们能够从本章后面讨论的一些指导因果判断的原则中得到关于可能的解释关系的指导。

On the more narrow, mechanistic view of causation, judgments about account- for explanations are not all analyzed as causal. But these judgments can still be made and hypotheses can be judged because we often can tell whether one thing could account for another as easily as, on the broad view, we can tell whether that thing could have caused the other. For example, in the trial situation, it is obvious that Arlene’s jealousy could have accounted for her killing Al, just as (on the broad view) it is obvious that her jealousy could have caused her to stab him.  
在更狭义、机械的因果观中，关于解释的判断并不都被分析为因果关系。但是这些判断仍然可以进行，并且假设可以被评判，因为我们通常可以判断一件事是否可以解释另一件事，就像在广义观点中我们可以判断那件事是否可能导致另一件事一样。例如，在审判的情况下，显然阿琳娜的嫉妒可能是她杀害艾尔的原因，就像（在广义观点中）显然她的嫉妒可能导致她刺伤他一样。

Because this is a controversial topic, you must decide for yourself. But even if you construe causal relationships mechanistically, you can still usually make wise decisions about account-for relationships. Try it and see.  
因为这是一个有争议的话题，你必须自己做决定。但即使你以机械的方式解释因果关系，你仍然通常可以对解释关系做出明智的决策。试试看吧。­sions about account-for relationships. Try it and see.

The FRISCO Approach Applied to the Moderate Force Conclusion  
FRISCO方法应用于中等力量结论

­ing, I have used the elements of the FRISCO approach, usually without saying so. Next, consider the explicit application of this approach to that example, now that you are familiar with the example and with best-explanation reasoning:In using the moderate-force argument as an illustration of best-explanation reasoning, I have used the elements of the FRISCO approach, usually without saying so. Next, consider the explicit application of this approach to that example, now that you are familiar with the example and with best-explanation reasoning:  
在使用中度力量论证作为最佳解释推理的例证时，我通常使用了FRISCO方法的要素，尽管没有明确说明。现在，考虑将该方法明确应用于该例子，因为您已经熟悉了该例子和最佳解释推理：

*Focus: The pathologist’s conclusion is that the knife stroke was only of moderate force.  
焦点：病理学家的结论是刀伤只有中等力度。*­ate force.

*Reasons: Some of her more important reasons are these:  
原因：她更重要的原因有以下几点：*

1. The depth of the wound was only 2.5 inches.  
   伤口的深度只有2.5英寸。
2. There were no marks on the bones.  
   没有骨头上的痕迹。
3. The knife blade was sharp.  
   刀刃很锋利。
4. There was no evidence of any exterior impediment to the knife stroke (such as a medal or a heavy jacket).  
   刀刃上没有任何外部阻碍的证据（比如勋章或厚重的夹克）。

The reasons all seemed acceptable to the jurors. The first two we accepted on the word of the pathologist, who did well on the criteria for credibilitv. We did not need to take her word for the third because we were able to examine the knife ourselves. We were assured by the detective who sealed the knife as evidence that nothing had been done to it after he picked it up that night. The fourth reason seemed acceptable because the photos showed no evidence of external impediment and because no one mentioned any indication of external impediment. The prosecutor surely would have mentioned such evidence, if there had been any.  
所有的理由对陪审团来说都是可以接受的。前两个理由我们是根据病理学家的话接受的，她在可信度的标准上表现良好。对于第三个理由，我们不需要相信她的话，因为我们能够亲自检查那把刀。我们得到了那位侦探的保证，他在当晚拿起刀后没有对它进行任何处理，将其作为证据封存起来。第四个理由似乎是可以接受的，因为照片上没有外部阻碍的证据，也没有人提到任何外部阻碍的迹象。如果有任何证据，检察官肯定会提到的。­selves. We were assured by the detective who sealed the knife as evidence that noth­ing had been done to it after he picked it up that night. The fourth reason seemed acceptable because the photos showed no evidence of external impediment and because no one mentioned any indication of external impediment. The prosecutor surely would have mentioned such evidence, if there had been any.

*Inference: The conclusion satisfies the best-explanation criteria: It explains the depth of the wound. The primary alternative hypothesis (the strong-force hypothesis) is inconsistent with this depth, given the absence of an external impediment. The pathologist’s conclusion is consistent with the facts as we knew them, and it seemed plausible.  
推断：结论满足最佳解释标准：它解释了伤口的深度。主要的替代假设（强力假设）与这个深度不一致，因为没有外部阻碍物。病理学家的结论与我们所知的事实一致，并且似乎是合理的。*­sis) is inconsistent with this depth, given the absence of an external impediment. The pathologist’s conclusion is consistent with the facts as we knew them, and it seemed plausible.

­etrated more than 2.5 inches. The first assumption seems acceptable on the ground that if there had been an obstruction, the prosecutor would have mentioned it. ForIn seeing that the hypothesis explained the depth, we assumed that the knife stroke was not obstructed by a heavy studded jacket or medallion. In rejecting the hypothesis that the stroke was strong in force, we made the same assumption, and also assumed that if the stroke had been strong and unobstructed, it would have penetrated more than 2.5 inches. The first assumption seems acceptable on the ground that if there had been an obstruction, the prosecutor would have mentioned it. For the last assumption, we had to depend on our own experience and on the credibility of the pathologist, who probably would not have drawn the conclusion if the assumption were false. Although there were other assumptions, these seem to be the most important ones.  
在看到假设解释了深度的情况下，我们假设刀击没有被厚重的带钉夹克或奖章所阻碍。在拒绝了刀击力量强大的假设后，我们做出了同样的假设，并且还假设如果刀击力量强大且没有阻碍，它将会穿透超过2.5英寸。第一个假设似乎是可以接受的，因为如果有阻碍，检察官会提到的。对于最后一个假设，我们必须依靠自己的经验和病理学家的可信度，如果假设是错误的，病理学家可能不会得出结论。虽然还有其他假设，但这些似乎是最重要的。­tion were false. Although there were other assumptions, these seem to be the most important ones.

*Situation: The situation was taken into account in deciding on the alternative hypothesis of primary interest. If the stroke had been strong, then Arlene would have known that her blow would probably have caused great bodily harm. If she knew that, then she might have been guilty of murder. (Check-Up Item 7:8 in Chapter 7 provides the details of the murder charge, and will enable you to see why this is so, if you do not already know.) So the strong-force alternative was the important one. The situation was also taken into account in my noting that no one mentioned the presence of an external impediment to the blow. I had to know the situation to realize that. Also, the situation made the vagueness of the term moderate acceptable (a point to be elaborated under Clarity). The situation, according to my understanding of it, supported the pathologist’s conclusion.  
情况：在决定主要感兴趣的备选假设时，考虑了情况。如果中风很严重，那么阿琳会知道她的打击可能会造成严重的身体伤害。如果她知道这一点，那么她可能会犯谋杀罪。（第7章的检查项目7:8提供了谋杀指控的详细信息，如果您还不知道，您可以通过它了解到为什么会这样。）因此，强力备选方案是重要的。情况也被考虑在内，我注意到没有人提到打击的外部阻碍物的存在。我必须了解情况才能意识到这一点。此外，情况使得术语“中等”模糊不清可接受（在“清晰度”下将详细阐述）。根据我对情况的理解，支持病理学家的结论。*­

*Clarity:* In this situation, the meaning of the terms seemed clear enough and they did not seem to be used in more than one sense. In particular, the term *moder­ate,* which is vague, was precise enough for the purposes of the jury in that situation: Basically, we had to decide whether the prosecution had proved beyond a reasonable doubt that the defendant knew that her act caused a strong probability of great bod­ily harm, a key feature of the murder charge. On the basis of the pathologist’s testi­mony and argument that the blow was moderate, we decided that this key feature of the murder criteria was not satisfied, and accordingly deemed Arlene not guilty of murder. The word *moderate* was clear enough in that situation for us to draw our conclusion. (Incidentally, please note the interdependence among the parts of FRISCO, especially among *I, C,* and *S,* a common occurrence.)

At this point in our deliberations, the meaning of the phrase, proven beyond a reasonable doubt, was not questioned, although it possibly would have been, had anyone thought that it had been proven beyond a reasonable doubt that Arlene knew that her blow created a strong probability of great bodily harm. For this situation, the phrase was clear enough. Later on, in considering whether Arlene was justified in using the force she used, that question was raised because one of the jurors who was resistant to Arlene’s conviction for voluntary manslaughter was using a deductive notion of proof, it appeared. This situation is discussed at greater length in Chapter 12.  
清晰度：在这种情况下，这些术语的含义似乎足够清楚，并且它们似乎没有被用于多个意义。特别是模糊的词“适度”在这种情况下足够精确，以满足陪审团的目的：基本上，我们必须决定起诉方是否已经超出合理怀疑的范围证明被告知道她的行为造成了极大的身体伤害的强烈可能性，这是谋杀指控的一个关键特征。基于病理学家的证词和辩论，我们决定这个谋杀标准的关键特征没有得到满足，因此认定阿琳无罪。在那种情况下，“适度”一词足够清楚，让我们得出结论。（顺便说一句，请注意FRISCO的各个部分之间的相互依赖，特别是I、C和S之间的相互依赖，这是常见的情况。）在我们的讨论中，没有质疑“超出合理怀疑”的短语的含义，尽管如果有人认为已经超出合理怀疑的范围证明阿琳知道她的打击造成了极大的身体伤害的强烈可能性，可能会有质疑。对于这种情况，这个短语足够清楚。后来，在考虑阿琳是否有理由使用她使用的武力时，这个问题被提出，因为一个对阿琳被判故意杀人罪持抗拒态度的陪审团成员似乎在使用演绎的证明概念。这种情况在第12章中更详细地讨论。*­sonable doubt,*

*Overview: In reviewing, I note that the credibility criteria also apply directly to the conclusion because the pathologist stated the conclusion on the witness stand. The pathologist did well on these criteria: She had background experience and knowledge, she had no apparent conflict of interest, no one disagreed with her, she had a good reputation, I do not know about established procedures (a possible weakness), she knew of the risk to her reputation, she gave reasons, and I have no reason to think that she did not have careful habits.  
概述：在审查中，我注意到可信度标准也直接适用于结论，因为病理学家在证人席上陈述了结论。病理学家在这些标准上表现良好：她具有背景经验和知识，没有明显的利益冲突，没有人对她的意见表示异议，她声誉良好，我不了解已建立的程序（可能存在的弱点），她知道对她的声誉存在风险，她给出了理由，我没有理由认为她没有谨慎的习惯。*­

After reviewing the evidence, the situation, and the way I applied the various criteria, I stick with my decision to believe the pathologist’s hypothesis. Please realize that many details have been omitted from this appraisal—inevitably so. But the account does include the main concerns, and does illustrate the application of the FRISCO approach to a real situation involving nonexperimental inference to the best explanation.  
经过审查证据、情况和我对各种标准的应用方式的评估，我坚持相信病理学家的假设的决定。请意识到这个评估中有许多细节被省略了-这是不可避免的。但是这个描述包括了主要关注点，并且说明了在涉及非实验性推理到最佳解释的真实情况中应用FRISCO方法。­ize

­ibility criteria.This strength-of-the-blow case, in combining the application of the credibility criteria with the criteria for best explanation, is typical of a wide range of cases. Often we are well-informed enough to apply the best-explanation criteria to some extent, but not well-informed enough to apply them with full confidence, in which case we need to make a judgment about the credibility of a source, for which we need credibility criteria.  
这种打击力度案例，将可信度标准与最佳解释标准相结合，是一系列案例的典型。通常我们有足够的信息来在某种程度上应用最佳解释标准，但不足以完全自信地应用它们，这种情况下我们需要对信息来源的可信度做出判断，而这就需要可信度标准。

Best-Explanation Reasoning in Figuring Out What Someone Believes or Thinks  
找出某人的信仰或思想的最佳解释推理

­work (Jim and Pedro being staunch friends). An alternate hypothesis, “Jim was try­ing to get Pedro upset in order to make Pedro easier to beat in a racquetball match,” seemed inconsistent with what Pedro believed to be Jim’s character. Can you see the best-explanation pattern here?When we conclude that someone believes or thinks something, our conclusion is a best-explanation conclusion. The inference to the conclusion depends on its ability to best explain the facts. For example, consider Pedro’s conclusion that Jim believes that Martine was out with Karl at the Blue Cloud. This conclusion would explain why Jim said that he saw them out together. It would explain why Jim came running over to Pedro to give him the news (on the assumption that Jim believed that Pedro was in love with Martine, and would thus be very interested). It would explain why Jim avoided Karl the next morning, even though he needed Karl’s help with his homework (Jim and Pedro being staunch friends). An alternate hypothesis, “Jim was trying to get Pedro upset in order to make Pedro easier to beat in a racquetball match,” seemed inconsistent with what Pedro believed to be Jim’s character. Can you see the best-explanation pattern here?  
当我们得出某人相信或思考某事的结论时，我们的结论是一个最佳解释的结论。对这个结论的推理取决于它能够最好地解释事实。例如，考虑Pedro得出的结论，即Jim相信Martine和Karl在蓝云酒吧外见面。这个结论可以解释为什么Jim说他看到他们在一起。它可以解释为什么Jim跑过来告诉Pedro这个消息（假设Jim相信Pedro爱上了Martine，因此会非常感兴趣）。它可以解释为什么Jim第二天早上避开了Karl，尽管他需要Karl帮助他的家庭作业（Jim和Pedro是坚定的朋友）。另一个假设是，Jim试图让Pedro生气，以便在壁球比赛中更容易击败Pedro，但这个假设与Pedro对Jim的性格的看法不一致。你能看出这里的最佳解释模式吗？

A more complex illustration of this pattern is to be found in Shakespearean critic A. C. Bradley’s argument to support part of his understanding of Emilia, the wife of Iago, the villain in Othello. You saw the use of this part of Bradley’s interpretation in an example of deduction in Chapter 7, where the conclusion was that Iago was not a melodramatic villain. One of the reasons for that conclusion by Bradley is his (intermediate) conclusion about Emilia’s beliefs, namelv that she did not suspect Iago of villainy. Bradley’s argument in support of this intermediate conclusion appears here with the sentences numbered for convenience of reference. Sentence 1 i s the conclusion of this passage, as I read it.  
这种模式的更复杂的例证可以在莎士比亚评论家A.C.布拉德利对奥赛罗中的反派伊阿古的妻子艾米莉娅的理解的一部分的支持论证中找到。你在第7章的演绎示例中看到了布拉德利对这一理解部分的运用，结论是伊阿古并不是一个夸张的反派角色。布拉德利对这个中间结论的支持论证出现在这里，并按照句子的顺序进行了编号以方便参考。根据我的阅读，句子1是这段话的结论。­tation in an example of deduction in Chapter 7, where the conclusion was that Iago was not a melodramatic villain. One of the reasons for that conclusion by Bradley is his (intermediate) conclusion about Emilia’s beliefs, namelv that she did not suspect Iago of villainy. Bradley’s argument in support of this intermediate conclusion appears here with the sentences numbered for convenience of reference. Sentence 1 i s the conclusion of this passage, as I read it.

Example 9:3[[14]](#footnote-14)

(1) She never dreamed he was a villain. ...(2) Her failure, on seeing Othello’s agitation about the handkerchief, to form any suspicion of an intrigue, shows how little she doubted her husband. (3) Even the tone of her speeches, and her mention of the rogue who (she believes) had stirred up Iago’s jealousy of her, prove beyond doubt that the thought of Iago's being the scoundrel has not crossed her mind (IV.ii.l 15-147). (4) And if any hesitation on the subject could remain, surely it must be dispelled by the thrice-repeated erv of astonishment and horror, “My husband!”, which follows Othello’s wx>rds, “Thy husband knew it all ; (5) and by the choking indignation and desperate hope which we hear in her appeal when Iago comes in:  
(1) 她从未想过他是个恶棍。 (2) 她看到奥瑟罗对手帕的激动，却没有对任何阴谋产生怀疑，这表明她对丈夫的信任是多么深厚。 (3) 即使是她的言辞和她提到那个（她认为）激起了伊阿古对她的嫉妒的流氓，都无疑证明她从未想过伊阿古是个恶棍（IV.ii.l 15-147）。 (4) 如果对这个问题还有任何犹豫，那么一定会被她三次重复的惊讶和恐惧的呼喊所消除：“我的丈夫！”，这是在奥瑟罗的话“你的丈夫全都知道”之后；(5) 还有当伊阿古进来时，我们听到她的愤怒和绝望的呼吁。

Disprove this villain, if thou be’st a man  
证明这个恶棍是错的，如果你是个男人的话

He says thou told’st him that his wife was false  
他说你告诉他他的妻子是不忠的。

I know thou did’st not, thou’rt not such a villain  
我知道你没有，你不是这样的恶棍

Speak, for my heart is full.[footnoteRef:16] [footnoteRef:17]  
说吧，因为我的心满满的。[16] [17][[15]](#footnote-15)[[16]](#footnote-16)

Remember, Othello has just killed his wife out of mistaken jealousy.  
记住，奥赛罗只是因为错误的嫉妒而杀了他的妻子。

­ily. With the addition of appropriate assumptions, we can convert the argument into a set of deductively valid arguments, each of which yields the conclusion, but the assump­tions we seem to need to add to make the arguments deductively valid also make the arguments weak because the assumptions (at least those that I can think of) are false.Bradley’s extremely confident tone here might suggest that he has offered a deductive argument, but as it stands, the conclusion certainly does not follow necessarily. With the addition of appropriate assumptions, we can convert the argument into a set of deductively valid arguments, each of which yields the conclusion, but the assumptions we seem to need to add to make the arguments deductively valid also make the arguments weak because the assumptions (at least those that I can think of) are false.  
布拉德利在这里表现出极度自信的语气，这可能暗示他提出了一个演绎论证，但就目前而言，结论显然并不必然成立。通过添加适当的假设，我们可以将这个论证转化为一组演绎有效的论证，每个论证都得出相同的结论，但我们似乎需要添加的假设使得这些论证变得脆弱，因为这些假设（至少我能想到的那些）是错误的。

­tion that I have added For example, consider in Example 9:4 an argument, including a possible assumption that I have added (⅛), that makes use of her “thrice-repeated cry of astonishment and horror, ‘My husband!’”  
例如，在示例9:4中考虑一个论点，包括我添加的可能假设（⅛），利用了她三次重复的惊讶和恐惧的呼喊，'我的丈夫！'

Example 9:4

1. Emilia three times cried in a tone of astonishment and horror, “My husband!”[footnoteRef:18]  
   艾米莉亚惊讶和恐惧地喊了三次，我的丈夫！[[17]](#footnote-17)
2. [Possible assumption: If a woman cries “My husband!” three times in a tone of astonishment and horror when she has just been informed that her husband has done a villainous deed, then she did not suspect him of villainy.]
3. Emilia had just been informed that her husband had done a villainous deed. things done by terrorists, although I know in advance that there are terrorists and that they do dreadful things.  
   如果一个女人在刚刚被告知她的丈夫做了坏事时，以惊讶和恐惧的语气喊出“我的丈夫！”三次，那么她并没有怀疑他的恶行。

Bradley suggests that he has a proof beyond doubt. I feel that he is overstating his case. At least, as I have indicated, he does not have a deductively valid argument with true reasons. A sympathetic interpretation of his arguments applies the standards of best-explanation reasoning. The conclusion that she never dreamed that he was a villain could explain her crying “My husband!” three times in a tone of astonishment and horror. It could also explain her apparent choking indignation, her apparent failure to form suspicion of intrigue in the affair of the handkerchief, and the tone of the other speeches to which Bradley referred. All of this evidence also tends to make implausible the alternative hypotheses that she did suspect him of villainy. As a bestexplanation argument, the evidence can pile up, but here no one piece is conclusive.  
布拉德利认为他有无可置疑的证据。我觉得他夸大了他的论点。至少，正如我所指出的，他没有一个具有真实理由的演绎有效的论证。对他的论点的一种同情解释应用了最佳解释推理的标准。她从未想到他是一个恶棍的结论可以解释她惊讶和恐惧地三次大喊“我的丈夫！”。这也可以解释她明显的愤怒窒息，她明显没有对手帕事件产生怀疑的能力，以及布拉德利提到的其他演讲的语气。所有这些证据也倾向于使她怀疑他是恶棍的替代假设变得不可信。作为最佳解释的论证，证据可以堆积起来，但这里没有一件证据是决定性的。­­explanation argument, the evidence can pile up, but here no one piece is conclusive.

As usual, there is much more to be said. One interesting feature of this case is that Emilia is a fictional character. So the whole argument and interpretation takes place as if she were a real person.  
通常情况下，还有很多话要说。这个案例的一个有趣特点是Emilia是一个虚构的角色。因此，整个论点和解释都是以她是一个真实的人来进行的。

Another interesting feature is Bradley’s extreme confidence. If you read and discuss the play intensively, you might also decide that Bradley’s extreme confidence is unwarranted, as I did. But I am only trying to show you a way to look at much of the reasoning we do, and you might well judge his confidence warranted. In the enactments of Othello that I have seen, Iago was not interpreted as a melodramatic villain. Bradley’s view has apparently been generally accepted.  
另一个有趣的特点是布拉德利极度自信。如果你深入阅读和讨论这部剧，你可能也会认为布拉德利的极度自信是没有根据的，就像我一样。但我只是试图向你展示我们所做推理的一种方式，你可能会认为他的自信是有根据的。在我看过的奥赛罗的演出中，伊阿古并没有被解释成一个夸张的恶棍。布拉德利的观点显然被普遍接受。

Summary  
摘要

Deprived of the use of experiments, as we are for a variety of hypotheses, we still can use the best-explanation pattern of reasoning. The two-stage rejection of a hypothesis depends on other assumptions. The acceptance of a hypothesis depends on an elimination-of-other alternatives approach (using the same four criteria as with experiments) and is also dependent on assumptions. Both processes require a familiarity with details of the situation and knowledge of the sort of thing being studied. Often the reasoning must be loosened through the use of such words as probably and generally.  
由于无法进行实验，我们对各种假设的使用受到限制，但我们仍然可以使用最佳解释的推理模式。对假设的两阶段拒绝取决于其他假设。对假设的接受取决于排除其他替代方案的方法（使用与实验相同的四个标准），并且还依赖于假设。这两个过程都需要对情况的细节和所研究对象的了解。通常，推理必须通过使用"可能"和"一般"等词来放松。­sis depends on other assumptions. ­iments) and is also dependent on assumptions. Both

Evaluation of best-explanation conclusions is conveniently done by using the FRISCO approach. It is not a mechanical process. The elements, which are interdependent, are not necessarily applied in the order of presentation. They are applied, and often reapplied, in whatever order fits your developing grasp of the situation.  
最佳解释结论的评估可以通过使用FRISCO方法方便地完成。这不是一个机械的过程。这些相互依赖的元素不一定按照呈现的顺序应用。它们根据您对情况的逐渐理解而以任何适合的顺序应用，并经常重新应用。

Here is the basic strategy for best-explanation reasoning: Know w ell the topic or field of study. Given reasonable assumptions, search for the hypothesis that seems the best explanation. Discuss it with others. Be open to a probably temporary relaxation of what you think are the constraints in a situation. Look for alternative hypotheses. Look for evidence that is inconsistent with the various hypotheses, including the favored hypothesis. If only one hypothesis remains after a thorough search for counterevidence, then—perhaps very tentatively—accept it. If you have made a strong effort to uncover alternative hypotheses, and if it is the only possible explanation, all the others being clearly unacceptable, accept it. But be open to new evidence th⅛t might make the hypothesis dubious. If you find some, consider refining the hypothesis, but sometimes it is best just to abandon it.  
这是最佳解释推理的基本策略：熟悉主题或研究领域。在合理的假设下，寻找似乎是最佳解释的假设。与他人讨论。对于你认为是情境限制的约束条件，可能暂时放松一下。寻找替代假设。寻找与各种假设不一致的证据，包括被偏爱的假设。如果在彻底寻找反证后只剩下一个假设，那么——可能非常暂时地——接受它。如果你已经努力寻找替代假设，并且它是唯一可能的解释，其他所有解释都明显不可接受，那么接受它。但要对可能使假设成为可疑的新证据持开放态度。如果你找到了一些证据，考虑修正假设，但有时最好放弃它。­ation of what you think are the constraints in a situation. Look for alternative ­ing the hypothesis, but sometimes it is best just to abandon it.

­ing applies to historical hypotheses, who-done-it hypotheses, hypotheses about the state of mind and belief and intentions of people, and various other hypotheses about things that we cannot possibly (or easily) experience directly. Best-explanation rea­soning does not apply to value conclusions, though best-explanation conclusions are often relevant to them.Much of our reasoning is best-explanation reasoning. Best-explanation reasoning applies to historical hypotheses, who-done-it hypotheses, hypotheses about the state of mind and belief and intentions of people, and various other hypotheses about things that we cannot possibly (or easily) experience directly. Best-explanation reasoning does not apply to value conclusions, though best-explanation conclusions are often relevant to them.  
我们大部分的推理都是最佳解释推理。最佳解释推理适用于历史假设、谁做的假设、关于人的心态、信念和意图的假设，以及关于我们无法直接（或容易）体验到的其他事物的假设。最佳解释推理不适用于价值结论，尽管最佳解释的结论通常与它们相关。

­tion (explaining how), interpretive explanation (explaining the meaning of a term), and justification (explaining why something should be believed). Although these are often involved in account-for explanations, they are different and generally have dif­ferent criteria for success.The type of explanation of concern here is that in which the explanation is intended to account for something. Other types of explanation are process explanation (explaining how), interpretive explanation (explaining the meaning of a term), and justification (explaining why something should be believed). Although these are often involved in account-for explanations, they are different and generally have different criteria for success.  
关注的解释类型是指解释旨在解释某事。其他类型的解释包括过程解释（解释如何进行）、解释性解释（解释术语的含义）和理由解释（解释为什么应该相信某事）。尽管这些解释类型通常与解释某事相关，但它们是不同的，并且通常具有不同的成功标准。

­ship that includes mechanical as well as other kinds of bringing about. But some peo­ple feel that the word + The nature of the accounting-for relationship in best-explanation reasoning is complex and controversial. My view is that this accounting-for relationship is a causal relationship, construing causality quite broadly as a bringing-about kind of relationship that includes mechanical as well as other kinds of bringing about. But some people feel that the word cause indicates a mechanical relationship. If you feel this way, then stick simply with accounting-for as your interpretation of the type of explanation under discussion in this chapter. It will serve you well.  
会计解释推理中的会计关系的性质是复杂且有争议的。我的观点是，这种会计关系是一种因果关系，将因果关系广义地解释为一种包括机械和其他形式的因果关系。但有些人认为，词语“因果”表示一种机械关系。如果您持有这种观点，那么在本章讨论的类型解释中，只需简单地坚持使用“会计解释”即可。这将对您有所帮助。­tion under discussion in this chapter. It will serve you well.

Check-Up 9A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**9:1 In best-explanation reasoning, a conclusion receives support from its ability to explain facts that are offered in support of the conclusion.  
9:1 在最佳解释推理中，一个结论得到支持是因为它能够解释支持该结论的事实。**

**9:2 In best-explanation reasoning, the ability of a conclusion to explain (that is, account for) some facts proves it true.  
9:2 在最佳解释推理中，结论能够解释（即，解释）一些事实的能力证明其为真。**

**9:3 One way to cast doubt on a conclusion is to show that there are plausible alternative explanations of the facts explained by the conclusion.  
9:3 对一个结论产生怀疑的一种方法是展示出解释该结论的事实存在合理的替代解释。**­sible alternative explanations of the facts explained by the conclusion.

**9:4 If a conclusion satisfies the other criteria, then its being inconsistent with some evidence does not weaken its support.  
9:4 如果一个结论满足其他标准，那么它与某些证据不一致并不削弱它的支持。**

**9:5 The basic criteria for nonexperimental best-explanation hypothesis testing are the same as the criteria for experimental hypothesis testing.  
9:5非实验性最佳解释假设测试的基本标准与实验性假设测试的标准相同。**

Short Answer  
简答题

In each of the following arguments, underline the final conclusion twice, label the fact(s) it is supposed to explain with EF, label alternative hypotheses with AH, and label any evidence that is inconsistent with an alternative hypothesis IE, but only if you have identified an alternative hypothesis. If your instructor has not made another suggestion, either use a photocopy of this page or copy the items by hand.   
在以下每个论证中，将最终结论划线两次，用EF标记它所解释的事实，用AH标记替代假设，并且只有在你确定了替代假设时，用IE标记与替代假设不一致的证据。如果你的教师没有提出其他建议，要么使用这页的复印件，要么手写复制这些项目。

**9:6 Arlene did not intend to hurt him severely. That explains why the blow was of moderate force.  
9:6 阿琳并不打算重伤他。这就解释了为什么这一击力度适中。**

9:7 Sandra did not flinch when I told her that Karl was out with Martine last night. That’s why I think she knows already.  
9:7 Sandra告诉她昨晚Karl和Martine在外面时没有退缩。这就是为什么我认为她已经知道了。

**9:8 What is the problem? I’ll tell you. The fuel filter is clogged with dirt. That explains why the car will not run.  
9:8 问题是什么？我告诉你。燃油过滤器被污垢堵塞了。这就解释了为什么车子无法运行。**

**9:9 George Orwell’s intention in 1984 was to persuade the British that totalitarianism is bad. That explains why he depicted so many things that are offensive to the British people.  
乔治·奥威尔在《1984》中的意图是说服英国人极权主义是不好的。这就解释了为什么他描绘了那么多冒犯英国人的事物。**

**9:10 When I turn the key to my car, there is no sound. When I flip on the light switch, there is no light. When I turn on the radio, there is no sound or light. You might suspect that the battery connections are unhooked, but they are not. I looked. The car battery must be dead.  
9:10 当我转动车钥匙时，没有声音。当我打开灯开关时，没有灯光。当我打开收音机时，没有声音或灯光。你可能会怀疑电池连接松脱了，但实际上并没有。我查看了一下。车电池可能已经没电了。**

**9:11** “I see that you have been to the cemetery,” said the detective. “You have mud on your shoes that is the color of the mud at the cemetery. You arc perspiring. You look upset. And you have a hint of a sunburn. K you had gone to the movies, the sunburn you have would not be there.”

**9:12 Said by the prosecuting attorney in an attempt to show that Arlene was not engaged in self-defense: “Arlene wanted Al to follow her. That’s why she put his keys in her purse and zipped it closed. It’s not true that she wanted the use of his car. She did not like his car, and was afraid to drive it.”  
9:11我看到你去过墓地，"侦探说道。"你的鞋上有泥土，颜色与墓地上的泥土一样。你在出汗。你看起来心烦意乱。而且你有一点晒伤。如果你去看电影的话，你就不会有这个晒伤了。" "9:12控方律师为了证明阿琳不是在自卫，说道：阿琳希望阿尔跟着她。这就是为什么她把他的钥匙放在她的钱包里并拉上拉链。她并不想用他的车。她不喜欢他的车，也害怕开车。**

Medi in Answer

**9:13-9:19 For each of the Items 9:6 through 9:12, supply a possible alternative hypothesis to try to explain some or all of the evidence presented. Try to make it as plausible as you can. If one is already presented (as in 9:10), then suggest a different one. You may write it in above. Here is an example of the first one:  
9:13-9:19对于9:6至9:12的每一项，请提供一个可能的替代假设来解释所提供的一些或全部证据。尽量使其合理可信。如果已经提供了一个（如9:10），则建议提供另一个。您可以在上方编写它。这是第一个的示例：**

**9:13 (9:6) Arlene was weak at the time of the stabbing.  
9:13 (9:6) 阿琳在刺伤时很虚弱。**

**+ 9:20-9:26 For each of the alternative hypotheses you suggested in 9:13-9:19, imagine an evidence-assumption pair that would refute the alternative hypothesis (which you should repeat here). You might need to make up the evidence. Try to make it as plausible as you can. Note: the goal here is to give you practice in self-consciously identifying and formulating best-explanation evidence-assumption-refutation-of-hypothesis relationships to help you be more aware of the parts and their relationships to each other.  
9:20-9:26 对于你在9:13-9:19中提出的每个备选假设，想象一个可以反驳该备选假设的证据和假设对。你可能需要编造证据。尽量使其看起来可信。注意：这里的目标是让你练习自觉地识别和制定最佳解释的证据-假设-假设反驳关系，以帮助你更加了解各个部分及其之间的关系。**­lating best-explanation evidence-assumption-refutation-of-hypothesis relationships to help ­

Please do this on a separate piece of paper. Here is an example pair for the first one, preceded by the alternative hypothesis:  
请在一张独立的纸上完成这个任务。这是第一个例子对，前面是备选假设。

**9:20 (9:6, 9:13) Alternative hypothesis: Arlene was weak at the time of the stabbing. Imagined counter-evidence: Arlene is muscular, weighs about 130 pounds, and was in good health at the time.  
9:20 (9:6, 9:13) 替代假设：阿琳在刺伤时身体虚弱。想象的反证据：阿琳肌肉发达，体重约130磅，并且当时身体状况良好。**

Assumption: If someone is muscular, weighs about 130 pounds, and is in good he<dth, that person is probably not weak   
假设：如果一个人肌肉发达，体重约为130磅，并且身体健康，那么这个人可能不是弱者。

Longer Answer  
更长的答案

In Items 9:27 through 9:31, for each piece of information, tell whether, if true, it would support the hypothesis, weaken it, or neither, and tell why you think so. Because the situations are so complex and the information can be construed in various ways if considered all by itself, there is generally no one right answer to these items. They are offered to give you practice in relating evidence to best-explanation hypotheses, and in justifying your decisions.  
在第9:27至9:31项中，对于每一条信息，请告知它是否支持假设、削弱假设还是两者都不是，并解释你的理由。由于情况非常复杂，如果仅仅考虑信息本身，它可以被解释为多种方式，因此通常没有一个正确的答案。这些问题旨在让你练习将证据与最佳解释假设联系起来，并为你的决策提供理由。

­9:27 A popular hypothesis offered in explanation of the destruction of the dinosaurs, which is believed by many people to have happened 65 million years ago, is that a large meteor hit the earth 65 million years ago. Possibly, the resulting explosion created a large dark cloud that enveloped the earth for many years and shut off the sun, thus stopping photosynthesis and shutting down the dinosaurs’ food supply, resulting in their starving to death.  
9:27 一个被许多人认为发生在6500万年前的恐龙灭绝的流行假设是，一颗巨大的陨石在6500万年前撞击了地球。可能的是，由此引发的爆炸形成了一个巨大的黑云，笼罩了地球多年并遮蔽了阳光，从而停止了光合作用，使恐龙的食物供应中断，导致它们饿死。­ing in their starving to death.

1. An exceptionally large amount of iridium is found in the layers of the sea supposedly formed about 65 million years ago. Iridium is found in meteors in much higher concentrations than on the earth’s surface. Does this support the hypothesis? Weaken it? Neither? Why?  
   据称形成于约6500万年前的海层中发现了异常丰富的铱。铱在陨石中的浓度比地球表面高得多。这是否支持假设？削弱它？还是两者都不是？为什么？
2. It is determined that lava flow from volcanoes also contains a heavy concentration of iridium. Support? Weaken? Neither? Why?  
   确定火山喷发的熔岩流也含有高浓度的铱。
3. The fossil record suggests that there were a number of small mammals developing at that time. These mammals did not die off at that time, and were presumably capable of stealing dinosaur eggs. Support? Weaken? Neither? Why?  
   化石记录表明，在那个时候有许多小型哺乳动物在发展。这些哺乳动物并没有在那个时候灭绝，很可能有能力偷走恐龙蛋。支持？削弱？两者都不是？为什么？
4. It is believed that dinosaurs were cold blooded, meaning that they depended on the climate to keep warm. It is also believed that the shutting off of the sun by the cloud would have resulted in a severe winter lasting for many years. Support? Weaken? Neither? Why?  
   相信恐龙是冷血动物，意味着它们依赖气候来保持温暖。同时，相信云层遮挡太阳会导致持续多年的严寒冬季。支持？削弱？两者都不是？为什么？
5. It is determined that all of our dating procedures are radically in error, suggesting that the dinosaurs died off only about 3,300 years ago and the layer of iridium was formed 3,300 years ago. Support? Weaken? Neither? Why?  
   我们确定我们所有的约会程序都存在严重错误，这表明恐龙灭绝只发生在大约3300年前，铱层形成于3300年前。支持？削弱？两者都不是？为什么？

9:28 Some historians have concluded that Napoleon died from arsenic poisoning administered by his own countrymen when he was in exile on St. Helena Island.  
9:28 一些历史学家得出结论，拿破仑在流亡圣赫勒拿岛期间死于自己的同胞投毒所致的砷中毒。­

1. A sample of Napoleon’s hair obtained while he was at St. Helena, but recently analyzed using a new technique employing nuclear bombardment, contains an abnormally large amount of arsenic. Arsenic poisoning leaves its traces in human hair. Support? Weaken? Neither? Why?  
   拿破仑在圣赫勒拿岛期间获得的一缕头发样本，最近使用核轰击技术进行分析，发现含有异常高量的砷。砷中毒在人体头发中留下痕迹。支持？削弱？都不是？为什么？
2. An alternative hypothesis is that he died of cancer, but some of his symptoms were nausea, chills, weakness, and increasing corpu lence. These symptoms are judged by a cancer specialist not to be symptoms of cancer. Support? Weaken? Neither? Why?  
   一个替代的假设是他死于癌症，但他的一些症状包括恶心、寒战、虚弱和体重增加。一位癌症专家认为这些症状不是癌症的症状。支持？削弱？都不是？为什么？­
3. These symptoms are deemed by an expert in arsenic poisoning to be typical symptoms of arsenic poisoning. Support? Weaken? Neither? Why?  
   这些症状被砷中毒专家认为是砷中毒的典型症状。支持？削弱？两者都不是？为什么？
4. A contemporary well-known French historian who teaches at the Sorbonne states that there is nothing to the arsenic poisoning story. Support? Weaken? Neither? Why?  
   一位当代知名的法国历史学家，在索邦大学任教，表示对于砒霜中毒的故事并无根据。支持？削弱？两者皆非？为什么？
5. It is established that arsenic in regular doses that are not noticeable to the recipient can kill the recipient. Support? Weaken? Neither? Why?  
   已经确定，对于接受者来说，不易察觉的常规剂量中的砷可以致命。支持？削弱？都不是？为什么？­able to the recipient can kill the recipient. Support? Weaken? Neither? Why?

**9:29 Dr. Frank Sulloway has recently advocated a hypothesis about the impact of being first-born among siblings, as compared to being later- born: First-borns tend to be conservative with respect to their immediate surroundings, whereas later-borns tend to revolt against the accepted views of their immediate surroundings. Consider each of the following pieces of evidence for its bearing on the hypothesis (which I have simplified a bit in order to make things more manageable).  
9:29 Dr. Frank Sulloway最近提出了一个关于长子与晚辈之间影响的假设：长子倾向于保守对待他们周围的环境，而晚辈则倾向于反抗他们周围被接受的观点。考虑以下每个证据对该假设的影响（我稍微简化了一下以便更容易处理）。**­ate surroundings, whereas later-borns tend to revolt against the accepted views of their immediate surroundings. Consider each of the following pieces of evidence for its bearing on the hypothesis (which I have simplified a bit in order to make things more manageable).

1. The following people are later-borns: Charles Darwin, Rachel Carson, Karl Marx, Lenin, Fidel Castro, Ho Chi Minh, Marlon Brando, and George Eliot (female author of Silas Marner who abandoned religion and lived adulterously with a married man). Support? Weaken? Neither? Why?  
   以下人士是后出生者：查尔斯·达尔文，瑞秋·卡森，卡尔·马克思，列宁，菲德尔·卡斯特罗，胡志明，马龙·白兰度，以及乔治·艾略特（《希拉斯·马纳》的女性作者，放弃宗教并与已婚男子通奸）。支持？削弱？两者都不是？为什么？
2. ­tion were predominantly first-born, including Robespierre, whereas The leaders of the extended reign of terror in the French Revolution were predominantly first-born, including Robespierre, whereas the ones killed by the guillotine were mostly later-born, including Danton, originally a revolutionary who began to feel that the revolution was going too far. Support? Weaken? Neither? Why?  
   法国大革命中，长时间恐怖统治的领导人主要是长子，包括罗伯斯庇尔，而被断头台处决的人大多是次子，包括达东，他原本是一位革命者，但后来开始感觉革命走得太远了。支持？削弱？都不支持？为什么？­olution was going too far. Support? Weaken? Neither? Why?
3. Over the ages, first-borns were preferred by parents over the younger later-borns, and were given more privileges and greater inheritances because the first-borns would sooner be mature and able to help and were already past the greatest life-threatening dangers to children. Therefore, first-borns found it expedient to adopt the existing structure in the family or society. Support? Weaken? Neither? Why?  
   多年来，父母更喜欢长子而不是年幼的后生子女，并给予长子更多的特权和更大的继承权，因为长子更早成熟并能够提供帮助，而且已经度过了对孩子最具生命威胁的危险期。因此，长子们发现采用家庭或社会中现有的结构是有利可图的。支持？削弱？两者都不是？为什么？
4. Sir Isaac Newton, who developed a new theory in physics that was dominant until Einstein’s relativity, was a first-born. As a youth, Sir Isaac Newton hated his stepfather. Support? Weaken? Neither? Why?  
   艾萨克·牛顿爵士是一位物理学家，他提出了一种新的理论，直到爱因斯坦的相对论出现之前一直占主导地位。他是长子。年轻时，艾萨克·牛顿爵士讨厌他的继父。支持？削弱？两者都不是？为什么？
5. Carlos, the Jackal, an international terrorist, was a first-born. His father was a deeply committed Marxist. Support? Weaken? Neither? Why?  
   卡洛斯，杰克尔，国际恐怖分子，是长子。他的父亲是一个坚定的马克思主义者。支持？削弱？都不是？为什么？
6. There are those who are neither first-born nor later-born because they were the only child.   
   没有长子也没有次子的人，因为他们是独生子。
7. You, the reader, Are you first-born, later-born, or neither:1 Support? Weaken? Neither? Why?  
   你，读者，你是长子、次子还是既非长子也非次子：1 支持？削弱？还是两者都不是？为什么？

**9:30 In a period of five weeks in 1987, fourteen humpback whales died in the Cape Cod, Massachusetts, area. Under ordinary conditions, it would take about fifty years for this many humpback whales to die in this area. What happened? A hypothesis advanced by Donald Anderson of the Woods Hole Oceanographic Institution is that they died from “red tide” (more specifically, paralytic saxitoxin produced by the dinoflagellate Alexandrium tamarense), which entered the whales’ bodies in the mackerel and other fish that they ate while migrating.  
1987年的五个星期内，麻省海角码头地区有十四只座头鲸死亡。在正常情况下，要在这个地区死亡这么多座头鲸需要大约五十年的时间。发生了什么？伍兹霍尔海洋研究所的唐纳德·安德森提出的一个假设是它们死于赤潮（更具体地说是由甲藻属植物产生的麻痹性腥毒素进入座头鲸体内，这些毒素通过它们在迁徙过程中所吃的鲭鱼和其他鱼类传入）。**

1. They did not die of hunger because they had abundant blubber and fish in their stomachs when they died. Support? Weaken? Neither? Why?  
   他们没有因为饥饿而死亡，因为他们在死亡时胃里有丰富的脂肪和鱼。支持？削弱？都不是？为什么？
2. They did not die of poison gas leaking from a nearby sunken submarine because there were no sunken submarines in the area. Support? Weaken? Neither? Why?  
   他们没有死于附近沉没的潜艇泄漏的毒气，因为该地区没有沉没的潜艇。支持？削弱？两者都不是？为什么？­marine because there were no sunken submarines in the area. Support? Weaken? Neither? Why?
3. The minimum lethal dose of saxitoxin for humans is seven to sixteen micrograms per kilogram of body weight. The whales’ flesh contained an average of only 3.2 micrograms per kilogram of body weight. Support? Weaken? Neither? Why?  
   人类的最小致命剂量为每公斤体重七到十六微克的沙利度毒素。鲸鱼肉中平均含有每公斤体重仅为3.2微克的沙利度毒素。支持？削弱？都不是？为什么？­teen micrograms per kilogram of body weight. The whales’ flesh contained an average of only 3.2 micrograms per kilogram
4. Almost all of the saxitoxin in the mackerel was found in the mackerel’s livers and kidneys rather than in their flesh. Support? Weaken? Neither? Why?  
   几乎所有鲭鱼中的毒腺毒素主要存在于其肝脏和肾脏，而不是肉中。支持？削弱？两者都不是？为什么？­
5. Livers and kidneys in animals capture, metabolize, and excrete saxitoxin. Support? Weaken? Neither? Why?  
   动物的肝脏和肾脏会吸收、代谢和排泄沙星毒素。
6. E ach time whales dive, much larger amounts of blood and oxygen are sent to the heart and brain, bypassing the liver and kidney. Support? Weaken? Neither? Why?  
   每次鲸鱼潜水时，更大量的血液和氧气被送到心脏和大脑，绕过了肝脏和肾脏。支持？削弱？都不是？为什么？

**9:31 In Shakespeare’s Hamlet, the part of Polonius is, in my experience, usually played as a silly old fool. A hypothesis that has been advanced by a close associate of mine is that, instead of being a silly old fool, he is a sensible person, though set in his ways, who has adapted to the political pressures of serving a monarchy, just as many people these days try to seem agreeable to people in power and try not to rock the boat. Consider these pieces of evidence from the play and decide their bearing on my associate’s hypothesis, defending your judgment.  
9:31 在莎士比亚的《哈姆雷特》中，波洛尼厄斯一角，在我的经验中，通常被演绎成一个愚蠢的老傻瓜。我的一位亲密伙伴提出的一个假设是，他并不是一个愚蠢的老傻瓜，而是一个明智的人，虽然固执己见，但已经适应了为君主服务的政治压力，就像现在很多人试图对权力人物表示同意，努力不搅局一样。请考虑以下剧中的证据，并根据我的伙伴的假设进行判断，为你的判断辩护。**

1. Hamlet, a sensitive person, several times refers to Polonius as a fool: “These tedious old fools” (II, ii). “Let the doors be shut upon him, that he may play the fool nowhere but in's own house” (III, i). “Thou wretched, rash, intruding fool” (III, iv). Support? Weaken? Neither? Why?  
   哈姆雷特，一个敏感的人，多次将波洛尼厄斯称为傻瓜：这些乏味的老傻瓜们（第二幕，第二场）。让门紧闭在他身后，让他只能在自己的家里扮演傻瓜（第三幕，第一场）。你这个可怜的、冒失的、冒犯的傻瓜（第三幕，第四场）。支持？削弱？两者都不是？为什么？
2. In the play, Polonius formulates a possible alternative explanation for Hamlet’s behavior (alternative to the new king’s explanation that Hamlet is upset about the murder of Hamlet’s father—the former king—and the quick remarriage of his mother to the new king). Polonius’ alternative explanation is that Hamlet is upset about his rejection in love by Ophelia (Polonius’ daughter), who has been told by Polonius to stay clear of Hamlet. Support? Weaken? Neither? Why?  
   在这个剧中，波洛尼厄斯提出了一个可能的替代解释，来解释哈姆雷特的行为（这个解释与新国王的解释相反，新国王认为哈姆雷特对他父亲（前国王）的谋杀和他母亲与新国王的快速再婚感到不满）。波洛尼厄斯的替代解释是，哈姆雷特对奥菲利亚（波洛尼厄斯的女儿）拒绝他的爱感到不满，而波洛尼厄斯曾告诉奥菲利亚要远离哈姆雷特。支持？削弱？都不是？为什么？
3. Polonius gives sensible advice to his departing son, Laertes, including these bits of wisdom:  
   波洛尼厄斯给他即将离去的儿子莱尔提斯一些明智的建议，其中包括以下智慧之言：

P»c thou familiar, but by no means vulgar.

Those friends thou hast, and their adoptions tried, Grapple them unto thy soul with hoops of steel, But do not dull thy palm with entertainment  
那些朋友你拥有，以及他们的认可，用钢圈将他们紧紧地拴在你的灵魂上，但不要用娱乐消磨你的手掌

Of each new-hatched, unfledged courage [spirited person]. Beware  
每个新孵化的、未长羽毛的勇气[有活力的人]。小心

Of entrance to a quarrel; but being in, Bear’t that th’ opposed may beware of thee. Give every man thine ear, but few thy voice; Take each man’s censure, but reserve thy judgment. . . . Neither a borrower nor a lender be, For loan oft loses both itself and friend, And borrowing dulleth edge of husbandry.  
入场时要小心争吵；但一旦参与其中，对手应该小心你。倾听每个人的意见，但保持沉默；接受每个人的批评，但保留自己的判断。……不要借钱，也不要借给别人，因为借贷常常会失去自己和朋友，而且借贷会削弱经济的力量。

This above all, to thine own self be true, And it must follow as the night the day Thou canst not then be false to any man. [I, iii]  
最重要的是，要忠于自己，如同夜晚跟随白天一样，你就不会对任何人虚伪。[I，iii]

Support? Weaken? Neither? Why?  
支持？削弱？两者都不是？为什么？

1. Polonius also gives his son the following advice at the same time:  
   波洛尼厄斯同时也给了他的儿子以下的建议：

Cosdy thy habit as thy purse can buy, But not in fancy; rich, not gaudy, For the apparel oft proclaims the man, And they in France of the best rank and station Are of a most select and generous chief [eminence] in that.  
穿着根据你的钱包来打扮，但不要过于花哨；要富有，但不要俗气，因为服装常常能显示一个人的身份，而在法国，最好的阶级和地位的人们都以最优秀和慷慨的特质著称。

[I, iii]

Support? Weaken? Neither? Why?  
支持？削弱？两者都不是？为什么？

1. Polonius forgets what he was saying when giving instructions to his agent: “What was I about to say? By the mass, I was about to say something! Where did I leave?” (II,i). Support? Weaken? Neither? Why?  
   波洛尼乌斯在给他的代理人指示时忘记了他要说什么：我刚才要说什么来着？天哪，我刚刚要说什么！我把它放在哪里了？（第二幕，第一场）。支持？削弱？都不是？为什么？
2. When Hamlet mimics and makes fun of him, Polonius does not react angrily:  
   当哈姆雷特模仿并嘲笑他时，波洛尼斯并没有生气。

Polonius: My lord, I have news to tell you.  
波洛尼乌斯：我主，我有消息要告诉您。

Hamlet: My lord, I have news to tell you. . . .   
哈姆雷特： 我的主，我有消息要告诉您。. . . .

Polonius: The actors are come hither, my lord.  
波洛尼斯：演员们来了，我的主。

Buzz,Hamlet: Buzz, buzz.  
嗡嗡声，嗡嗡声。

Polonius: Upon my honor— [∏,ii]

Support? Weaken? Neither? Why?  
支持？削弱？两者都不是？为什么？

1. Polonius realizes that there is something reasonable behind Hamlet’s wild talk:  
   波洛尼厄斯意识到哈姆雷特的疯言疯语背后有一些合理的东西。

Hamlet: . . . The satirical rogue says here that old men have  
哈姆雷特：...这个讽刺的流氓在这里说老人们有

grey beards, that their faces are wrinkled, their eyes purging thick amber and plum-tree gum, and that they have a plentiful lack of wit, together with most weak hams. All of which, sir, though I most powerfully and potently believe, yet I hold it not honesty to have it thus set down, for you yourself, sir, should be old as I am if, like a crab, you could go backward.  
灰色胡须，他们的脸上皱纹纹丝不动，眼睛流出浓郁的琥珀和李子树胶，而且他们非常缺乏智慧，还有非常虚弱的火腿。尽管我非常强烈而有力地相信这一切，但我认为这样写下来是不诚实的，因为如果您自己能像螃蟹一样倒退，您应该和我一样年老。­erfully and potently believe, yet I hold it not hon­esty to have it thus set down, for you yourself, sir, should be old as I am if, like a crab, you could go backward.

Polonius: [aside] Though this be madness, yet there is method in’t.  
波洛尼乌斯：[旁白] 虽然这是疯狂的，但仍有一种方法。

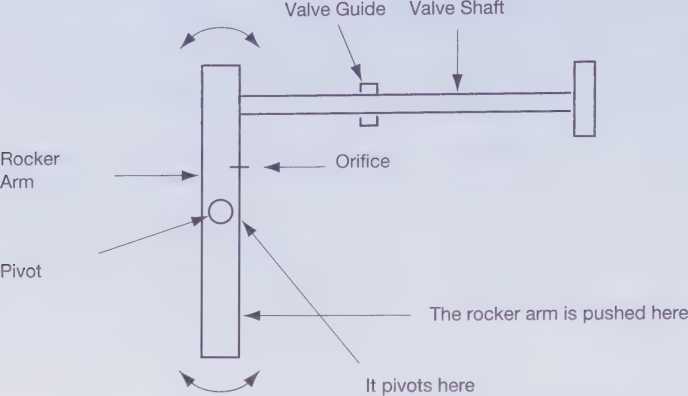
Support? Weaken? Neither? Why?  
支持？削弱？两者都不是？为什么？

9:32 There have been many reports (but only during the last five years) of premature wearing of the valve guides in certain piston engines (made by Manufacturer XYZ) of small aircraft. The valve guides are circular devices that hold the shafts of valves that either open to admit the airgasoline mixture into the cylinder (the intake valve), or to let the burned gases out of the cylinder (the exhaust valve). The valve itself consists of a shaft that rides back and forth in the valve guide and an enlarged, roughly flat head that can close or open a hole into the cylinder, depending on the valve’s position. One hypothesis is that rocker arms (that push the shafts of the valves) for exhaust valves were sometimes installed for intake valves, and vice versa, placing the oilemitting orifice in the wrong place in each case, resulting in insufficient oil getting to the associated valve guide. Incidentally, the two rocker arms per cylinder are in a rocker arm box, one per cylinder.  
9:32 在过去的五年中，关于某些小型飞机（由制造商XYZ制造）的某些活塞发动机的气门导向圈过早磨损的报告很多。气门导向圈是圆形装置，用于固定气门的轴，这些气门要么打开以使空气汽油混合物进入气缸（进气门），要么打开以使燃烧废气排出气缸（排气门）。气门本身由一个在气门导向圈内前后运动的轴和一个扩大的、粗糙的平头组成，根据气门的位置，它可以关闭或打开气缸中的孔。有一个假设是，排气门的摇臂（用于推动气门轴）有时会被安装在进气门上，反之亦然，导致每种情况下的油润滑孔位置错误，导致油润滑到相关的气门导向圈不足。顺便提一下，每个气缸有两个摇臂，它们位于一个摇臂箱中，每个气缸一个。­­emitting ­

See the drawing for the general relationship between a rocker arm, a valve shaft, and a valve guide.  
请参考图纸，了解摇臂、气门轴和气门导管之间的一般关系。

1. The rocker arms for exhaust valves look identical to those of the intake valve, except for the placement of the small oil-emitting orifice, which supplies oil to the associated valve guide.  
   排气阀的摇臂与进气阀的摇臂看起来完全相同，除了小型油喷孔的位置不同，该喷孔向相关的气门导向套提供油润滑。
2. On inspection, five engines with premature wearing of one or more valve guides were found to have exhaust-valve rocker arms installed in the place of intake rocker arms in the position associated with the affected valve guides.  
   在检查过程中，发现有五台发动机的一个或多个气门导向套出现过早磨损的情况，这些发动机的进气摇臂被安装在与受影响的气门导向套相关的位置上。­ated with the affected valve guides.
3. Some engines with premature wear on the intake valve guides   
   一些发动机进气阀导向套件磨损过早。

SCHEMATIC DRAWING  
原理图绘制



­tions. (There are eight rocker arms on a four-cylinder engine, two per cylinder.)were found to have the correct rocker arms installed in all positions. (There are eight rocker arms on a four-cylinder engine, two per cylinder.)  
在所有位置上都发现安装了正确的摇臂。（四缸发动机上有八个摇臂，每个气缸有两个。）

1. Some engines had guides so heavily worn that they needed replacement after only 300 hours of operation (2,000 hours is expected minimum time). The rocker arms on these engines were in the correct places. That is, the intake and exhaust rocker arms were not exchanged.  
   一些发动机的导向件磨损严重，仅在运行300小时后就需要更换（预计最低使用时间为2,000小时）。这些发动机上的摇臂位置正确，即进气和排气摇臂没有互换。
2. It is learned that, about five years ago, manufacturer XYZ changed its valve guide manufacturing methods, and at least one production run of valve guides for the affected type of engine used a slightly different kind of steel.  
   据了解，大约五年前，制造商XYZ改变了其阀导管的制造方法，并且至少有一批受影响的发动机类型的阀导管使用了稍微不同种类的钢材。
3. On three engines, the valve guides on two cylinders show severe wear, whereas the other cylinders’ guides show practically no wear. It is assumed that all the guides for these three engines (which were fairly new) were from the same production run.  
   在三个发动机上，两个汽缸的气门导管显示出严重磨损，而其他汽缸的导管几乎没有磨损。假设这三个发动机的所有导管（它们都是相当新的）来自同一批生产。
4. Manufacturer XYZ changed the size of its valve shafts from 7Λδ inch to ½ inch. Some mechanics suggest that this change could have caused the excessive wear.  
   制造商XYZ将其阀轴的尺寸从7Λδ英寸改为½英寸。一些机械师认为这种变化可能导致了过度磨损。
5. The change in valve shaft size occurred about thirty years ago.  
   阀门轴尺寸的变化发生在大约三十年前。
6. Excessive valve guide wear is found only in parallel valve XYZ engines, although the valve shaft size change was implemented in other types of engines as well.  
   只有平行气门XYZ发动机才会出现过度气门导向套磨损，尽管气门轴尺寸的变化也在其他类型的发动机中实施了。
7. On two engines (of the affected type with four cylinders and two rocker arms—in a rocker arm box—per cylinder) with correctly installed rocker arms, it is found that actual oil flow to the rocker arm boxes varies radically for different cylinders, with the pattern being haphazard. No oil was found after the first minute of idling operation. After two minutes of idling, two of the rocker arm boxes still had received no oil. After five minutes of mediumspeed operation and two minutes of idling, the same two rocker arm boxes had received about 1/3 and 1/9 respectively of the amount of oil received by the other two rocker arm boxes.  
   在两个引擎上（受影响的类型，每个气缸有四个气缸和两个摇臂，位于一个摇臂箱中），在正确安装的摇臂上，发现不同气缸的摇臂箱实际的油流量差异很大，模式是杂乱的。在怠速运行的第一分钟后没有发现油。在怠速运行两分钟后，两个摇臂箱仍然没有接收到油。在中速运行五分钟和怠速运行两分钟后，这两个摇臂箱分别接收到了其他两个摇臂箱接收到的油量的1/3和1/9。­

**9:33 In a book, newspaper, or magazine, or a speech or conversation that you can record in writing, find a presentation of a best-explanation conclusion together with evidence it supposedly explains.  
9:33 在一本书、报纸或杂志中，或者在一篇可以用书面形式记录的演讲或对话中，找到一个陈述了最佳解释结论并附带据以解释的证据的表述。**

1. Attach it or a copy.  
   附上它或一份副本。
2. Underline the best-explanation conclusion, label the facts it is supposed to explain with EF, label any alternative hypotheses with AH, and label any evidence that is inconsistent with any suggested alternative hypotheses IE.  
   划线标出最佳解释的结论，用EF标记它所解释的事实，用AH标记任何替代假设，并用IE标记与任何提出的替代假设不一致的证据。
3. If no alternate possible explanations are offered that are inconsistent (given certain assumptions) with some evidence that is presented, then suggest one.  
   如果没有提供与某些呈现的证据不一致（在某些假设下）的其他可能解释，那么请提出一个。­­sented, then suggest
4. State an assumption that would probably be made in showing each alternative hypothesis to be inconsistent with the evidence. If you have trouble finding a best-explanation argument, look at the range of questions in the first paragraph of this chapter.  
   陈述一个假设，该假设可能与证据不一致，以显示每个替代假设的不一致性。如果您在寻找最佳解释的论证时遇到困难，请查看本章第一段中的问题范围。

Arguments that support answers to these and similar questions are likely to be best-explanation arguments.  
支持对这些问题及类似问题的答案的论据很可能是最佳解释论证。

**9:34 Apply the FRISCO approach to the argument in support of the conclusion about Polonius in 9:31 and report your results in writing element by element. In doing 9:31, you have already completed some of the elements. Be prepared to present the argument and your analysis to your class or group in an interesting way.  
9:34 将FRISCO方法应用于对9:31中Polonius的结论的支持论点，并逐个元素地以书面形式报告你的结果。在进行9:31时，你已经完成了一些元素。准备好以有趣的方式向你的班级或小组呈现论点和分析。**­clusion about Polonius in 9:31 and report your results in writing ele­ment

Necessarily Following:  
必须遵循

Deductive Versus Best-Explanation  
演绎与最佳解释

Inference and General Argument Strategy  
推理和一般论证策略

In best-explanation reasoning, the conclusion does not necessarily follow from the evidence. If it did, then we could just go directly from the evidence to the conclusion (deducing the conclusion) and not worry about the explanatory power of the conclusion. The strategy in best-explanation reasoning is basically a process of showing that one possible conclusion could explain the evidence and eliminating other possible explanations as implausible, leaving only the one. But the conclusion does not necessarily follow from the evidence because one of the assumptions might be incorrect and because there might be still another plausible explanation that has not yet occurred to us.  
在最佳解释推理中，结论不一定从证据中得出。如果是这样的话，我们可以直接从证据得出结论（推断结论），而不必担心结论的解释力。最佳解释推理中的策略基本上是一个过程，即展示一个可能的结论可以解释证据，并排除其他可能的解释，使其不合理，只留下一个解释。但结论不一定从证据中得出，因为其中一个假设可能是错误的，因为可能还有另一个合理的解释尚未想到我们。­clusion. ­ble ­

It does not necessarily follow from the depth of the wound and the lack of marks on the bones that the blow was moderate. Those reasons, which were the ones mentioned by the pathologist, do not rule out the possibility, for example, that the victim was wearing a medallion that deflected and reduced the strength of the blow. This alternative hypothesis did not occur to the jurors. If it had, it would probably have been rejected for the following reasons: If Al were wearing a medallion, then its presence would probably have been mentioned in the trial and its presence was not mentioned. In any case, we could not be absolutely certain that there were no other possibilities, so the conclusion did not follow necessarily from what she said.  
伤口的深度和骨头上没有痕迹并不一定意味着打击力度适中。这些原因是病理学家提到的，但并不排除以下可能性：例如，受害者可能戴着一枚折射和减轻打击力度的奖章。陪审团没有考虑到这个替代假设。如果考虑到了，可能会因以下原因被拒绝：如果艾尔戴着奖章，那么在审判中可能会提到它的存在，但实际上没有提到。无论如何，我们无法完全确定没有其他可能性，所以结论并不必然地从她所说的得出。

A Possible Alternative: Transformation into a Deductively Valid Argument  
一个可能的替代方案：转化为演绎有效的论证

Suppose instead that we transform the reasoning into deductively valid reasoning by adding a goal-filling reason as an assumption, shown in brackets:  
假设我们将推理转化为演绎有效的推理，通过添加一个目标填充的理由作为假设，用括号表示：

Example 9:5

1. The wound caused by the knife stroke was only 2.5 inches deep.  
   刀伤导致的伤口只有2.5英寸深。
2. There were no marks on the nearby chest bones.  
   附近的胸骨上没有任何痕迹。
3. [If a wound caused by a knife stroke is only 2.5 inches deep, and there are no marks on nearby chest bones, then the stroke was only of moderate force.] d. Therefore, the stroke was only of moderate force.  
   如果刀伤只有2.5英寸深，并且附近的胸骨上没有痕迹，那么这一刀只是中等力度的。

By adding an appropriate reason (c), we have transformed the argument into one that is deductively valid. But that does not make the argument a good one because the added reason is not true. The medallion possibility shows this.  
通过添加一个适当的理由(c)，我们将这个论证转化为一个演绎有效的论证。但这并不意味着这个论证是一个好的论证，因为添加的理由是不真实的。奖章的可能性证明了这一点。

You can probably see from Example 9:5 (and from your experience with the items in Chapter 7) that you can transform any argument into a deductively valid one by adding a reason of the right sort. However, often a bad argument is produced because the argument often then contains a false reason. The deductive validity does not help the argument at all. Best-explanation is often then the best approach.  
你可能可以从示例9:5（以及你在第7章中对项目的经验）中看出，通过添加正确类型的理由，你可以将任何论证转化为演绎有效的论证。然而，通常会产生一个糟糕的论证，因为该论证经常包含一个错误的理由。演绎有效性对论证没有任何帮助。最佳解释通常是最好的方法。

Choosing Between the Best-Explanation Approach and the Deductive and Other Approaches  
在最佳解释方法和演绎和其他方法之间做出选择

­explanation, generalization, and value judging—the last two of which have not yet been discussed in this book), we should choose the way of looking at the argument that gives the strongest support for the conclusion. If the argument, even when viewed in a way that makes it look its strongest, still does not provide strong enough support, then it does not succeed. However, if, when looked at in some way, it does provide sufficient support, then it succeeds.Usually, when judging an argument, our purpose is to decide whether the conclusion is true or sufficiently well-established. Assume this to be our purpose. Because there are various ways of looking at an argument (deductive, loose deductive, bestexplanation, generalization, and value judging—the last two of which have not yet been discussed in this book), we should choose the way of looking at the argument that gives the strongest support for the conclusion. If the argument, even when viewed in a way that makes it look its strongest, still does not provide strong enough support, then it does not succeed. However, if, when looked at in some way, it does provide sufficient support, then it succeeds.  
通常，当评判一个论点时，我们的目的是判断结论是否真实或足够确立。假设这是我们的目的。因为有多种观察论点的方式（演绎、宽松演绎、最佳解释、概括和价值判断——最后两种方式尚未在本书中讨论），我们应该选择观察论点的方式，以最有力地支持结论。如果论点即使以最有力的方式观察，仍然无法提供足够的支持，那么它就不成功。然而，如果以某种方式观察，确实提供了足够的支持，那么它就成功了。

If we can make an argument into a deductively valid argument bv supplying it with additional reasons (in the form of assumptions) that arc true, and if the original reasons arc true, then we should take that route and accept the argument and the conclusion. We would then have shown that the conclusion follows necessarily from true reasons, and thus would have shown the conclusion to be true. What could be better than that?  
如果我们能够通过提供额外的真实前提（以假设的形式）来使一个论证成为演绎有效的论证，并且如果原始的理由是真实的，那么我们应该选择这条路线并接受这个论证和结论。这样，我们就能够展示结论必然地从真实的理由中得出，并且从而证明了结论的真实性。还有什么比这更好的呢？

But often any set of reasons that we can invent to produce deductive validity includes a false reason. Then the best-explanation approach can be the one to use. It can produce well-established conclusions, as it has done for most scientific conclusions. A familiar example of a well-established best-explanation conclusion is the prosecutor’s conclusion that Arlene killed Al. See the beginning of Chapter 2 for a complex best-explanation argument in support of this conclusion advanced by the prosecutor. Best-explanation conclusions are sometimes very strongly supported, even though they do not follow necessarily from the evidence or true assumptions. The prosecutor’s conclusion was very well-established. It was proven beyond a reasonable doubt, the best kind of proof you can get for a best-explanation conclusion, but the conclusion did not follow necessarily.  
但通常我们所能想出的任何一组理由来产生演绎有效性都包含了一个错误的理由。那么最佳解释方法可能是一个可以使用的方法。它可以产生确立的结论，就像它对大多数科学结论所做的那样。一个熟悉的确立的最佳解释结论的例子是检察官得出的阿琳杀死艾尔的结论。请参阅第2章开头，了解检察官提出的支持这个结论的复杂最佳解释论证。最佳解释结论有时候得到了非常强有力的支持，即使它们并不必然地从证据或真实的假设中得出。检察官的结论是非常确立的。它经过了合理怀疑的证明，这是你可以为最佳解释结论得到的最好的证明，但这个结论并不必然地成立。­sions. A familiar example of a well-established best-explanation conclusion is the pros­ecutor’s conclusion that Arlene killed Al. See the beginning of Chapter 2 for a com­plex best-explanation argument in support of this conclusion advanced by the prosecutor. Best-explanation conclusions are sometimes very strongly supported, even though they do not follow necessarily from the evidence or true assumptions. The prosecutor’s conclusion was very well-established. ­sonable doubt, the best kind of proof you can get for a best-explanation conclusion, but the conclusion did not follow necessarily.

Another familiar example is the pathologist’s argument for her conclusion that the knife stroke was of moderate force. This also is best-explanation reasoning, though it was not as strong as a proof beyond a reasonable doubt. Actually, in everyday life, best-explanation reasoning often does not yield proof beyond a reasonable doubt. But we are still often justified in basing decisions on it.  
另一个熟悉的例子是病理学家对她的结论进行的刀伤力度是中等的论证。尽管这种论证没有达到超出合理怀疑的证明的强度，但它仍然是最佳解释的推理。实际上，在日常生活中，最佳解释的推理通常无法提供超出合理怀疑的证明。但我们通常仍然有理由基于它来做出决策。­day life, best-explanation reasoning often does not yield proof beyond a reasonable doubt. But we are still often justified in basing decisions on it.

­essarily follow, the argument can often be a good one, but good judgment is required here, in addition to the application of whatever criteria are appropriate.Often loose derivation (see Chapter 7) is the best kind of argument that we can find or construct to support a conclusion. Even though the conclusion does not necessarily follow, the argument can often be a good one, but good judgment is required here, in addition to the application of whatever criteria are appropriate.  
通常，松散的推导（见第7章）是我们可以找到或构建来支持结论的最好类型的论证。尽管结论不一定会得出，但这种论证通常是好的，但在这里需要良好的判断力，以及适当的应用标准。

Value-judging arguments cannot be expected to fit best-explanation standards because value conclusions do not account for facts. So different strategies (often loose derivation) are appropriate here. But the general idea still holds: Do the best you can for an argument (assuming that the goal is to decide whether the conclusion is acceptable) and then judge it carefully.  
价值判断论证不能期望符合最佳解释标准，因为价值结论不考虑事实。因此，在这里适用不同的策略（通常是宽松推导）。但总体思路仍然适用：尽力为一个论证做到最好（假设目标是决定结论是否可接受），然后仔细评判。

Complex Combinations  
复杂组合

­explanation standards, parts that satisfy generalization standards (to be discussed in Chapter 10), and parts that satisfy value-judging standards (to be discussed in Chapter 11). In Arlene’s trial, the conclusion that she killed Al is a best-explanation conclu­sion. But the conclusion that she committed voluntary manslaughter follows neces­sarily from the satisfaction of the four conditions for voluntary manslaughter. The full set of conditions for voluntary manslaughter appeared as Example 7:1 in Chapter 7. If you have not seen these conditions, please go back and look at them now.Often complex arguments consist of parts that satisfy different standards: possibly parts that satisfy deductive (or loose derivation) standards, parts that satisfy bestexplanation standards, parts that satisfy generalization standards (to be discussed in Chapter 10), and parts that satisfy value-judging standards (to be discussed in Chapter 11). In Arlene’s trial, the conclusion that she killed Al is a best-explanation conclusion. But the conclusion that she committed voluntary manslaughter follows necessarily from the satisfaction of the four conditions for voluntary manslaughter. The full set of conditions for voluntary manslaughter appeared as Example 7:1 in Chapter 7. If you have not seen these conditions, please go back and look at them now.  
通常，复杂的论证由满足不同标准的部分组成：可能是满足演绎（或宽松推导）标准的部分，满足最佳解释标准的部分，满足概括标准的部分（将在第10章讨论），以及满足价值判断标准的部分（将在第11章讨论）。在阿琳的审判中，她杀死艾尔的结论是一个最佳解释的结论。但是，她犯下故意杀人罪的结论是根据满足故意杀人罪的四个条件而必然得出的。故意杀人罪的全部条件在第7章的例子7:1中出现。如果你还没有看到这些条件，请回去看一下。

The first of these conditions, roughly speaking, is that she killed Al. This is a best-explanation conclusion (the prosecutor’s argument for which was presented in Chapter 2). The conclusion that she was not justified in using the force she used (the fourth condition) is a value conclusion. The second and third conditions, which I have neglected here for simplicity’s sake, call for best-explanation and value judging arguments. So the overall argument for her guilt under the voluntary manslaughter charge used at least three different kinds of inference: best-explanation inference, value-judging inference, and deductive inference. The deductive inference is from the satisfaction of the four conditions to the conclusion that she is guilty.  
这些条件中的第一个，粗略地说，就是她杀了阿尔。这是一个最佳解释的结论（检察官在第二章中提出了这个论点）。她在使用武力时没有合理理由（第四个条件）的结论是一个价值判断的结论。第二和第三个条件，为了简单起见，我在这里忽略了，要求最佳解释和价值判断的论证。因此，对她在故意杀人罪下有罪的总体论证至少使用了三种不同类型的推理：最佳解释推理、价值判断推理和演绎推理。演绎推理是从满足四个条件到她有罪的结论。

Not Necessarily  
不一定

One frequently heard type of response to an argument is “Not necessarily” or “That doesn’t necessarily follow.” '< his is sometimes a misleading move in discussion, so beware.  
对于论点的一种常见回应是不一定或不一定遵循。这在讨论中有时是一种误导性的举动，所以要小心。

Usually, the conclusion of an argument in real life does not necessarily follow, so the complaint, “Not necessarily” is usually correct, though sometimes misleading. But the danger is that these words will be applied to a good best-explanation argument, or some other kind of good nonnecessary argument, and we will think that somehow the argument has been shown to be a bad one.  
通常，现实生活中的论证结论并不一定会跟随，因此，“不一定”这个抱怨通常是正确的，尽管有时会误导人。但危险在于这些词会被用于一个好的最佳解释论证，或者其他类型的好的非必要论证，我们会错误地认为这个论证已被证明是错误的。­ment, or some other kind of good nonnecessary argument, and we will think that somehow the argument

For example, one of the jurors pointed out that the conclusion that Arlene killed Al did not necessarily follow from the evidence. laterally, this was correct, though misleading. That is, it was misleading if we then thought that the prosecutor’s argument was a bad argument.  
例如，其中一位陪审员指出，根据证据，不能必然得出阿琳杀害阿尔的结论。从字面上看，这是正确的，尽管有误导性。也就是说，如果我们认为检察官的论点是错误的，那么这是具有误导性的。­

The requirement that a conclusion must follow necessarily is often the wrong criterion to apply, even in court cases where someone’s life and freedom are at stake. There the criterion is proof beyond α reasonable doubt, an appropriate criterion, but not as strict as the criterion necessarily following. The prosecutor did pro∖e beyond a reasonable doubt that Arlene killed Al, although this conclusion did not follow necessarily from the evidence.  
一个结论必须必然遵循的要求通常是错误的标准，即使在法庭案件中有人的生命和自由受到威胁。在那里，标准是超出合理怀疑的证明，这是一个适当的标准，但不像必然遵循的标准那样严格。检察官确实超出合理怀疑地证明了阿琳杀害了艾尔，尽管这个结论并不是根据证据必然得出的。­sonable doubt that Arlene killed Al, although this conclusion did not follow neces­sarily from the evidence.

Sometimes when people say “Not necessarily,” they mean to be saying that the argument is not a strong one, and do not really mean only “Not necessarily.” On the other hand, sometimes they mean the words literally. The thing to do, if possible, is to find out which is meant and to deal with the charge in terms of what is meant (the C of FRISCO).  
有时候，当人们说“不一定”时，他们的意思是这个论点不是很有力，而并不仅仅是“不一定”。另一方面，有时候他们的意思是字面上的意思。如果可能的话，我们需要找出他们的真实意图，并根据其意图来处理指责（FRISCO的C）。

If a person means the words literally and applies the charge to a best­explanation argument, one appropriate kind of response is, “That’s right, but I did­n’t say that the conclusion followed necessarily.” A more aggressive response would be, “That’s right, but so what?”

*Not necessarily is sometimes an unfair attack on an argument. Be ready for it.  
如果一个人字面上理解并将指责应用于最佳解释论证，一种适当的回应是，没错，但我并没有说结论必然成立。更积极的回应可能是，没错，但那又怎样？不一定有时是对论证的不公平攻击。要做好准备。*

Summary  
摘要

Any argument can be transformed into a deductively valid argument bv the addition of one or more appropriate reasons in the role of assumptions, but often the result is a bad argument because one or more of the added reasons arc false. Best-explanation inference is often a good alternative when the conclusion is a factual rather than a value conclusion, that is, a conclusion that could account for facts.  
任何论点都可以通过添加一个或多个适当的理由作为假设来转化为演绎有效的论证，但通常结果是一个糟糕的论证，因为其中一个或多个添加的理由是错误的。最佳解释推理通常是一个很好的选择，当结论是事实而不是价值判断时，也就是说，结论可以解释事实的时候。

A reasonable strategy for evaluating an argument is first to check to see whether it satisfies deductive standards and its reasons are true. If so, then accept it and the conclusion. If not, then apply inductive standards (best explanation standards, which are discussed in this and the previous chapter, or generalization standards, which are discussed in Chapter 10), or value judging standards (w hich arc discussed in Chapter 11), or loose derivation standards (which are discussed in Chapter 7). Do not reject an argument until you have given it a fair chance. Many arguments are strong arguments, even though the conclusion does not necessarily follow from the reasons given.  
评估论证的一个合理策略是首先检查它是否符合演绎标准并且其理由是真实的。如果是这样，那么接受它和结论。如果不是，那么应用归纳标准（最佳解释标准，在本章和前一章中讨论过，或者概括标准，在第10章中讨论过），或者价值判断标准（在第11章中讨论过），或者宽松推导标准（在第7章中讨论过）。在给予论证公平机会之前不要拒绝它。许多论证是强有力的，即使结论不一定从给出的理由中得出。­clusion. If not, then apply inductive standards (best explanation standards, which are discussed in this and the previous chapter, or generalization standards, which are dis­cussed in Chapter 10), or value judging standards (w hich arc discussed in Chapter 11),

­ent parts. But the total argument is no stronger than its weakest necessary link.Often an argument has different parts, calling for different standards for different parts. But the total argument is no stronger than its weakest necessary link.  
经常一个论点有不同的部分，需要为不同的部分制定不同的标准。但是整个论点的强度不会超过它最弱的必要环节。

Sometimes not necessarily is a deceptive way to condemn an argument’s conclusion. Be clear what this phrase means in its context before judging whether it holds in that situation.  
有时候并不一定是一种欺骗性的方式来谴责一个论点的结论。在判断它是否适用于该情况之前，请明确这个短语在其语境中的含义。­clusion. Be clear what this phrase means in its context before judging whether it holds in that situation.

Check-Up 9B

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**9:35 The conclusion that Arlene killed Al does not necessarily follow from the evidence cited by the prosecutor.  
9:35 阿琳杀死艾尔的结论并不一定是根据检察官引用的证据得出的。**

**9:36 Any argument can be transformed into a deductively valid one by the addition of one or more premises.  
9:36 任何争论都可以通过增加一个或多个前提来转化为演绎有效的争论。**

**9r3~ Some arguments are strongest when viewed as best-explanation arguments.  
有些论点在被视为最佳解释论证时最有力。**

**9:38 If the conclusion of an argument does not follow necessarily from the evidence, the argument is a bad argument.  
9:38 如果一个论点的结论并不必然地从证据中得出，那么这个论点是一个糟糕的论点。**

**9:39 Arguments that include both deductive and best-explanation elements are likely to be unsatisfactory because there is no way to judge them.  
9:39 包含演绎和最佳解释元素的论点很可能不令人满意，因为没有办法判断它们。**

Medium Answer  
中等答案

The point of the following items is to illustrate the fact that construing an argument to be a deductive argument often results in your adding a reason that is quite implausible. The desirability of construing many arguments as best-explanation arguments is thus exemplified.  
以下项目的目的是为了说明将一个论证解释为演绎论证往往会导致你添加一个非常不可信的理由。将许多论证解释为最佳解释论证的可取性因此得到了典型的体现。­

**9:40-9:46** For each of Items 9:6-9:12:

1. Invent one or more reasons that would transform the argument in support of the conclusion into a deductively valid argument. (This is like the simplified assumption identification you did in Chapter 7.)
2. Tell whether you think that the deductively valid argument you have created is a good one and why.  
   发明一个或多个理由，将支持结论的论点转化为演绎有效的论证。（这类似于你在第7章中进行的简化假设识别。）告诉我你认为你创建的演绎有效的论证是否好，并解释原因。

Do this on a separate piece of paper. The first is done as an example:  
在一张独立的纸上完成这个任务。第一个已经完成，作为一个例子。

**9:40 (9:6) a. If a person strikes a blow of moderate force, then that person does not intend to hurt the other severely.  
9:40 (9:6) a. 如果一个人施加适度的力量打击，那么这个人并不打算严重伤害对方。**

1. No, because the premise I added is very implausible. I might be very weak and strike a moderate blow, even though I intend to hurt someone severely. Also, I might strike a moderate blow in what I know to be a vulnerable place, intending to hurt someone severely.

+ Causation

Much, if not all, best-explanation reasoning involves causal relations. But because causation is a difficult and controversial topic, I have left it to the end of this two- chapter sequence on experimenting and best-explanation reasoning. Because causal reasoning fits the pattern of best-explanation reasoning, some of the ideas here have been presented earlier, but here the emphasis is on causal relations.  
大部分，如果不是全部，最佳解释推理都涉及因果关系。但是因为因果关系是一个困难且有争议的话题，我把它放在了这个关于实验和最佳解释推理的两章序列的最后。因为因果推理符合最佳解释推理的模式，所以这里的一些观点之前已经提出过，但是这里强调的是因果关系。

Because this section on causation is more theoretical than other parts of the book, the reader in a hurry might justifiably choose to omit it. But for dealing in depth with causal issues in many areas, this section can be useful.  
因为这一部分关于因果关系的内容比书中的其他部分更加理论化，匆忙的读者可能有理由选择忽略它。但是对于深入处理许多领域的因果问题，这一部分可能是有用的。

A Distinction Between Singular Causal Statements and Causal Generalizations  
单一因果陈述和因果概括的区别

When the pathologist asserted, “The stabbing caused Al’s death,” she was making a singular causal statement. To make a singular causal statement is to say that one particular thing (or set of things) caused another particular thing (or set of things). A singular causal statement is about one sequence. Although it might be a very complex sequence, it is only one sequence. The stabbing-death sequence was one sequence.  
当病理学家断言“刺伤导致了阿尔的死亡”时，她是在做一个单一的因果陈述。做一个单一的因果陈述意味着说某个特定的事物（或一组事物）导致了另一个特定的事物（或一组事物）。单一的因果陈述是关于一个序列的。尽管这个序列可能非常复杂，但它只是一个序列。刺伤致死的序列是一个序列。­ticular thing (or set of things) caused another particular thing (or set of things). A singular causal statement is about one sequence. Although it might be a very com­plex sequence, it is only one sequence. The stabbing-death sequence was one sequence.

On the other hand, the statement, “Stabbing causes people to die” is a causal generalization. It is about an unlimited number of sequences of stabbing and dying, not just one.  
另一方面，“刺伤导致人们死亡”这个陈述是一个因果概括。它涉及无限数量的刺伤和死亡序列，而不仅仅是一个。

Causal Generalizations  
因果推论

Here are some more examples of causal generalizations:  
以下是一些因果关系的普遍性例子：

Smoking causes cancer.  
吸烟会导致癌症。

Drinking causes accidents.  
喝酒会导致事故。

Blowing a whistle causes people to quiet down.  
吹哨子会使人们安静下来。

I ifting one’s foot off the gas pedal causes the car to slow down.  
如果将脚从油门踏板上抬起，车辆会减速。

Because these causal generalizations cover an unlimited number of possible sequences, they inevitably cover more than their evidence.  
因为这些因果关系的概括涵盖了无限数量的可能序列，它们必然超出了它们的证据。

Vagueness  
模糊

Furthermore, the proportion of positive instances in such generalizations is often vague. That is, they do not state even roughly a proportion of positive instances. For example, is smoking alleged to cause cancer occasionally, sometimes, often, usually, or always? The generalization does not say.  
此外，这样的概括中正面实例的比例通常是模糊的。也就是说，它们甚至没有粗略地说明正面实例的比例。例如，吸烟被指称为偶尔、有时、经常、通常还是总是导致癌症？这个概括没有明确说明。

Because causal generalizations are vague in their ordinary bare form (“X causes T” or “Xs cause Ts”), a first step in deciding whether to believe them (and in formulating them in your own mind) is to clarify their meaning (the Gin FRISCO). The clarification has two features: realizing that the phrase under standard conditions (or some such phrase) is always implicitly there, and determining what degree-of- universality qualification belongs in the generalization.  
因为因果关系的普遍性陈述在其普通裸形式（X导致T或Xs导致Ts）中是模糊的，决定是否相信它们（以及在自己的心中构思它们）的第一步是澄清它们的含义（Gin FRISCO）。这个澄清有两个特点：意识到在标准条件下（或类似的短语）的短语始终隐含在其中，并确定普遍性限定的程度属于哪个普遍性陈述。­mulating them in your own mind) is to clarify their meaning (the Gin

Here are examples of terms to indicate degree of universality: always, almost always, usually, frequently, sometimes, and can cause. When I say that drinking causes accidents, I do not mean that drinking always causes accidents, or merely that drinking can cause accidents. I think that drinking sometimes causes accidents (under standard conditions). When I say that blowing a whistle causes people to quiet down, I have in mind the idea that blowing a whistle usually causes people to quiet down (under standard conditions). When 1 say that lifting one’s foot off the gas pedal causes the car to slow down, I mean that lifting one’s foot off the gas pedal (under standard conditions) always causes the car to slow down. I realize that many degree- of-universality qualifications are vague, as is the phrase standard conditions, but causal generalizations are generally vague propositions.  
这里有一些表示普适程度的术语的例子：总是，几乎总是，通常，频繁，有时，和可能导致。当我说喝酒会导致事故时，我并不是指喝酒总是会导致事故，或者仅仅是喝酒可能会导致事故。我认为喝酒有时会导致事故（在标准条件下）。当我说吹哨会让人们安静下来时，我指的是吹哨通常会让人们安静下来（在标准条件下）。当我说把脚从油门上抬起会使车减速时，我指的是把脚从油门上抬起（在标准条件下）总是会使车减速。我意识到许多普适程度的限定词都很模糊，就像“标准条件”这个短语一样，但因果推论通常都是模糊的陈述。­ing can cause accidents. I think that drinking ­dard conditions). When I say that blowing a whistle causes people to quiet down, I have in mind the idea that blowing a whistle

Because of their inherent vagueness and generally unspecified degree of universality, causal generalizations require special care. We must keep in mind the standardconditions qualifier and make sure that the degree of universality is clear enough for the situation. If the throttle spring breaks, then lifting one’s foot off the gas pedal does not cause the car to slow down, but this does not show the generalization to be wrong. The conditions were not standard. What would show the generalization to be wrong would be repeated cases in which the car was functioning properly and conditions were otherwise standard, but lifting one’s foot off the gas pedal did not cause a slowing of the car.  
由于它们固有的模糊性和通常未指定的普遍程度，因果概括需要特别注意。我们必须记住标准条件限定词，并确保普遍程度对于情况足够清楚。如果油门弹簧断裂，那么抬起脚离开油门踏板不会导致汽车减速，但这并不意味着这个概括是错误的。条件并不标准。如果汽车正常运行且条件符合标准，但抬起脚离开油门踏板并没有导致汽车减速，那将证明这个概括是错误的。­sality, ­­ditions

Suppose this happens going downhill in extremely hilly places in San Francisco. I would not treat these occurrences as counterexamples because for me and the people to whom I have imagined myself saying this (living in flat central Illinois), the steep hills of San Francisco are not standard. The concept standard, vague as it may be, is also situation-dependent.  
假设这种情况发生在旧金山的极度多山的地方下坡时。对于我和我想象自己对这样说的人（生活在伊利诺伊州平坦的中部地区），旧金山的陡峭山丘并不是标准。标准这个概念，虽然模糊，也是与情况相关的。­ple

If all the world were hilly like San Francisco, then the appropriate causal gener­alization might well be, “Lifting your foot off the gas pedal (under standard condi­tions) often causes the car to slow down.” Or, if the situation called for explicit atten­tion to the downhill factor, we might add another qualifier making hilly places an explicit exception to the original: “Lifting your foot off the gas pedal (under standard conditions) always causes the car to slow down, except when going down steep hills.”

Thus, causal generalizations have a usually unstated and inevitably somewhat vague standard-conditions qualifier that depends on the situation, and also often have a vagueness (about their degree of universality) that can be clarified to some extent and that also depends on the situation. We must keep these ideas in mind when we develop causal generalizations, develop and evaluate arguments for and against causal generalizations, and try to apply these generalizations to new cases. We should also keep in mind the particulars of the situation (the S in FRISCO).  
如果整个世界都像旧金山一样多山，那么适当的因果概括可能是，脚离开油门踏板（在标准条件下）通常会导致汽车减速。或者，如果情况要求明确关注下坡因素，我们可以添加另一个限定词，将多山的地方明确列为原始规则的例外：脚离开油门踏板（在标准条件下）总是会导致汽车减速，除非是在下陡坡的情况下。因此，因果概括通常有一个未明确说明但不可避免地有些模糊的标准条件限定词，这取决于情况，并且通常存在一定程度的模糊性（关于它们的普遍性程度），可以在一定程度上予以澄清，这也取决于情况。当我们制定因果概括，发展和评估支持和反对因果概括的论证，并尝试将这些概括应用于新情况时，我们必须牢记这些观点。我们还应该牢记情况的细节（FRISCO中的S）。

Causing, or Bringing About  
导致

Consider my general causal hypothesis about this book (discussed in Chapter 8): “Taking a course in critical thinking, using this book, tends to improve the criticalthinking ability of students.” Although I did not there use the word *cause,* the hypothesis is to my ear a causal hypothesis, restatable as follows: “A course in critical thinking, using this book, tends to cause improvement in the critical thinking ability of students.” This should be understood to include the qualifier *under standard con­ditions* and obviously incorporates the somewhat vague term *tends to,* which to me means *more often than not* but certainly not *always* or *almost always”*

If this proposed restatement of the hypothesis, using the word cause, seems to you to be an acceptable restatement, then you probably join me in thinking that causation is not necessarily mechanical. If the restatement bothers you on the ground that it makes the connection too mechanical, then you should probably substitute the phrase bring about for the word cause in this and many other places in this chapter. To my ear, to cause means the same as to bring about, so bringing about is—in neutral terms—the topic I intend to discuss here.  
考虑到我对这本书的一般因果假设（在第8章中讨论）：参加批判性思维课程，并使用这本书，往往会提高学生的批判性思维能力。尽管我在那里没有使用“因果”一词，但这个假设在我听来是一个因果假设，可以重新表述如下：批判性思维课程，使用这本书，往往会导致学生的批判性思维能力的提高。这应该被理解为包括标准条件下的限定条件，并且显然包含了有些模糊的“往往会”的术语，对我来说意味着通常而非总是或几乎总是。如果这个提议的重新表述，使用“因果”一词，对你来说似乎是一个可接受的重新表述，那么你可能和我一样认为因果关系不一定是机械的。如果这个重新表述让你觉得连接过于机械，那么你应该在本章和其他许多地方用“导致”这个词替换“因果”。在我听来，“导致”和“引起”意思相同，所以“引起”是——中立的术语——我打算在这里讨论的主题。­sation is not necessarily mechanical. If the restatement bothers you on the ground that it makes the connection too mechanical, then you should probably substitute the phrase ­tral terms—the topic I intend to discuss here.

But what sort of evidence can support a general causal hypothesis? A number of types of evidence can be relevant, but often no single type is conclusive.  
但是什么样的证据可以支持一个普遍的因果假设？有许多种类型的证据可能相关，但通常没有单一类型是决定性的。

Instances of the Generalization  
概括的实例

Strong support for a can-cause generalization about this book would be one case in which the following singular causal statement is well-established: “This critical thinking course, using this book, caused an improvement in the critical thinking ability of the students in this situation.” (In Chapter 8, you read about strategy and problems in experimentally establishing such a singular causal statement.) More instances would establish a can-cause generalization even more firmly, perhaps justifying a sometimes, or even a frequently generalization.  
对这本书的一个可以引起普遍化的强有力支持将是一个已经确立的单一因果陈述的案例：这门批判性思维课程使用这本书，在这种情况下提高了学生的批判性思维能力。（在第8章中，您已经阅读了关于在实验中建立这样一个单一因果陈述的策略和问题。）更多的实例将更加坚定地确立一个可以引起普遍化的观点，也许可以证明有时甚至经常发生的观点。­ing course, using this book, caused an improvement in the critical thinking ability of the students in this situation.” (In Chapter 8, you read about strategy and problems in experimentally establishing such a singular causal statement.) More instances would establish a *­times,*

Representativeness  
代表性

­sentative, of the group, area, or situation implicitly or explicitly referred to in order to make a more universal type of generalization, such as a The instances would have to be representative, or reasonably believed to be representative, of the group, area, or situation implicitly or explicitly referred to in order to make a more universal type of generalization, such as a usually or tends to generalization. A number of representative instances of an X having caused a X supports a causal generalization that corresponds to the proportion of instances that are positive. That is, a group of eight out of ten positive representative instances supports the generalization of the form “As tend to cause Ts.” For example, suppose that in eight out of ten fairly representative situations, a shift to smaller classes from fifty students down to fifteen resulted in greater learning of critical thinking in the experimental than the control group. But in two, it did not. Then we could probably conclude that reducing class size from fifty to fifteen tends to improve learning of critical thinking. But to do this, it is crucial that the instances be representative of the sort of situation implicitly or explicitly referred to.  
实例必须是代表性的，或者合理地被认为是代表性的，以便进行更普遍类型的概括，例如通常或倾向于概括。一些代表性的实例表明X导致X的因果概括与正面实例的比例相对应。也就是说，八个中有十个正面代表性实例支持了As倾向于引起Ts的概括。例如，假设在十个相对代表性的情况中，从五十名学生减少到十五名学生导致实验组在批判性思维方面的学习更多，而对照组则没有。但在两个情况中，情况并非如此。那么我们可以得出结论，将班级规模从五十人减少到十五人倾向于改善批判性思维的学习。但要做到这一点，实例必须代表隐含或明确提到的情况的类型是至关重要的。­alization. A number of representative instances of an ­tive. That is, a group of eight out of ten positive representative instances supports the generalization of the form “As tend to cause Ts.” For example, suppose that in eight out of ten fairly representative situations, a shift to smaller classes from fifty students down to fifteen resulted in greater learning of critical thinking in the experimental than the control group. But in two, it did not. Then we could probably conclude that reducing class size from fifty to fifteen tends to improve learning of critical thinking. But to do this, it is crucial that the instances be representative of the sort of situation implicitly or explicitly referred to.

Support from Repeated Association  
重复联想的支持

­In some areas (such as that of the critical thinking book and course), it is difficult to establish with full confidence any individual singular causal claim (including the one I have been talking about). We cannot then build a generalization on a representa tive set of separately well-established singular causal claims because there are none. But a generalization can still get some support from a repeated association of the independent and dependent variables, such as the repeated association of the use of this text with improvement in critical thinking among students. But such evidence is by no means sufficient because there might be another explanation of the results. For example, in all these instances, the students might have come to the course with the strong intention to learn to think critically and have learned to do so despite the use of this book. Alternatively, the students might just have grown more mature or learned to think critically in their other courses or experiences. Repeated association is interesting, but dangerous to use by itself. The falling of a barometer and the later appearance of a storm is an example of a repeated association in which neither event causes the other.  
在某些领域（比如批判性思维的书籍和课程），很难确信任何个别的单一因果关系（包括我一直在谈论的那个）。因为没有这样的关系，我们就无法基于一组独立且已经确立的单一因果关系来进行概括。但是，如果独立变量和因变量之间存在重复的关联，比如使用这本书与学生的批判性思维能力提高之间的重复关联，我们仍然可以对概括提供一些支持。但是这样的证据远远不足够，因为结果可能有其他解释。例如，在所有这些情况下，学生可能出于强烈的学习批判性思维的意愿来参加课程，并且尽管使用了这本书，他们还是学会了批判性思维。或者，学生可能只是在其他课程或经验中变得更加成熟或学会了批判性思维。重复关联是有趣的，但单独使用是危险的。气压计下降后出现暴风雨是一个重复关联的例子，其中两个事件都不是彼此的原因。

An important feature of repeated association, if it is to be evidence, is that a cause must precede (or be concurrent with) its effect. A cause cannot occur after its effect.  
重复联想的一个重要特征，如果要成为证据，就是因果关系必须在其效果之前（或同时）发生。因果关系不能发生在其效果之后。

Deliberate Intervention  
有意干预

­ately turning The value of repeated association can be strengthened by the independent variable’s having been introduced on purpose by someone. For example, my friend’s deliberately turning the key a number of times when the motor is running, which is immediately followed by a loud noise, gives support for the generalization “Turning the key when the motor is running causes a loud noise” because there would seem to be no other plausible explanation of both the deliberate turning of the key and the loud noise that immediately followed every time. Similarly, support by the repeated association of the use of this book and improvement in critical thinking would be buttressed by an experimenter’s having repeatedly introduced the book to half of a group of students who were not particularly interested in learning to think critically and having found that the ones who used the book thought more critically than the others. This support comes from the difficulty in coming up with alternative hypotheses to explain the results.  
重复关联的价值可以通过独立变量被某人有意引入而得到加强。例如，当发动机运转时，我的朋友故意多次转动钥匙，紧接着就会发出巨大的噪音，这为“当发动机运转时转动钥匙会引起巨大噪音”这一概括提供了支持，因为既有故意转动钥匙的行为，又有每次紧接着发出的巨大噪音，似乎没有其他合理的解释。同样，通过这本书的反复使用与批判性思维的提升之间的重复关联，可以得到支持，这是通过实验者反复向一半对学习批判性思维不太感兴趣的学生介绍这本书，并发现使用这本书的学生比其他学生更具批判性思维来加强的。这种支持来自于很难提出其他假设来解释结果。­diately ­ciation ­tressed ­ers.

This deliberate intervention consideration is one of the chief reasons to support the use of experimentation over opportunistic data-gathering. Of course, there are disadvantages as well. Experimenters often disrupt the natural flow of things, so that the results do not fit the world as it really is.  
这种有意的干预考虑是支持实验而不是机会主义数据收集的主要原因之一。当然，也存在一些缺点。实验者经常会干扰事物的自然流程，导致结果与现实世界不符。

The evidence need not come from the addition of a factor. If the first variable is deliberately reduced or excluded by the investigator, and if the relation between the two variables makes sense, then an ensuing reduction or elimination of the other gives good support for the causal generalization. This is the sort of reasoning used in connecting the eating of cholesterol with cholesterol coating in the arteries (which in turn is, at the time of writing, believed to cause heart attacks). Investigators reduced the level of eating cholesterol, found that it was followed by an average reduction in or elimination of the cholesterol coating of the arteries, and concluded that the first reduction caused the second reduction.  
证据不必来自于因素的添加。如果第一个变量被调查人员有意减少或排除，并且如果两个变量之间的关系是合理的，那么随后对另一个变量的减少或消除将为因果推论提供良好的支持。这是在连接摄入胆固醇与动脉中的胆固醇沉积（在撰写本文时，被认为会导致心脏病发作）时使用的推理方式。调查人员减少了摄入胆固醇的水平，发现随后动脉中的胆固醇沉积平均减少或消除，并得出结论认为第一个减少导致了第二个减少。

The Causal Chain  
因果链

It is also important that the causal connecting path (or causal chain) between the independent variable and the dependent variable make sense (to satisfy the criterion that the hypothesis be plausible). Our knowing the causal chain from taking one’s foot off the gas pedal through the closing of the flutter valve through the reduction of air and gasoline going into the engine to the slowing of the engine makes more plausible the causal generalization connecting the two ends of the chain. In the case of reducing the class size of a critical thinking course, on the basis of my teaching experience, I think that this causal-chain condition is satisfied. Reducing class size generally results in more discussion by each person, consequently more practice with examples. It also generally results in more individual attention by the instructor and more interaction between the instructor and student. These things in turn plausibly result in more learning of critical thinking.  
同样重要的是，独立变量和因变量之间的因果连接路径（或因果链）是合理的（以满足假设可信的标准）。我们了解从松开油门踏板到关闭颤动阀门再到减少进入发动机的空气和汽油，最终导致发动机减速的因果链，使得连接链两端的因果推理更加可信。根据我的教学经验，对于减少批判性思维课程的班级规模，我认为这种因果链条件是满足的。减少班级规模通常会导致每个人更多的讨论，因此更多的实践例子。它还通常会导致教师对每个学生更多的个别关注以及教师和学生之间更多的互动。这些因素进而可能导致更多的批判性思维学习。

­tion time, less sharpness in judgment, and reduction of carefulness to the occurrence Similarly, the causal generalization that drinking causes accidents is supported by the existence of a plausible causal chain from drinking through lengthened reaction time, less sharpness in judgment, and reduction of carefulness to the occurrence of accidents. Our understanding a plausible causal chain helps to justify our drawing conclusions relating causes to effects. If we cannot understand the causal chain, one must wonder whether the alleged causal relationship is possible.  
同样，饮酒导致事故的因果概括得到了支持，因为存在着从饮酒到反应时间延长、判断力减弱和谨慎性降低，最终导致事故发生的可信因果链。我们对可信因果链的理解有助于证明我们从因果关系中得出结论的合理性。如果我们无法理解这种因果链，就必须怀疑所谓的因果关系是否可能存在。

­But our knowing the causal chain is not absolutely necessary for us to be justified in inferring a causal generalization. The generalization that my friend drew, “Turning the key when the motor is running causes a loud noise,” was justified by the repeated association and deliberate introduction of the independent variable. These things appeared to rule out any alternative explanation of the phenomena. My friend did not know anything about the causal chain. But still, the generalization is better established by being buttressed by knowledge of a reasonable causal chain connecting the turning of the key (while the motor is running) to a loud noise.  
但我们知道因果链并不是我们在推断因果概括时绝对必要的。我朋友所得出的概括，即在发动机运转时转动钥匙会引起巨大的噪音，是通过反复的关联和有意引入独立变量来证明的。这些事情似乎排除了任何其他现象的解释。我朋友对因果链一无所知。但是，通过了解合理的因果链将转动钥匙（在发动机运转时）与巨大的噪音相连接，这个概括得到了更好的确立。­necting the turning of the key (while the motor is running) to a loud noise.

Support from Broader Causal Generalizations  
更广泛的因果推理支持

­tions, for the more narrow causal generalization “Lifting your foot off the gas pedal causes the car to slow down.” Causal generalizations, then, can often be derived from broader and more basic causal generalizations.A sixth kind of support comes from broader causal generalizations and laws. For example, the broader generalization “Reducing the air and fuel supply of a gasoline engine causes the engine to slow down” is support, given some reasonable assumptions, for the more narrow causal generalization “Lifting your foot off the gas pedal causes the car to slow down.” Causal generalizations, then, can often be derived from broader and more basic causal generalizations.  
第六种支持来自于更广泛的因果关系概括和定律。例如，更广泛的概括是减少汽油发动机的空气和燃料供应会导致发动机减速，这个概括在一些合理的假设下支持了更狭窄的因果关系概括，即松开油门踏板会导致汽车减速。因果关系概括通常可以从更广泛和更基本的因果关系概括中推导出来。

Support from Being Asserted by a Credible Source  
由可信的来源提供的支持

A seventh kind of support for a causal generalization can come from its being stated by a credible source (see Chapter 3). Our beliefs in many of our causal generalizations are justified in this way. For example, my believing that malaria is caused by an organism transmitted by the anopheles mosquito is justified primarily on the basis of its having come from credible sources. I have done no independent investigation of this generalization, and am not familiar with any evidence in its support, though there no doubt is much evidence.  
对因果概括的第七种支持可以来自于它被可信的来源陈述（见第3章）。我们对许多因果概括的信念都是通过这种方式得到合理化的。例如，我相信疟疾是由按蚊传播的一种生物引起的，这主要是基于它来自可信来源的依据。我没有对这个概括进行独立调查，也不熟悉任何支持它的证据，尽管毫无疑问有很多证据。­tions are justified in this way. For example, my believing that malaria is caused by an organism transmitted by the anopheles mosquito is justified primarily on the basis of its having come from credible sources. I have done no independent investigation of this generalization, and am not familiar with any evidence in its support, though there no doubt is much evidence.

Summary  
摘要

­So there are at least seven basic types of support for causal generalizations: the exis tence of a singular-causal instance of the generalization, the instance’s being representative, there being a number of instances of association between the independent and dependent variables (the effect’s not having occurred before the cause in each of these associations), the independent variable’s having been deliberately introduced, an understanding of an intervening causal chain, the causal generalization being derivable from broader causal generalizations and laws (given reasonable assumptions), and their assertion by credible sources. These types of support rely on appeal to the four basic criteria for hypothesis testing that were introduced in Chapter 8 and extended to nonexperimental hypotheses in this chapter. This reliance holds even for support by showing a source to be credible (how else to explain the assertion by a credible source?). Credibility also counts independently of this reliance.  
所以，至少有七种基本类型的支持因果推理的方式：存在一个单一因果实例的推理，实例具有代表性，独立变量和因变量之间存在多个关联实例（这些关联实例中，效应在原因之前没有发生），独立变量是有意引入的，对介入性因果链的理解，因果推理可以从更广泛的因果推理和定律中推导出来（在合理的假设下），以及可靠来源的断言。这些支持类型依赖于在第8章中介绍的用于假设检验的四个基本标准，并在本章中扩展到非实验性假设。即使通过展示来源的可靠性来支持（否则如何解释可靠来源的断言？），这种依赖仍然存在。可靠性也独立于这种依赖而计算。­sentative, there being a number of instances of association between the independent and dependent variables (the effect’s not having occurred before the cause in each of these associations), the independent variable’s having been deliberately introduced, an understanding of an intervening causal chain, the causal generalization being derivable from broader causal generalizations and laws (given reasonable assump­tions), and their assertion by credible sources. These types of support rely on appeal to the four basic criteria for hypothesis testing that were introduced in Chapter 8 and extended to nonexperimental hypotheses in this chapter. This reliance holds even for support by

Singular Causal Statements  
单一因果陈述

Singular causal statements are of the form “The X caused the Tn or something convertible into that form, such as “The X was the cause of the T” Here are some examples:  
单一因果陈述的形式为X导致了Tn或可转化为该形式的其他表达，例如X是T的原因。以下是一些例子：­vertible

The stabbing caused Al’s death.  
刺伤导致了Al的死亡。

She performed the acts that caused his death.  
她进行了导致他死亡的行为。

The disappearance of the baboons was caused by the approach of the lions.  
狒狒的消失是由于狮子的靠近。

The faulty maintenance procedures were the cause of the crash.  
错误的维护程序是事故的原因。

Her pointed reply caused a ripple of laughter.  
她尖锐的回答引起了一阵笑声。

Singular causal statements are in the past tense and are about one sequence. They do not explicitly go beyond the evidence; that is, they do not explicitly assert something about unstudied cases. For example, the first of my examples does not explicitly assert anything about the likelihood of death for the next person who is stabbed. It seems reasonable to think that there are some causal generalizations or law(s) underlving this singular causal statement, but the singular statement itself does not tell us what these are.  
单一因果陈述以过去时态表达，关于一个序列。它们不明确超越证据；也就是说，它们不明确地断言关于未研究案例的事情。例如，我举的例子中的第一个并没有明确断言下一个被刺伤的人的死亡可能性。我们可以合理地认为，这个单一因果陈述背后有一些因果概括或法则，但是这个单一陈述本身并没有告诉我们这些是什么。

Singular causal statements are governed by the criteria for best-explanation rea­soning. The conclusion that Arlene’s stabbing of Al caused his death is the best expla­nation of the fact that he died. No plausible alternative explanations survived the scrutiny of the detectives and the pathologist. (A more complete argument for this conclusion was given in Chapter 2 as a selection from the prosecutor’s summary remarks.)

Post Hoc Reasoning

Although a cause must occur before (or simultaneously with) its effect, a common error is to think that merely because one thing followed another (perhaps dramatically), the first caused the second. To reason this way, as pointed out in Chapter 8, is called post hoc reasoning, which is fallacious. For example, at a football game, Martin said that he hoped that the home team would lose. Immediately thereafter, the visiting team scored a touchdown. The scoring of the touchdown was caused by Martin’s hoping for the loss, according to his friend. If the conclusion was based only on the fact that the touchdown immediately followed the expression of hope, then the reasoning was post hoc reasoning—and fallacious.  
单一因果陈述受到最佳解释推理的标准的支配。阿琳刺伤艾尔导致他死亡的结论是他死亡这一事实的最佳解释。没有可行的替代解释经受住了侦探和病理学家的审查。（这个结论的更完整论证在第2章中作为检察官总结的摘录中给出。）事后推理虽然原因必须在其效果之前（或同时）发生，但常见的错误是认为仅仅因为一件事情紧随另一件事情之后（也许戏剧性地），第一件事情导致了第二件事情。如第8章所指出的，以这种方式推理被称为事后推理，是谬误的。例如，在一场足球比赛中，马丁说他希望主队输。随即，客队得分了一个触地得分。根据他的朋友，触地得分是由马丁希望主队输引起的。如果结论仅仅基于触地得分紧随希望表达之后，那么这种推理就是事后推理，是谬误的。­cally), the first caused the second. To reason this way, as pointed out in Chapter 8, is called ­ing team scored a touchdown. The scoring of the touchdown was caused by Martin’s hoping for the loss, according to his friend. If the conclusion was based ­soning was post hoc reasoning—and fallacious.

­down. But in neither the coincidence situation nor the common cause situation is it correct to say that Martin’s hoping the team would lose caused the touchdown.The relation might have been coincidental. Alternatively, it might be that both events were caused by something else, perhaps the coach’s harsh words to the home team’s quarterback, which Martin overheard. The harsh words might have caused Martin to hope that the team would lose, just to show the coach, and the harsh words might also have so upset the members of the home team that they allowed the touchdown. But in neither the coincidence situation nor the common cause situation is it correct to say that Martin’s hoping the team would lose caused the touchdown.  
关系可能是巧合的。或者，可能是由于其他原因引起的，比如教练对主队四分卫的严厉言辞，马丁无意中听到了。这些严厉的话可能导致马丁希望球队输掉比赛，只是为了向教练表明观点，而且这些严厉的话也可能让主队成员如此不安，以至于他们允许对方得分。但无论是巧合情况还是共同原因情况，都不能说马丁希望球队输掉比赛导致了对方得分。

Partial Causes and Conditions  
部分原因和条件

There is always a large number of conditions that work together to produce an effect. Often we select one of these conditions and call it the cause or a partial cause. Making the distinction among the cause, a partial cause, and a condition depends on our interests and the practical situation. In the trial, the single most important factor in the death of the victim was the intentional stabbing, so it was selected, even though there were a number of other conditions that were important, such as Al’s not wearing a thick leather studded jacket and the sharpness of the knife. Sometimes, because we think that more than one condition was significant, we call them partial causes, referring to each as a cause, rather than the cause. If, for example, Al had been warned to be wary of Arlene and to wear his leather studded jacket and his chain vest whenever he was with her, then we might have said that his failure to do so was a (partial) cause of his death and that the stabbing was only another (partial) cause.  
总是有大量的条件共同作用产生效果。通常我们选择其中一个条件，并称之为原因或部分原因。区分原因、部分原因和条件取决于我们的兴趣和实际情况。在审判中，导致受害者死亡最重要的因素是故意刺伤，所以选择了它，尽管还有其他重要的条件，比如阿尔斯没有穿厚皮夹克和刀的锋利程度。有时候，因为我们认为不止一个条件是重要的，我们称它们为部分原因，而不是原因。例如，如果阿尔被警告要提防阿琳并在与她在一起时穿上皮夹克和链甲，那么我们可能会说他未能这样做是他死亡的（部分）原因，而刺伤只是另一个（部分）原因。

How do you tell whether to call something a condition, a partial cause, or the cause? There is no easy straightforward answer to this question, but having been an abnormal occurrence (a stabbing is abnormal), a deviation from what should have been done (the stabbing was that), a deliberate human action (the stabbing was that, too), or a necessary condition given the other conditions (the stabbing was also that), argue for judging something to be a cause rather than a condition.[[18]](#footnote-18)

­cumstances) is used in the The last-mentioned consideration (having been a necessary condition in the circumstances) is used in the but-for test in the law. Applied to the stabbing, it goes like this: “But for the stabbing, Al would not have died. So the stabbing was a cause.” Unfortunately, this test does not yield certain identification of a cause. About the birth of Al, we could truly say, “But for his birth, he would not have died.” Yet his birth is not considered to be a cause of his death. Furthermore, the but-for test does not always even give us a necessary condition for something’s being a cause because the effect might have been overdetermined in a way such that the nonoccurrence of the cause might have brought about something that led to the effect. To use an example suggested by Michael Scriven, the failure of a dike up the river caused the flood in the town. But had the dike been reinforced to the point where it did not fail, the surge of water would have gone past the dike at that point and broken a different dike at a point nearer the town, and the town would have flooded anyway. So the breaking of the dike was not even a necessary condition, even though it caused the flooding. Much more can be said about this and similar examples,[footnoteRef:20] but for present purposes, that should be enough.  
你如何判断某事物是条件、部分原因还是原因？对于这个问题没有简单明了的答案，但是作为一个异常事件（刺伤是异常的），与本应该做的事情偏离（刺伤就是那样的），故意的人为行为（刺伤也是如此），或者是在其他条件下的必要条件（刺伤也是如此），这些都支持将某事物判断为原因而不是条件。[19]在法律中，最后一种考虑（在情况下是必要条件）被用于但因测试。应用于刺伤的情况如下：如果没有刺伤，阿尔就不会死。所以刺伤是一个原因。不幸的是，这个测试并不能确切地确定原因。关于阿尔的出生，我们可以真实地说，如果没有他的出生，他就不会死。然而，他的出生并不被认为是他死亡的原因。此外，但因测试甚至不能总是为某事物作为原因提供必要条件，因为效果可能以一种方式被过度决定，以至于原因的不发生可能带来导致效果的某些东西。以迈克尔·斯克里文提出的一个例子来说明，河上一座堤坝的破裂导致了城镇的洪水。但是如果堤坝被加固到不会破裂的程度，水流将会在那个位置绕过堤坝并在靠近城镇的另一座堤坝处决堤，城镇仍然会被淹没。所以堤坝的决堤甚至不是一个必要条件，尽管它引起了洪水。关于这个和类似的例子还可以说更多，[20]但是对于目前的目的来说，这就足够了。­ent dike at a point nearer the town, and the town would have flooded anyway. So the breaking of the dike was not even a necessary condition, even though it caused the flooding. Much more can be said about this and similar examples,[[19]](#footnote-19)

­ation and our purposes, then If one condition is sufficiently more important than the others, given the situation and our purposes, then it might well be picked out as the cause. Importance, given the situation and purpose, was in the background for the headline in my local newspaper, “Pylon care, not design, caused the DC-10 crash.” It is misleadingly tempting, once we realize that there are always a number of conditions involved in producing an effect, always to refuse to pick one out. But the stabbing was the cause of AΓs death. We were justified in picking that one out, given the situation, and calling it the cause.  
如果一个条件比其他条件更重要，根据情况和我们的目的，那么它可能被选为原因。重要性，根据情况和目的，是我当地报纸头条的背景，不是设计，而是塔台护理导致了DC-10坠机事故。一旦我们意识到产生效果总是涉及多个条件，总是拒绝挑选其中一个是具有误导性的诱惑。但刺伤是AΓ的死因。鉴于情况，我们有理由挑选出它，并称之为原因。­ing

In sum then, deviation from normality, deviation from what should have been done, something’s being a deliberate human action, and something’s having been a necessary condition, are criteria to consider in selecting one or more causes from the set of conditions, and for deciding whether one is the cause, or only a partial cause. You must use your understanding of the situation and your good sense in applying these criteria. None is absolutely a necessary condition for something’s being a cause (although the but-for condition—the necessary condition—usually holds); rather, thev are criteria that can be applied with judgment in a given situation to develop or appraise a singular causal statement.  
总之，偏离正常、偏离应该做的事情、某些事情是故意的人为行为，以及某些事情是必要条件，这些都是在从条件集合中选择一个或多个原因，并决定是否是原因，或仅仅是部分原因时需要考虑的标准。在应用这些标准时，您必须根据情况的理解和自己的判断力来使用。没有一项绝对是某些事情成为原因的必要条件（尽管必要条件通常是必要条件），而是一种可以在特定情况下进行判断的标准，以制定或评估一个单一的因果陈述。

To apply these criteria to the case of Arlene’s knife stroke having been the cause of Al’s death: Stabbing people is a deviation from the normal way people relate to each other. Stabbing him was something that should not have been done (in the eyes of the jury). The stabbing was deliberate. He would not have died at that time had he not been stabbed. Therefore, the claim that Arlene’s knife stroke caused his death satisfies at least the first, third, and fourth criteria—and, for the members of the jury, the second as well.  
将这些标准应用于阿琳的刀击导致阿尔死亡的情况：刺人是人们相互关系的异常行为。刺他是一件不应该发生的事情（在陪审团眼中）。刺人是故意的。如果他没有被刺，他在那个时候不会死亡。因此，声称阿琳的刀击导致他的死亡至少满足第一、第三和第四个标准，对于陪审团成员来说，也满足第二个标准。

Elimination of Alternatives as  
消除替代方案

a Strategy for Identifying the Cause  
识别原因的策略

There is a basic strategy for identifying causes in cases in which we think we know all the plausible, or, better still, all the possible causes. It is to investigate and rule out as many as we can. If only one remains, then it is probably the cause. You will recognize this strategy as a primary troubleshooting and diagnosis strategy discussed at the end of the last chapter. The strategy works best if we know all the possible causes, and even then we should be cautious, often needing to add a qualifying term such as probably to a causal conclusion. This strategy was pursued by a fire chief, who said about a hotel fire, ςT feel it’s doubtful that a motor started it. If we eliminate that, we have eliminated all accidental causes. That would leave the cause to someone starting it. That would be arson.” The chief’s way of including a qualifier was to use the word would and not definitely state that the cause was arson. This basic elimination strategy provides a straightforward application of the elimination-of-alternative hypotheses criterion in cases in which we are knowledgeable about all the plausible or possible causes of an occurrence.  
在我们认为已经知道所有可能的原因的情况下，有一种基本策略可以用来确定原因。那就是尽可能地调查和排除其中的许多原因。如果只剩下一个原因，那么很可能就是真正的原因。你会认识到这个策略是上一章末尾讨论的主要故障排除和诊断策略。如果我们知道所有可能的原因，这个策略效果最好，即使如此，我们也应该谨慎，通常需要在因果结论中加上一个修饰词，比如“可能”。这个策略被一个消防队长采用，他在谈到一场酒店火灾时说，“我觉得很难相信是机器引起的。如果我们排除了这个原因，就排除了所有意外的原因。那就只剩下有人纵火的原因了。那就是纵火案。队长使用“会”这个词来包含一个修饰词，而不是明确地说原因是纵火。这个基本排除策略在我们对一个事件的所有可能的原因都有了了解的情况下，提供了一个直接应用替代假设排除标准的方法。*­ably*­­­

When any one of the lights in my home becomes inoperative, I use a variation of this strategy. Ever since I have lived here, when any one of the lights has become inoperative, this has always been because a bulb was burned out, the switch was broken, a circuit breaker had opened, or the power was out. If a light ceases to function, its switch behaves the way it usually does (in sound and movement), and the other lights in the same circuit work (ruling out the circuit breaker’s being open and the power’s being out), then the best explanation is probably a burned-out light bulb. The most practical thing to do is to replace the light bulb without checking every possible alternative hypothesis (such as a break in the wires) because the replacement is so much easier and cheaper than running an exhaustive check of alternative hypotheses. If replacing the light bulb does not do the job, then a more careful check of the alternative hypotheses would be in order because the most likely one (the defective-bulb hypothesis) has strong evidence against it. This simplified strategy is all right in situations in which there is usually one type of cause, and in which being mistaken in the remedy does not cost much.  
当我家里的任何一个灯具失效时，我会采用这种策略的变种。自从我住在这里以来，每当有一个灯具失效，通常是因为灯泡烧坏、开关损坏、断路器跳闸或停电。如果一个灯具停止工作，它的开关表现通常的声音和动作，而同一电路中的其他灯具正常工作（排除了断路器跳闸和停电的可能性），那么最合理的解释可能是灯泡烧坏了。最实际的做法是更换灯泡，而不是检查每一个可能的替代假设（比如线路断开），因为更换灯泡比进行详尽的替代假设检查更容易和便宜。如果更换灯泡没有解决问题，那么应该进行更仔细的替代假设检查，因为最有可能的假设（灯泡损坏）有强有力的反证据。这种简化的策略在通常只有一种类型的原因，并且错误的解决方法不会造成太大损失的情况下是可行的。­­taken in the remedy does not cost much.

The point is that sometimes there are practical reasons not to bother to check out every plausible possible hypothesis. In this kind of case, the defective-light-bulb hypothesis is so often the right one (given standard switch behavior and the other lights’ being on) that the reasonable thing to do is to act provisionally as if it were true. If light bulbs were extremely expensive and were ruined by being removed from a fixture, or if replacing them were expensive or time-consuming (or life-threatening, if not the cause, as might result from a mistaken medical diagnoses), then it might be wise to check out the alternative hypotheses before replacing the light bulb. But this is not the way it is in my situation. My light bulbs are easy to replace.  
有时候，有一些实际的理由不值得去检查每一个可能的假设。在这种情况下，有缺陷的灯泡假设往往是正确的（考虑到标准的开关行为和其他灯泡都亮着），所以明智的做法是暂时按照它为真来行事。如果灯泡非常昂贵，拆下来就会损坏，或者更换灯泡很贵或很耗时（如果不是灯泡的问题，可能会导致错误的医疗诊断，甚至危及生命），那么在更换灯泡之前检查其他假设可能是明智的。但在我的情况下并非如此。我的灯泡很容易更换。

Sometimes the situation is even less complicated. When there is only one kind of thing that can cause the sort of effect that occurred, then when that sort of effect occurs, we know what sort of thing caused it. For example, if onlv extreme heat can cause steel to turn a specified color in a swirling pattern, then we have conclusive evidence that this instance of a piece of steel’s having turned that color in that pattern was caused by extreme heat.  
有时候情况甚至更简单。当只有一种事物可以引起发生的效果时，当这种效果发生时，我们就知道是什么事物引起了它。例如，如果只有极高的温度可以使钢材以旋转的图案变成指定的颜色，那么我们有确凿的证据表明，这个钢材在那个图案中变成那个颜色的实例是由极高的温度引起的。­dence that this instance of a piece of steel’s having turned that color in that pattern was caused by extreme heat.

The Causal Chain  
因果链

In drawing singular causal conclusions (even more than with causal generalization), it is desirable, and sometimes necessary, to understand the causal chain by which the cause brought about the effect. The pathologist’s concluding that the knife stroke brought about AΓs death required that the pathologist understand the way the death came about (that is, understand the causal chain from the stabbing effort to the penetration to the loss of blood to the loss of oxygen to the death). The conclusion that faulty pylon maintenance caused the crash of a DC-10 required a tracing of a causal chain like this one: from maintenance procedures to the cracked pylon, to the loss of the engine, to the loss of flaps, to the stall, to the crash.  
在得出单一因果结论时（甚至比因果概括更甚），了解因果链是可取的，有时也是必要的，以理解原因是如何导致效果的。病理学家得出结论，认为刀伤导致了AΓ的死亡，需要病理学家理解死亡的发生方式（即理解从刺伤努力到穿透到失血到缺氧到死亡的因果链）。得出故障的塔杆维护导致DC-10坠毁的结论，需要追踪类似于以下的因果链：从维护程序到裂开的塔杆，到发动机损坏，到襟翼损坏，到失速，到坠毁。­etration to the loss of blood to the loss of oxygen to the death). The conclusion that faulty pylon maintenance caused the crash of a DC-10 required a tracing of a causal

On the other hand, understanding the causal chain is not always necessary. As I noted earlier, a friend does not understand the mechanism by which a dreadful noise is caused by his turning the key when the motor of his car is already running. But he still was right to conclude that his turning the key caused that noise the last time he did it. He has three sorts of evidence for this conclusion: One is that there were a series of occasions on which turning the key when the motor was going was immediately accompanied by a similar noise. The two kinds of events kept occurring together. Second, the noise was produced not according to any schedule, but always exactly when he turned the key when the motor was running. He can think of nothing that both would have caused him to turn the key and caused the noise (so there probably was no common cause). There seemed to be no other explanation of this otherwise incredible series of coincidences than that turning the key when the motor is running always causes a noise (under standard conditions). His singular causal conclusion is an instance of this causal generalization.  
另一方面，理解因果链并不总是必要的。正如我之前指出的，一个朋友并不理解在他的汽车发动机已经运转时，他转动钥匙会引起可怕的噪音的机制。但他仍然正确地得出结论，上一次他转动钥匙引起了那个噪音。他有三种证据支持这个结论：第一，有一系列的情况，当发动机运转时转动钥匙会立即伴随着类似的噪音。这两种事件总是同时发生。第二，噪音并不按照任何时间表产生，而是在他转动钥匙时发动机正在运转时总是准确发生。他想不到既会导致他转动钥匙又会引起噪音的原因（所以可能没有共同的原因）。除了转动钥匙时发动机正在运转时总是会引起噪音（在标准条件下），似乎没有其他解释这个本来难以置信的一系列巧合的方法。他的独特因果结论是这个因果概括的一个例子。­­ing that both would have caused him to turn the key and caused the ­

The third type of evidence concerns the last time he did it, which is what the singular causal conclusion is about. That time the noise occurred exactly when he turned the key, and nothing else notable happened at that time, as far as he could tell. So, given that turning the key when the motor is running can and always does (under standard conditions) cause a noise like the one he heard, and given that he could see nothing else occurring at the time, then he justifiably concluded that turning the key that time caused the noise he heard. He has a right to conclude this, even though he does not understand the mechanism connecting turning the key and the noise.  
第三种证据涉及他最后一次做这件事的时间，这正是单一因果关系的结论所涉及的。那次噪音恰好在他转动钥匙的时候发生，那个时候没有其他值得注意的事情发生，据他所知。因此，考虑到在发动机运转时转动钥匙可以并且总是（在标准条件下）会引起他听到的那种噪音，而且考虑到他在那个时候没有看到其他事情发生，那么他有理由得出结论，即那次转动钥匙引起了他听到的噪音。尽管他不理解转动钥匙和噪音之间的机制，但他有权得出这个结论。

Note that this is not a case of the post hoc fallacy. There is much more evidence than the mere one-time successive occurrence of the two events.  
请注意，这不是事后假设谬误的情况。有比这两个事件仅仅一次连续发生更多的证据。

Note also that a stronger case is needed for the singular causal conclusion if we do not understand the causal chain. A case is easier to make if we do understand the causal chain. The car noise evidence had to be much stronger without an understanding of the causal chain than would have been needed, if the chain had been understood.  
请注意，如果我们不理解因果链条，那么对于单一的因果结论，需要更强的论据。如果我们理解了因果链条，那么更容易提出论据。如果没有理解因果链条，汽车噪音的证据就需要更强大，而如果理解了链条，就不需要那么强大的证据。­standing of the causal chain than would have been needed, if the chain

­erately I remind you of the significance of the strategy of having human beings deliberately introduce the factor that is suspected of being the cause. If we introduce that factor at will (and its occurrence is immediately followed by the effect), then it is often difficult to think of an explanation of the pair of occurrences other than that the thing that we did caused the other.  
我提醒您战略的重要性，即有意让人类引入被怀疑为原因的因素。如果我们随意引入该因素（并且其发生立即跟随着结果），那么往往很难想到除了我们所做的事情引起了其他事情之外的解释。

Gaps in the Causal Chain  
因果链中的空白

­ing was not plugged in, so the electricity that was needed to produce the heat in a short circuit in the Christmas tree lighting was not available. So a short circuit in the Christmas tree lighting was ruled out. There was a gap in the causal chain.Understanding the causal chain is relevant to causal conclusions in another way. If we know the only causal chain (or chains) by which an occurrence could have brought about an effect, then if there was a gap in that chain (or those chains), the occurrence was not the cause. In the hotel fire, it was determined that the Christmas tree lighting was not plugged in, so the electricity that was needed to produce the heat in a short circuit in the Christmas tree lighting was not available. So a short circuit in the Christmas tree lighting was ruled out. There was a gap in the causal chain.   
理解因果链对于因果结论有另一种相关性。如果我们知道唯一的因果链（或多个因果链），可以使某个事件产生效果，那么如果该链中存在间断（或这些链中存在间断），则该事件不是原因。在酒店火灾中，确定圣诞树灯光没有插上插头，因此无法提供给圣诞树灯光中的短路产生热量所需的电力。因此，排除了圣诞树灯光中的短路。因果链中存在间断。

Another way of ruling out something as the cause is to show that it did not occur or was not present. Showing that lit candles were not present in the room where the fire started would rule out lit candles as the cause.  
排除某事物作为原因的另一种方法是证明它没有发生或不存在。在起火的房间里没有燃着的蜡烛，可以排除燃着的蜡烛作为起火原因。

Credible Sources  
可信来源

A frequently used method of establishing a singular causal statement is to show that it is believed by a credible source. The pathologist’s testimony that the knife stroke caused Al’s death was accepted as establishing that fact.  
经常使用的建立单一因果陈述的方法是证明它被可信的来源所相信。病理学家证词表明刀伤导致了阿尔的死亡，这一事实被接受为确立了那个事实。

Summary and Comment  
摘要和评论

Although causation is a difficult and thorny topic, there are loose criteria that we can employ in drawing and judging causal conclusions. The criteria summarized below do not by themselves produce correct answers. Good judgment, background knowl­edge of the facts that serve as reasons (K) and counterreasons, and sensitivity to the situation *(S) are* required in applying the criteria. The basic criteria are those of best­explanation reasoning (2), with special attention to the question “Is there another plausible explanation?”

The criteria do provide guidance for your exercise of your judgment. However, it is not true, as some people suggest these days, that there is no way to tell whether one thing caused or causes another. Often we are unable to do so, but often we are able to do it. We do it all the time, and if we follow the guidelines, are often right. But the challenge that we cannot be sure whether one thing caused another is often appropriate in the hard cases, such as determining whether Napoleon died of arsenic poisoning, and determining what the president knew and intended at a given time.  
虽然因果关系是一个困难且棘手的话题，但我们可以运用一些宽松的标准来进行因果推断和判断。下面总结的标准本身并不能产生正确答案。在应用这些标准时，需要具备良好的判断力、对作为原因（K）和反因素的事实的背景知识，以及对情况（S）的敏感度。基本标准是最佳解释推理（2），特别关注以下问题：是否存在另一种合理的解释？这些标准确实为您行使判断力提供了指导。然而，如今有些人所说的那样，无法确定一件事是否导致了另一件事是不正确的。我们经常无法确定，但也经常能够确定。我们一直在这样做，如果我们遵循这些准则，通常是正确的。但在一些困难的情况下，比如确定拿破仑是否死于砷中毒，以及确定总统在某个特定时间知道和打算的事情时，我们无法确定一件事是否导致了另一件事，这种挑战通常是合适的。

Causal generalizations explicitly apply to cases that are not part of the evidence for them. But they must be understood implicitly to include the vague limitation under standard conditions and they often do not specify the rough proportion of the cases that are positive. However, this specification can be made with such terms as always, almost always, usually, frequently, sometimes, and can cause. When stating causal generalizations, we might well include such a qualifying term, and in deciding whether to believe one, we first need to determine its degree of universality.  
因果推论明确适用于不属于其证据的情况。但它们必须被隐含地理解为包括在标准条件下的模糊限制，并且通常不指定积极情况的大致比例。然而，可以使用诸如总是、几乎总是、通常、频繁、有时和可能等术语来进行这种规定。在陈述因果推论时，我们可能会加入这样一个限定词，并且在决定是否相信它时，我们首先需要确定其普遍性程度。

Support for a causal generalization is based on its ability to satisfy the four general criteria for hypotheses. More specific support can be of at least seven types, which can be justified by appeal to these criteria, but which it is useful to list here. Do not memorize these. Just make sure that you can think of an example of each.  
对因果推理的支持基于其满足假设的四个一般标准的能力。更具体的支持可以有至少七种类型，这些类型可以通过对这些标准的呼应来证明，但在这里列出是有用的。不要记住这些。只要确保你能想到每个例子就可以了。­

1. The existence of a singular-causal instance of the generalization.  
   普遍化的单一因果实例的存在。
2. The representativeness of the instance.  
   实例的代表性。
3. The existence of a set of instances in which cases of the supposed cause are associated with cases of the supposed effect, even though in no one case was it established that X caused T. In each case, the effect must not come before the cause.  
   在一组实例中存在这样的情况，即所谓的原因与所谓的效果的情况相关联，即使在任何一个情况下都没有确定X导致了T。在每个情况下，效果不能在原因之前出现。
4. ­The investigator’s having deliberately introduced the independent variable (which is die supposed cause).  
   调查人员故意引入了独立变量（即假定的原因）。
5. The plausibility of the causal chain.   
   因果链的可信度。
6. The derivability of the causal generalization from a set of one or more broader causal generalizations or laws.  
   从一个或多个更广泛的因果推论或定律的集合中可以推导出因果推论的可推导性。
7. *. The assertion of the causal generalization by a credible source.  
   由可信来源提出的因果概括。*

­teria for hypotheses also apply here. More specific support for singular causal state­ments is of at least seven types, which may be justified by appeal to the four general criteria, but which it is useful to discuss and list separately. Again, do not memorize Singular causal statements can be, but do not need to be, made on the basis of an experiment. Crucial questions are whether they explain the facts, and whether there is another plausible explanation of the facts. In other words, the four basic criteria for hypotheses also apply here. More specific support for singular causal statements is of at least seven types, which may be justified by appeal to the four general criteria, but which it is useful to discuss and list separately. Again, do not memorize these. Just make sure that you can provide an example of each.  
单一因果陈述可以基于实验进行，但并非必须如此。关键问题是它们是否能解释事实，以及是否存在其他合理的解释。换句话说，假设的四个基本标准在这里也适用。对于单一因果陈述的更具体支持至少有七种类型，这些类型可以通过对四个一般标准的引用来证明，但是将它们单独讨论和列出会更有用。再次强调，不需要记住这些，只需确保您能提供每种类型的一个例子即可。

1. Eliminating all but one of the set of plausible causes or, even better, all but one of a set of possible causes.  
   排除除了一个合理的原因之外的所有可能原因，或者更好的是排除除了一组可能原因之外的所有原因。
2. Being clear about the causal chain by which the supposed cause could have brought about the effect.  
   对所谓原因可能导致效果的因果链有清晰的认识。
3. Making sure that the supposed cause occurred and that it did not occur after the effect.  
   确保所谓的原因发生，并且它并非发生在效果之后。
4. Showing that the supposed cause is an instance of the only kind of thing that can cause an effect like the one that occurred.  
   显示所谓的原因是唯一一种可能引起类似发生的效果的事物的一个实例。
5. Showing that one or more of these four rough criteria are satisfied: that die supposed cause was an abnormal occurrence, was wrong or inappropriate, was a deliberate human action, or was necessary in the circumstances (the but-for condition).  
   证明这四个粗略标准中的一个或多个得到满足：假定的原因是异常事件、错误或不适当、故意人为行为或在情况下是必要的（但因条件）。­­stances (the
6. Showing that the singul.tr causal statement is an instance of an established causal generalization.  
   证明singul.tr因果陈述是一个已经建立的因果普遍化实例。­lished causal generalization.
7. Showing that the singular causal statement was made by a credible source for that statement.  
   证明这个单一的因果陈述是由一个可靠的来源提出的。

*Post hoc reasoning is that in which we draw a singular causal conclusion merely on the ground that the effect occurred after the supposed cause. Although such reasoning is fallacious, the fact that something notable occurred just before the effect can be part of a set of evidence that supports the singular causal statement that the notable thing was the cause.  
事后推理是指我们仅仅基于效果发生在所谓的原因之后这一事实，从而得出一个单一的因果结论。尽管这样的推理是谬误的，但是在效果发生之前刚好发生了一些显著的事情，这可以作为一组证据的一部分，支持这个单一的因果陈述，即这个显著的事情是原因。*­

Singular causal statements do not imply universal causal generalizations. Furthermore, proving a universal one false does not show that a singular one that can be derived from it is false. For example, showing that the use of the critical thinking book caused improvement in one case does not show that it always does or will. And showing that the use of the book does not always do it does not prove that it will not do it in some particular situation.  
单一的因果陈述并不意味着普遍的因果概括。此外，证明一个普遍的陈述为假并不意味着从中推导出的一个单一陈述也为假。例如，证明批判性思维书的使用在一个案例中导致了改进，并不意味着它总是会导致改进。而且，证明书的使用并不总是会导致改进，并不能证明在某些特定情况下它不会导致改进。

This discussion of causation was basically a development of useful guides to causal reasoning, based on the principles of best-explanation reasoning. These principles are useful for those who arc wondering how to start making a causal investigation. To those who are understandably wary of drawing causal conclusions, the principles and discussion should also be useful reminders that we can and do justifiably draw causal conclusions in everyday reasoning. It is easy to go wrong in causal reasoning, but we can get it right too.   
因果关系的讨论基本上是对因果推理的有用指南的发展，基于最佳解释推理的原则。这些原则对于那些想知道如何开始进行因果调查的人是有用的。对于那些理所当然地对得出因果结论持谨慎态度的人来说，这些原则和讨论也应该是有用的提醒，即我们可以并且确实可以在日常推理中得出因果结论。在因果推理中容易出错，但我们也可以做到正确。­­­ciples and discussion should also be useful reminders that we can and do justifiably ­soning, but we can get it right too.

There is more to be said and learned about the concept cause. This is a beginning on which you can build your refinements.  
关于因果概念还有更多需要讨论和学习的内容。这是一个你可以在其基础上进行完善的起点。­ning on which you can build your refinements.

Check-Up 9C

Classification  
分类

Label each of the following as S, G, or N, according to whether it is a singular causal statement, a causal generalization, or neither.  
将以下内容分别标记为S、G或N，表示它们是单一因果陈述、因果概括还是既非陈述也非概括。

9:47 Exercise causes heart attacks.  
9:47 运动会导致心脏病发作。

9:48 Hugh’s smoking caused his cancer.  
9:48 休斯吸烟导致了他的癌症。

9:49 John’s drinking caused the accident.  
9:49 约翰的喝酒导致了事故。

9:50 My assumption that she was generous caused me no little grief.  
9:50 我以为她很慷慨，这个假设给我带来了不少痛苦。

9:51 Practice makes perfect.  
9:51 练习使人完美。

9:52 Reading good books tends to improve one’s writing.  
9:52 阅读好书往往能提高写作水平。

9:53 The rains came and we became wet.  
9:53 雨来了，我们变湿了。

9:54 The stirring speech brought down the house.  
9:54 这激动人心的演讲让全场沸腾。

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

9:55 Causes never come after their effects.  
9:55 导致从不在其效果之后发生。

9:56 One way of supporting a causal generalization containing an implicit always is by establishing a representative set of positive instances of it, each instance being a singular causal statement; and by trying unsuccessfully to find negative instances of it.  
9:56 通过建立一个包含隐含的总是(always)的因果概括的代表性正例集，并试图未能找到负例来支持它。­cessfully to find negative instances of it.

9:57 One way of supporting a general causal statement is by showing that it was made by a credible source.  
9:57 通过展示一个可信的来源提出的观点来支持一个普遍的因果陈述的一种方式。

­ond sort of thing.9:58 If one type of thing generally occurs immediately after another sort of thing, this establishes that the first sort of thing tends to cause the second sort of thing.  
9:58 如果一种事物通常紧随另一种事物发生，这表明第一种事物往往会导致第二种事物。

9:59 One way of supporting a general causal statement is by showing that it follows from a broader general causal statement or statements, together with a reasonable set of assumptions.  
9:59 一种支持一般因果陈述的方法是通过展示它是由更广泛的一般因果陈述或陈述以及合理的假设集合推导出来的。

9:60 One way of supporting a singular causal statement is by showing that it satisfies the best-explanation criteria for reasoning.  
9:60 通过展示一个单一的因果陈述满足最佳解释推理的标准之一来支持它。

9:61 One way of showing that a particular thing caused a given effect is to show that of the various things that could have caused that effect, it was the only one that occurred.  
9:61 证明某个特定事物引起了某个效果的一种方法是证明在可能引起该效果的各种事物中，它是唯一发生的事物。

9:62 One way of showing that a particular thing caused a given effect is to show that the effect occurred immediately after the particular thing occurred.  
9:62 证明某个特定事物引起了某种效果的一种方法是展示该效果发生在该特定事物发生之后。

9:63 Causal reasoning fits under the general pattern of best-explanation reasoning.  
9:63 因果推理属于最佳解释推理的一般模式。

9:64 Often a sufficient reason for picking out a causal condition as the   
经常选择一个因果条件作为充分理由

’ cause in a particular case is its being an abnormal occurrence, or its being something that should not have occurred, or its happening before the effect happened.  
在一个特定的情况下，原因是它是一种异常事件，或者是一种不应该发生的事情，或者是在效果发生之前发生的。

**9:65 Causal generalizations must be interpreted implicitly to contain the phrase under standard conditions.  
因果推理必须隐含地解释为在标准条件下包含该短语。**

Longer Answer  
更长的答案

**9:66 Consider all the evidence presented in a through t∕τ in Item 9:29 about the hypothesis that being the first-born tends to cause one to be conservative with respect to one’s immediate surroundings, whereas being later-born tends to cause one to revolt against the accepted views in one’s surroundings. Because this hypothesis is a causal generalization, pay heed to the seven causal generalization criteria as well as the four general hypothesis-testing criteria. Check your writing from the point of view of FRISCO, paying particular attention to the clarity of key terms in the hypothesis you are evaluating (including conservative and revolt against the accepted views in one’s stirroundings).  
考虑在9:29项目中提出的关于长子倾向于对其周围环境保守，而后出生的倾向于反对其周围环境中被接受的观点的假设的所有证据。由于这个假设是一种因果推理，要注意七个因果推理准则以及四个一般假设测试准则。从FRISCO的角度检查你的写作，特别注意你正在评估的假设中关键术语的清晰度（包括保守和反对其周围环境中被接受的观点）。**­servative with respect to one’s immediate surroundings, whereas being later-born tends to cause one to revolt against the accepted views in one’s surroundings. Because this hypothesis is a causal generalization, pay heed to the seven causal generalization criteria as well as the four general hypothesis-testing criteria. Check your writing from the point of view of FRISCO, paying particular attention to the clarity of key terms in the hypothesis you are evaluating (including

**9:67 Take all the evidence presented in a through e in Item 9:30 about the hypothesis that the fourteen whales died from “red tide.” Write two or three paragraphs in which you discuss the overall adequacy of the evidence from the point of view of the four criteria for judging hypotheses and the seven more specific criteria for singular causal statements. As>ume that your audience is like this class. Check your writing from the point of view of FRISCO.  
9:67根据9:30项中关于十四只鲸鱼死于红潮的假设所提供的所有证据，撰写两到三段讨论证据的整体充分性的文字，从判断假设的四个标准和判断单一因果陈述的七个更具体标准的角度来看。假设您的受众与本班相似。从FRISCO的角度检查您的写作。**­dence from the point of view of the four criteria for judging hypothe­ses and the seven more specific criteria for singular causal statements. As>ume that your audience is like this class. Check your writing from the point of view of FRISCO.

**9:68 Do the same for all the evidence presented in a through j in Item 9:32 in support of the hypothesis that the interchange of rocker arms is the cause of the recent sudden increase of premature wear in valve guides in certain types of aircraft engines. Assume that there are no engine mechanics in your audience. You will probably become aware of the close relationship between singular causal statements and causal generalizations in the area of aircraft engines, so feel free also to apply the criteria for causal generalizations, where relevant. Check your writing from the point of view of FRISCO.  
9:68 对于在9:32项目中提供的所有证据，以支持这样一个假设：摇臂的互换是某些类型的飞机发动机中气门导管过早磨损的原因，请做同样的处理。假设您的听众中没有发动机技术人员。在飞机发动机领域，您可能会意识到单一因果陈述和因果概括之间的密切关系，因此在相关情况下，也可以自由地应用因果概括的标准。从FRISCO的角度检查您的写作。**­alizations in the area of aircraft engines, so feel free also to apply the criteria for causal generalizations, where relevant. Check your writing from the point of view of FRISCO.

**9:69 Do the same for all the evidence presented in the prosecutor’s summary speech in Chapter 2. Consider again the first proposition that had to be proven beyond a reasonable doubt, for either voluntary manslaughter or murder: that the defendant performed the acts that caused the death of the victim. This proposition is a singular causal statement. Again, take the four general hypothesis-testing criteria into account as well as the more specific ones for singular causal statements. Check your writing from the point of view of FRISCO.  
9:69 对于第2章检察官总结演讲中提出的所有证据，也要做同样的处理。再次考虑第一个必须以合理怀疑为基础来证明的命题，无论是自愿杀人还是谋杀：被告犯下了导致受害者死亡的行为。这个命题是一个单一的因果陈述。再次考虑四个一般的假设检验标准，以及单一因果陈述的更具体标准。从FRISCO的角度检查你的写作。**­mary speech in Chapter 2. Consider again the first proposition that had to be proven beyond a reasonable doubt, for either voluntary manslaughter or murder: that the defendant performed the acts that caused the death of the victim. This proposition is a singular causal statement. Again, take the four general hypothesis-testing criteria into account as well as the more specific ones for singular causal statements. Check your writing from the point of view of FRISCO.

**9:70 In about two pages, recount an investigation that you have performed that resulted in your drawing a general causal conclusion. Be sure to state the conclusion clearly (including a degree-of-universality term such as usually). Also, state whether and how your reasons for believ ing your causal generalization satisfy the general criteria for hypothesis testing, as well as the more specific criteria for general causal statements. Check your writing from the point of view of FRISCO.  
9:70 在大约两页的篇幅中，回顾一项你进行的调查，该调查导致你得出一个一般性的因果结论。确保清晰地陈述结论（包括通常这样的普遍性程度词）。此外，说明你相信因果推论的理由是否满足假设检验的一般标准，以及更具体的一般因果陈述的标准。从FRISCO的角度检查你的写作。**­­ments. Check your writing from the point of view of FRISCO.

9:71 Do the same for a singular causal conclusion you have drawn, paying attention to the general criteria for hypothesis testing as well as the more specific criteria for singular causal statements. Do not forget FRISCO.  
对于你所得出的单一因果结论，按照假设检验的一般标准以及特定的单一因果陈述标准进行相同的操作。不要忘记FRISCO。

­azine, etc., and supply a copy. Apply the FRISCO approach to it and report your results. Be sure to make it clear that you know whether the conclusion is a singular or general causal statement even if, in the case you pick, the distinction is not especially important. Also, pay heed to the general criteria for hypothesis testing and more specific criteria for causal statements.9:72 Find a description of a causal investigation in a book, newspaper, magazine, etc., and supply a copy. Apply the FRISCO approach to it and report your results. Be sure to make it clear that you know whether the conclusion is a singular or general causal statement even if, in the case you pick, the distinction is not especially important. Also, pay heed to the general criteria for hypothesis testing and more specific criteria for causal statements.  
9:72 在一本书、报纸、杂志等中找到一份因果调查的描述，并提供一份副本。对其应用FRISCO方法并报告你的结果。确保清楚地表明你知道结论是单一的还是一般的因果陈述，即使在你选择的案例中，这种区别并不特别重要。此外，要注意假设检验的一般标准和因果陈述的更具体标准。

Best-Explanation and Causal Reasoning in Position Papers and Other Argumentative Writings  
最佳解释和因果推理在立场文件和其他辩论写作中

­ten argument to support the conclusion that Napoleon died of arsenic poisoning. But often the final conclusion itself is not a best explanation or causal conclusion. Instead, some best-explanation or causal conclusions are intermediate conclusions offered in support of a final conclusion reached by some other type of reasoning.In much argumentative writing, we use best-explanation and causal reasoning. Often our final conclusion is itself a best-explanation conclusion, as in the historian’s written argument to support the conclusion that Napoleon died of arsenic poisoning. But often the final conclusion itself is not a best explanation or causal conclusion. Instead, some best-explanation or causal conclusions are intermediate conclusions offered in support of a final conclusion reached by some other type of reasoning.  
在很多辩论性写作中，我们使用最佳解释和因果推理。通常我们的最终结论本身就是一个最佳解释的结论，就像历史学家为支持拿破仑死于砷中毒的结论而写的论证一样。但是最终结论本身并不总是一个最佳解释或因果推理的结论。相反，一些最佳解释或因果推理的结论是为了支持通过其他类型的推理得出的最终结论的中间结论。

One such example of writing that you have seen (in two different places in this book) is Bradley’s argument that Iago is not a melodramatic villain, at least as I have construed his argument. Earlier in this chapter, you saw some best-explanation rea­soning supporting the conclusion that Emilia did not suspect Iago of villainy. This conclusion was an intermediate conclusion in a larger argument, for it served as a rea­son in a deductive argument (presented in Chapter 7) leading to the final conclusion that Iago was not a melodramatic villain. This final conclusion is not a best-explanation conclusion, but was supported by a best-explanation conclusion. Furthermore, the final conclusion that Iago was not a melodramatic villain could itself become an inter­mediate conclusion used to support a value conclusion, “A person playing Iago should appear and act quite normally in front of almost everyone in the play.” (Incidentally, this conclusion is not just a trivial addition in all situations. Some performers and directors might want to do things differently, playing Iago to look like a melodra­matic villain to defy what is now tradition. Alternatively, some budding actors might not know what a melodramatic villain would be like and might not realize that melo­dramatic villains do not appear and act quite normally.)

­sions (such as “DDT weakens birds’ egg shells”). The conclusion that DDT weakens birds’ egg shells is a causal conclusion (It is common for arguments leading to value conclusions (such as “We should not use DDT to kill insects”) to make use of intermediate best-explanation conclusions (such as “DDT weakens birds’ egg shells”). The conclusion that DDT weakens birds’ egg shells is a causal conclusion (weakens being a causal word, if one construes causal broadly, as I do), or at least a best-explanation conclusion, that serves as a reason for the value conclusion. Most value arguments have one or more of this type of reason in support of their conclusions. These reasons should be defensible. The defense can be testimony from a credible source (discussed in Chapter 3), a bestexplanation argument (discussed in this and the previous chapters), or a combination.  
你在这本书的两个不同地方看到的写作示例之一是布拉德利的论点，即我所理解的他的论点是，伊阿古并不是一个滥情的恶棍。在本章的早些时候，你看到了一些支持埃米莉亚并不怀疑伊阿古是恶棍的最佳解释推理。这个结论是一个更大论证中的中间结论，因为它作为一个推理论证（在第7章中提出）的理由，导致了最终结论：伊阿古并不是一个滥情的恶棍。这个最终结论并不是一个最佳解释结论，但是它被一个最佳解释结论所支持。此外，伊阿古并不是一个滥情的恶棍的最终结论本身可以成为一个中间结论，用来支持一个价值结论，即扮演伊阿古的人应该在剧中几乎每个人面前表现得相当正常。（顺便说一句，在所有情况下，这个结论并不只是一个微不足道的附加内容。一些演员和导演可能希望以不同的方式做事，扮演伊阿古看起来像一个滥情的恶棍，以违背现在的传统。或者，一些新秀演员可能不知道滥情的恶棍会是什么样子，可能没有意识到滥情的恶棍并不会表现得相当正常。）导致价值结论的论证（例如我们不应该使用DDT来杀死昆虫）通常会使用中间的最佳解释结论（例如DDT会削弱鸟蛋壳）。DDT削弱鸟蛋壳的结论是一个因果关系的结论（削弱是一个因果词，如果我们广义地理解因果关系，就像我所理解的那样），或者至少是一个最佳解释结论，它作为一个理由支持价值结论。大多数价值论证在支持其结论时都有一个或多个这种类型的理由。这些理由应该是可靠的。辩护可以是来自可信来源的证词（在第3章中讨论），最佳解释论证（在本章和前几章中讨论），或者两者的结合。­­explanation argument (discussed in this and the previous chapters), or a combination.

General Writing Strategy  
一般写作策略

­ments. In any case, be aware of them and the sort of defense, if any, that you have for them. If you have no defense for one, be honest about it and note that your argu­ment does depend on it.Sometimes the reasons in your argument are basic assumptions that you feel that you can expect your audience to accept. Alternatively, they might be observations you have made, testimony from others, or conclusions you have drawn in previous arguments. In any case, be aware of them and the sort of defense, if any, that you have for them. If you have no defense for one, be honest about it and note that your argument does depend on it.  
有时候你论述中的理由是你认为你的听众可以接受的基本假设。或者，它们可能是你自己的观察，他人的证词，或者你在之前的论述中得出的结论。无论如何，要意识到这些理由以及你对它们的辩护方式（如果有的话）。如果你对其中一个理由没有辩护，要诚实地承认，并指出你的论点确实依赖于它。

In the course of your argument, keep in mind the situation and the point of view of the audience, that is, the person or people for whom you are writing. Your selection of reasons to elaborate and defend, and your selection of assumptions that you need not defend, depend in part on your audience. In presenting your argument, you are trying not only to make a good case, but to address their concerns. If your audience already accepts something as obvious, it is usually a waste of their and your time to prove it to them (although you might do so in order to point out to them that some of their beliefs do need to be defended). Continually ask yourself, “Will this make sense and be helpful to my audience?”

­nations that have occurred to you, or that have been advanced by others. Deal with these honestly, noting their weaknesses and strengths. Indicate your reasons for rejecting them, For the best-explanation parts of the argument, bring forward alternative explanations that have occurred to you, or that have been advanced by others. Deal with these honestly, noting their weaknesses and strengths. Indicate your reasons for rejecting them, if you do. Note any that still have plausibility. If there are challenges to your evidence, note them and deal with them. If any are plausible, make that clear.  
在你的论证过程中，请记住听众的情况和观点，也就是你写作的对象，即那些人。你选择要详细阐述和辩护的理由，以及你选择不需要辩护的假设，部分取决于你的听众。在提出你的论点时，你不仅要提出一个好的案例，还要解决他们的关切。如果你的听众已经接受某个事物是显而易见的，那么向他们证明它通常是浪费他们和你的时间（尽管你可能会这样做，以向他们指出他们的一些信念确实需要辩护）。不断问自己，这对我的听众来说是否有意义并且有帮助？对于论证的最佳解释部分，提出你想到的或他人提出的替代解释。诚实地处理这些解释，指出它们的弱点和优点。如果你拒绝它们，说明你的理由。注意任何仍然具有合理性的解释。如果你的证据受到质疑，请记录下来并处理。如果有任何合理的质疑，请明确指出。

When vou write a position paper that combines a variety of types of argument or consists of se∖ eral parts, you must figure out some reasonable and comprehensible order in which to put the parts. In the simplest and most direct form when writing arguments of a page or more, you start out by introducing the situation and your final conclusion, probably also summarizing the total argument. You end the position paper with a restatement of your final conclusion, alluding to the parts of your argument. I recommend this simple direct form when writing for readers in a hurry, and usuallv when the writing is being done by people who are not expert writers.  
当您撰写一个结合了各种类型的论证或由几个部分组成的立场文件时，您必须确定一些合理且易于理解的顺序来安排这些部分。在撰写一页或更多的论证时，最简单和最直接的形式是，您首先介绍情况和最终结论，可能还要总结整个论证。您在立场文件中以重申最终结论的方式结束，暗示了您的论证部分。我建议在为匆忙读者撰写时使用这种简单直接的形式，通常是由非专业作家撰写的情况下。­ment. I recommend this simple direct form when writing for readers in a hurry, and usuallv when the writing

For filling in the arguments in between, or for short arguments, there are two major direct strategies, with many variations, which I shall discuss first. I call them bottom-up and top-down strategics. As you read about these strategies, think of some particular position paper or essay that you have written or are planning to write, and consider the extent to which it exemplifies these strategies.  
对于填写之间的参数，或者对于简短的参数，有两种主要的直接策略，有很多变种，我将首先讨论它们。我称之为自下而上和自上而下的策略。当你阅读关于这些策略的内容时，请考虑一篇你已经写过或计划写的特定立场文件或论文，以及它在多大程度上体现了这些策略。

Bottom-Up Strategy  
自下而上策略

A first strategy is to build your argument by starting with the basic reasons, the sort of things that appeared at the bottom of your diagrams in Chapter 2. (I suggest that you turn back now to the suggested diagrammed answers at the end of Chapter 2, if you are not visualizing the point.) On these basic reasons, you build one or more intermediate conclusions, one at a time. Then you put together the intermediate conclusions to develop the argument that rests on them, claiming no greater strength for your argument than it deserves. Items 2:51 (male sensitivity), 2:52 (female confidence) and 2:67 (SAT scores) in Chapter 2 exemplify a bottom-up strategy (reasons first, then conclusion).  
第一种策略是通过从基本原因开始构建你的论点，这些原因是在第2章的图表底部出现的那种事物。（如果你无法将重点形象化，请回到第2章末尾的建议性图表答案。）在这些基本原因的基础上，逐步建立一个或多个中间结论。然后，将这些中间结论组合起来，发展出以它们为基础的论证，对你的论证给予恰当的评价。第2章的2:51（男性敏感性）、2:52（女性自信心）和2:67（SAT成绩）是自下而上的策略的例子（先有原因，然后得出结论）。­clusions to develop the argument that rests on them, claiming no greater strength for your argument than it deserves. Items 2:51 (male sensitivity), 2:52 (female confi­dence) and 2:67 (SAT scores) in Chapter 2 exemplify a bottom-up strategy (reasons first, then conclusion).

Top-Down Strategy  
自上而下策略

The opposite of the bottom-up strategy is the top-down strategy, in which you start by giving your final conclusion, then your reasons, indicating somehow that you intend to defend its reasons (or if it is necessarily a short paper, that your reasons could be defended). Then you proceed to defend the reasons, each with an argument to support it. Bradley’s argument to the conclusion that Emilia never suspected Iago of villainy (Example 9:3 in this chapter) exemplifies a simplified top-down strategy, as does Item 2:66 (research using animals) in Chapter 2 (conclusion first, then reasons).  
自下而上策略的相反是自上而下策略，您首先给出最终结论，然后给出您的理由，以某种方式表明您打算为其理由辩护（或者如果这是一篇必须简短的论文，则表明您的理由可以被辩护）。然后您继续为每个理由进行辩护，并提供支持该理由的论证。布拉德利对于艾米莉娅从未怀疑伊阿古的邪恶（本章的示例9:3）的结论的论证是一个简化的自上而下策略的例子，第2章（使用动物进行研究）的项目2:66也是如此（先给出结论，然后给出理由）。

Combination Strategies  
组合策略

­gies. Examples 2:61 (schools’ function) and 2:68 (conflict of interest) in Chapter 2 exemplify a combination of the two strategies (reasons, conclusion, more reasons). The prosecutor’s speech in Chapter 2 exemplifies a different combination strategy that is appropriate for longer arguments (final conclusion, a series of arguments lead­ing to intermediate conclusions, final conclusion repeated).As you might guess, there are various possible combinations of these two basic strategies. Examples 2:61 (schools’ function) and 2:68 (conflict of interest) in Chapter 2 exemplify a combination of the two strategies (reasons, conclusion, more reasons). The prosecutor’s speech in Chapter 2 exemplifies a different combination strategy that is appropriate for longer arguments (final conclusion, a series of arguments leading to intermediate conclusions, final conclusion repeated).  
"正如你可能猜到的那样，这两种基本策略有各种可能的组合方式。第2章的例子2:61（学校功能）和2:68（利益冲突）展示了这两种策略的组合（原因、结论、更多原因）。第2章中的检察官演讲展示了一种适用于较长论证的不同组合策略（最终结论、一系列导致中间结论的论证、重复的最终结论）。”

Indirect Strategies  
间接策略

­ple are expected not to thrust themselves forward.Some situations call for one of a variety of indirect strategies. For example, sometimes you might not explicitly state the conclusion, as in Items 2:62 (homework) and 2:65 (street lights) in Chapter 2. Leaving your conclusion unstated sometimes makes the writing more interesting. Sometimes the writing becomes more effective, because the reader has to infer or construct the conclusion and then feels that the conclusion is his or her own conclusion. Sometimes such writing is more discreet because in the situation, the reader would feel affronted by your forwardness in a direct aggressive statement of the conclusion. This latter situation is common in cultures where people are expected not to thrust themselves forward.  
有些情况需要采取各种间接策略。例如，在第2章的项目2:62（家庭作业）和2:65（路灯）中，有时您可能不会明确陈述结论。有时，不明确陈述结论会使写作更有趣。有时，写作会更加有效，因为读者必须推断或构建结论，然后感觉到结论是他或她自己的结论。有时，这样的写作更加谨慎，因为在这种情况下，读者会对您直接、积极地陈述结论感到冒犯。后一种情况在那些期望人们不要过于自我表现的文化中很常见。

­ure out your conclusion—or, more seriously, will misread you and hold you respon­sible for a view you do not hold. An occasional danger is that an audience in a hurry will just not want to take the time to figure it out. Perhaps the audience should be willing to take the time, but many do not. Furthermore, often they are not expert enough to draw the appropriate conclusion, and need help.A major danger in not stating your conclusion is that your audience will not figure out your conclusion—or, more seriously, will misread you and hold you responsible for a view you do not hold. An occasional danger is that an audience in a hurry will just not want to take the time to figure it out. Perhaps the audience should be willing to take the time, but many do not. Furthermore, often they are not expert enough to draw the appropriate conclusion, and need help.  
不陈述你的结论的一个主要危险是你的听众将无法理解你的结论，或者更严重的是，会误读你并认为你持有一种你并不持有的观点。偶尔的危险是匆忙的听众可能不愿花时间去理解。也许听众应该愿意花时间，但很多人不愿意。此外，他们通常不够专业，无法得出适当的结论，需要帮助。

­Not stating the conclusion can be a deceptive technique. It is a way of avoiding responsibility for a conclusion that you want to draw, but really cannot defend very well. Then you can always say, “I never said that!” On the other hand, if the conclu sion is justified, but you would get in trouble from narrow-minded readers for asserting it, it can be useful to avoid stating it—just to keep out of trouble, which under some regimes can be serious: possibly prison, execution, or torture.  
不陈述结论可能是一种欺骗性的技巧。这是一种回避对你想要得出的结论负责的方式，但实际上无法很好地为其辩护。然后你总是可以说，我从来没有说过那个！另一方面，如果结论是有理由的，但你会因为断言它而遭到心胸狭窄的读者的麻烦，避免陈述它可能是有用的-只是为了避免麻烦，因为在某些体制下，麻烦可能是严重的：可能是监禁、处决或酷刑。­ing it, it can be useful to avoid stating it—just to keep out of trouble, which under some regimes can be serious: possibly prison, execution, or torture.

­portive of the conclusion or its denial, and that does not help to show the significance of the conclusion). Such material can increase interest and, like avoiding stating the conclusion, can help avoid the charge that the writer is thrusting himself or herself forward by presuming to suggest w hat is relevant and what is irrelevant.Another indirect strategy is to talk around the issue, sometimes introducing irrelevant material (that is, material of interest and on the topic, but that is not supportive of the conclusion or its denial, and that does not help to show the significance of the conclusion). Such material can increase interest and, like avoiding stating the conclusion, can help avoid the charge that the writer is thrusting himself or herself forward by presuming to suggest w hat is relevant and what is irrelevant.  
另一种间接策略是绕开问题，有时引入无关的材料（即，与主题相关但不支持结论或否定结论的材料，也不帮助展示结论的重要性）。这样的材料可以增加兴趣，并且像避免陈述结论一样，有助于避免被指责为自以为是地暗示什么是相关和什么是无关的作者自我推销。

Talking around the issue can serve these purposes well. But the dangers are that some readers will miss the argument and will lose patience with the extra time required. For other readers, these are not problems.  
绕过问题可以很好地达到这些目的。但是危险在于一些读者会错过论点，并对需要额外时间感到失去耐心。对于其他读者来说，这些不是问题。

Summary  
摘要

You must choose your strategy after analyzing the situation, including your audience. Be ready to alter your strategy, depending on its reception by the audience. In any case, be aware of your ow,n and your audience’s probable assumptions. Make sure that your own are made clear and that theirs are addressed. Note and deal with alternative hypotheses and possible challenges to your evidence, as above. Be sure to claim no greater (or less) strength for your argument than it deserves.  
在分析情况（包括受众）之后，您必须选择您的策略。根据受众的反应，准备好调整您的策略。无论如何，要意识到您自己和受众的可能假设。确保您自己的假设清楚，并解决他们的假设。注意并处理替代性假设和对您的证据可能提出的挑战，如上所述。确保对您的论证不要过高（或过低）评价。­native

The most straightforward position paper writing strategy is to present your conclusion, discuss its significance and your argument plan, offer your reasons, consider counterarguments, and summarize. Other strategies have advantages and disadvantages, the most common of which is failure to communicate your point.  
最直接的立场文件写作策略是提出你的结论，讨论其重要性和你的论证计划，提供你的理由，考虑反对意见，并总结。其他策略有优点和缺点，其中最常见的是未能传达你的观点。­clusion, discuss its significance and your argument plan, offer your reasons, consider ­

Check-Up 9D

**9:73-9:79 Reread and revise each of Items 9:66-9:72 in light of the advice given in this last section about writing involving hypothesis formulation and judgment. Make sure that you have a thesis, which might be the hypothesis, might be that the hypothesis is probably false, might be that there is insufficient evidence to establish or refute the hypothesis, etc. Make sure that you are aware of your organization plan and that you are aware of the role of each sentence in your paper. Be ready to read the result to the class as a prelude to discussion of the issue.  
9:73-9:79 在阅读和修改9:66-9:72中的每一项时，请考虑到这最后一节关于涉及假设制定和判断的写作建议。确保你有一个论题，可能是假设，可能是假设可能是错误的，可能是没有足够证据来证实或反驳假设等。确保你了解你的组织计划，并且你了解每个句子在你的论文中的作用。准备好向班级朗读结果，作为讨论问题的序幕。**

Suggested Answers for Chapter 9  
第9章的建议答案

**Check-Up 9A**

**9:1** T **9:2** F **9:3** T **9:4** F **9:5** T

**9:2 Change proves it true to helps to support it.  
9:2 改变证明它是真实的并支持它。**

**9:4 Change does not weaken to severely weakens.  
9:4 变化不是变弱，而是严重削弱。**

**9:6 Arlene did not intend to hurt him severely. That explains why <EF>  
9:6 阿琳并不打算严重伤害他。这就解释了为什么 <EF>**

the blow was of moderate force.   
這一擊力度中等。

**9:7 <EF> Sandra did not flinch when I told her that Karl was out with Martine last night. That’s why I think she knows already.  
9:7 <EF> Sandra昨晚我告诉她Karl和Martine在外面时没有表现出任何惊讶。所以我认为她已经知道了。**

**9:8 What is the problem? I’ll tell you. The fuel filter is clogged with dirt. That explains why <EF> the car will not run.  
9:8 问题是什么？我告诉你。燃油过滤器被污垢堵塞了。这就解释了为什么车子无法运行。**

**9:9 George Orwell’s intention in 1984 was to persuade the British that totalitarianism is bad. That explains why <EF> he depicted so many things that arc offensive to the British people.  
乔治·奥威尔在《1984》中的意图是说服英国人极权主义是不好的。这解释了为什么他描绘了那么多冒犯英国人的事情。**

**9:10 <EF> When I turn the key to my car, there is no sound. <EF> When I flip on the light switch, there is no light. <EF> When I turn on the radio, there is no sound or light. You might suspect that <AH> the battery connections are unhooked, but they are not. <IE> I looked. The car battery must be dead.  
当我转动汽车钥匙时，没有声音。当我打开灯开关时，没有灯光。当我打开收音机时，没有声音或灯光。你可能怀疑电池连接被拆开了，但实际上没有。我看了。汽车电池可能没电了。**

**9:11 “I see that you have been to the cemetery,” said the detective. <EF> “You have mud on your shoes that is the color of the mud at the cemetery. <EF> You are perspiring. <EF> You look upset. And <EF & IE> you have a hint of a sunburn. If <AH> you had gone to the movies [end of AH], the sunburn you have would not be there.  
9:11 我看到你去过墓地，"侦探说道。"你的鞋上有墓地上的泥土颜色的泥土。"你在出汗。"你看起来心烦意乱。"而且"你有一点晒伤。如果"你去看电影的话，你现在的晒伤就不会有了。**

**9:12** Deliberately omitted.

**9:13 (9:6) A possible alternative hypothesis is suggested with the item.  
9:13 (9:6) 可能存在一种替代假设与该项相关。**

**9:14 (9:7)** Sandra no longer cares for Karl.

**9:15 (9:8) The fuel line is bent so severely that it is closed.  
9:15 (9:8) 燃油管道弯曲得如此严重，以至于被关闭。**

**9:16 (9:9) George Orwell was just trying to make a good story with well- motivated characters.  
9:16 (9:9) 乔治·奥威尔只是试图创作一个有着良好动机角色的好故事。**

**9:17 (9:10) The wires behind the dashboard to the ignition, lights, and radio are loose or detached.  
9:17（9:10）仪表盘后面的导线与点火、灯光和收音机松动或脱落。**

**9.T8 (9:11) It is a hot day and you have been searching unsuccessfully in the field for your dog. The mud in the field is the same color as the mud at the cemetery.  
9.T8 (9:11) 这是一个炎热的天气，你在田地里一直找不到你的狗。田地里的泥土颜色和墓地的泥土颜色一样。**

Deliberately omitted from answers.  
故意从答案中省略。

**9:19 (9:12)**

**+ 9:20-9:26 9:20 (9:6, 9:13) 9:21 (9:7, 9:14)**

**9:22 (9:8, 9:15)**

**9:23 (9:9, 9:16)**

**9:24 (9:10, 9:17)**

**9:25 (9:11, 9:18)**

You might well have come up with different responses:  
你可能会得出不同的回答：

Possible answers are suggested with the item.  
可能的答案是与项目建议的。

Sandra told me this morning that she is in love with Karl. Assumption: Sandra was telling the truth.  
桑德拉今天早上告诉我她爱上了卡尔。假设：桑德拉说的是真的。

I inspected the fuel line and found it to have no sharp turns. Assumption: If a fuel line has no sharp turns, then it is not bent so severely that it is closed.  
我检查了燃油管道，发现它没有明显的弯曲。假设：如果一个燃油管道没有明显的弯曲，那么它没有被弯曲得严重到关闭。

Orwell said that he was not just trying to make a good story by depicting those consequences. Assumption: Orwell was telling the truth.  
奥威尔说，他不仅仅是为了描述那些后果而努力创作一个好故事。假设：奥威尔说的是真的。

I inspected the wires behind the dashboard and found nothing loose or detached. Assumption: Mv inspection was thorough.  
我检查了仪表盘后面的电线，没有发现松动或脱落的情况。假设：我的检查非常彻底。

I could find no mud in the field that is the same color as the mud in the cemetery. Assumption: I looked everywhere in the field.   
在田地里，我找不到和墓地里的泥土颜色相同的泥土。假设：我在田地里到处都找过了。

**9:26 (9:12, 9:19) Deliberately omitted from the answers.  
9:26 (9:12, 9:19) 故意从答案中省略**

**9:27-9:32 Varying judgments about these items are possible, depending on what else you assume about the situation and the facts. The important thing here is that you give a reasonable justification of the answer you choose. I shall give mine, but yours might reasonably differ.  
9:27-9:32 对于这些事项的判断可能因您对情况和事实的其他假设而有所不同。重要的是您对所选择答案给出合理的理由。我将给出我的理由，但您的理由可能合理地不同。**

**9:27 a. Support, because the hypothesis’ meteor would explain the exceptionally large amount of iridium in that laver.  
9:27 a. 支持，因为假设的流星会解释那个岩石中异常大量的铱。**­tionally large amount of iridium

1. Weaken, because this is an alternative explanation of die iridium.  
   减弱，因为这是关于铱的另一种解释。
2. Weaken, because this suggests an alternative explanation of the disappearance of the dinosaurs, and because the mammals’ food supply would probably also have been shut off, thus providing evidence dιat is inconsistent witiι the hypothesis.  
   Weaken, 因为这暗示了恐龙灭绝的另一种解释，并且哺乳动物的食物供应可能也会被切断，从而提供了与假设不一致的证据。
3. Str engthen, because tiιis item provides a way that the dinosaurs could have been killed without the warm-blooded mammals also being killed. So the inconsistency just mentioned in c is resolved.  
   因此，这个物品提供了一种方式，恐龙可以被杀死，而温血哺乳动物也不会被杀死。因此，刚才在c中提到的不一致性得到了解决。
4. Weaken die specific 65-million-year hypothesis because the meteor is now placed at about 3,300 years ago. (But the occurrence of the meteor could still explain the destruction of the dinosaurs.)

**9:28 a. Support, because the arsenic in his hair could be explained by the hypothesis.  
削弱了特定的6500万年假说，因为这颗流星现在被放置在大约3300年前。（但流星的出现仍然可以解释恐龙的灭绝。）9:28 a. 支持，因为他头发中的砷可以通过这个假说来解释。**

1. Neither, because this is not inconsistent with the cancer hypothesis. He might also have had cancer.  
   既不是，因为这与癌症假设并不矛盾。他也可能患有癌症。­sis.
2. Support, because the hypothesis could explain the symptoms.  
   支持。因为这个假设可以解释症状。
3. Weaken, because (assuming the French historian to be a credible source who is not influenced by a conflict of interest) the historian’s statement is in conflict with the hypothesis.  
   Weaken, because (assuming the French historian to be a credible source who is not influenced by a conflict of interest) the historians statement is in conflict with the hypothesis.­
4. Support, because it helps to make the hypothesis plausible.  
   支持。

**9:29** Deliberately omitted.

**9:30 a. Support, because this evidence rules out an alternative hypothesis, b. Support, because this evidence rules out an alternative hypothesis, c. Weaken, because (assuming that whales have at least as much resistance as humans, and that the dosage is retained) this dosage is inconsistent with the hypothesis. If the hypothesis were true, we would expect a much stronger concentration.  
9:30 a. 支持，因为这个证据排除了一个替代假设，b. 支持，因为这个证据排除了一个替代假设，c. 削弱，因为（假设鲸鱼至少具有与人类相同的抗药性，并且剂量被保留）这个剂量与假设不一致。如果假设是真的，我们会预期有更高的浓度。**

1. Neither, because I cannot think of any fact explained by, or inconsistency suggested or resolved by, or plausibility affected by, this information.  
   既不是，因为我无法想出任何由此信息解释的事实，或者由此信息暗示或解决的不一致之处，或者由此信息影响的合理性。­
2. Support, because this information suggests a way to resolve the inconsistency noted in c.  
   支持。因为这些信息提供了解决c中所指出的不一致性的方法。
3. Support, because this information also suggests a way that the inconsistency in c could be resolved.  
   支持。因为这个信息还暗示了解决c中的不一致性的方法。

**9:31** Deliberately omitted.

**9:32 a. Support, because this information helps to provide a way that the hypothesis could explain the data, suggesting that the oil could have been sent to the wrong place.  
9:32 a. 支持，因为这些信息有助于提供一种假设能够解释数据的方式，表明油可能被发送到了错误的地方。**

1. Support, because this is more evidence that is explained by the hypothesis.  
   支持，因为这是由假设解释的更多证据。
2. Weaken, because here is evidence that is not explainable by the hypothesis (and the hypothesis was the only explanation offered).  
   减弱，因为这里有无法通过假设来解释的证据（而假设是唯一提供的解释）。
3. Weaken, because here is more evidence that is not explainable by the hypothesis.  
   减弱，因为这里有更多的证据无法通过假设来解释。
4. Weaken, because this is an alternative hypothesis that could explain the evidence.  
   这是一个可能解释证据的替代假设。
5. Strengthen, because this evidence is in conflict with the hypothe­sis suggested in *e.* (If the type of steel explains the defects, why were there good guides in those engines?)
6. Weaken, because this is a plausible alternative hypothesis.  
   加强，因为这个证据与e中提出的假设相矛盾。（如果钢的类型解释了缺陷，那为什么那些引擎中有好的导轨？）削弱，因为这是一个合理的替代假设。
7. Strengthen, because this evidence is in conflict with the alternative hypothesis mentioned in g. If this hypothesis were true, then the problems would have started to develop thirty years ago.  
   加强，因为这个证据与g中提到的替代假设相矛盾。如果这个假设是真的，那么问题应该在三十年前开始出现。
8. ­tive hypothesis mentioned in Strengthen, because this evidence is inconsistent with the alternative hypothesis mentioned in g. One might well expect the valve shaft size change to affect all engines (although it might not).  
   加强，因为这个证据与g中提到的替代假设不一致。人们可能会预期阀杆尺寸的变化会影响所有引擎（尽管可能不会）。
9. Weaken, because selective oil starvation might explain the worn guides.  
   减弱，因为选择性的油润滑不足可能解释了导轨磨损。

**9:33 and 9:34 These are up to you.  
9:33和9:34这些由你决定。**

**Check-Up 9B**

9:35 T 9:36 T 9:37 T 9:38 F 9:39 F

**9:38 Replace wwith might be.  
9:38 用可能会代替。**

**9:39 . . . can be satisfactory, although there are different ways to judge the elements.  
9:39 . . . 可以令人满意，尽管有不同的评判标准。**

**9:40 (9:6) Answer suggested with item.  
9:40 (9:6) 提示使用项目的答案。**

**9:41 (9:7) a. If a person does not flinch when told that her boyfriend is out with another woman, then she knows already. Karl is Sandra’s boyfriend.  
9:41 (9:7) a. 如果一个人被告知她的男朋友和另一个女人在一起时不动声色，那么她已经知道了。卡尔是桑德拉的男朋友。**

b. No, Sandra might be accustomed to having Karl do that and has hardened herself. Alternated, she might not really care.  
不，桑德拉可能已经习惯了卡尔做这件事并且变得坚强。或者，她可能并不在乎。

**9:42 (9:8) a. Whenever the car will not run, the fuel filter is clogged with dirt, b. No. There are many other possible causes of the car’s not running.  
9:42 (9:8) a. 每当汽车无法运行时，燃油过滤器被污垢堵塞，b. 不，汽车无法运行还有许多其他可能的原因。**

**9:43 (9:9) a. If an author depicts many things that are offensive to the people of a nation, dιat author is trying to persuade them that totalitarianism is bad.  
9:43 (9:9) a. 如果一个作者描绘了许多冒犯一个国家人民的事物，那个作者试图说服他们极权主义是不好的。**­anism is bad.

**b.** No. Authors have many possible motives for depicting offensive things. They might sιmpk want to be objecting to the offensive

things, or might simply be trying to shock people in order to sell books.  
事物，或者可能只是为了卖书而试图震惊人们。

**9:44 (9:10) a. If there is no sound when the key is turned, no light when the lights are turned on, no sound or light when the radio is turned on, and the battery connections arc hooked, then the battery is dead.  
9:44 (9:10) a. 如果转动钥匙时没有声音，打开灯时没有灯光，打开收音机时没有声音或灯光，并且电池连接已经接好，那么电池已经没电了。**

b. No. There might be a loose wire somewhere else.  
不。可能是其他地方有一根松动的电线。

**9:45 (9:11)**

1. If anyone has mud on her shoes the color of the mud at the cemetery, is perspiring, looks upset, and has a hint of a sunburn, then he or she has been to the cemetery.  
   如果有人的鞋子上有墓地上的泥土颜色，出汗，看起来心烦意乱，并且有一丝晒伤的迹象，那么他或她曾经去过墓地。
2. No, there are other ways to get the mud, to perspire, to be upset, and get a sunburn.  
   没有，还有其他方法来弄脏、出汗、心烦意乱和晒伤。

**9:46 (9:12)** Deliberately omitted.

Check-Up 9C

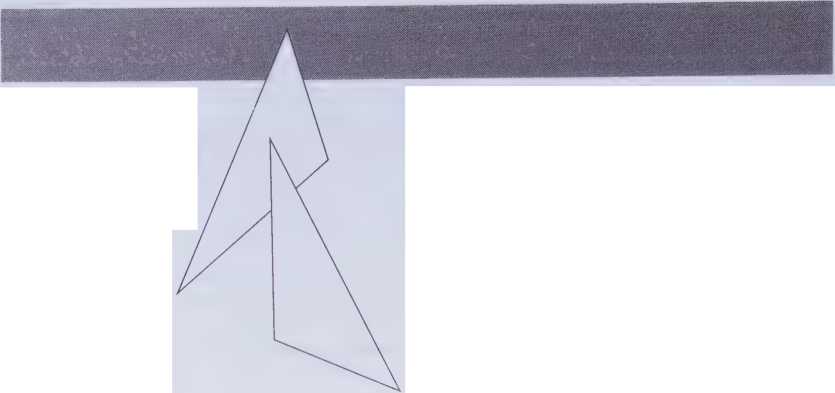
|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **9:47** | **G** | **9:48 S** | **9:49 S** | **9:50 S** | **9:51** | **G** | **9:52** | **G** |
| **9:53** | N | **9:54 S** | **9:55 T** | **9:56 T** | **9:57** | **T** | **9:58** | **F** |
| **9:59**  **9:65**  **9:58**  **9:62** | **T 9:60 T 9:61 T 9:62 F 9:63** T  Change *establishes* to *by itself does not establish.*  Omit *One way of;* add *not sufficient* before *to show.* | | | | | **T** | **9:64** | **F** |

9:64 Replace happening before the effect happened with being a deliberate human action.  
9:64 在效果发生之前替换为故意的人类行为。

**9:66-9:72 Up to you. Make sure that you have stated your position clearly, and that you have considered all relevant criteria. Have you had FRISCO in mind when doing each of these?  
由你决定。确保你已经清楚地表明了你的立场，并且考虑了所有相关的标准。在做这些事情时，你有没有考虑过FRISCO？**

Check-Up 9D

**9:73-9:79 Again up to you. Make sure that you have stated your thesis clearly, even though the hypothesis you are considering might itself not be clear enough, that you have applied the relevant criteria, that you have had FRISCO in mind, and that your organization plan makes sense.  
再次由你决定。确保你已经清楚地陈述了你的论点，即使你所考虑的假设本身可能不够清晰，也要应用相关的标准，牢记FRISCO，并确保你的组织计划是合理的。**

Generalization: Meaning, Sampling, Typicality, Tables, Graphs, and Correlations  
概括：意义、抽样、典型性、表格、图表和相关性

CHAPTER

10

Do you believe the following generalizations?  
你相信以下的概括吗？

1. A person in trouble is more likely to get help from a group of witnesses to the person’s problems than from a single individual.  
   一个遇到麻烦的人更有可能从一群目击者那里得到帮助，而不是单个个体。
2. Mental patients are usually not dangerous to other people.  
   精神病患者通常不会对他人构成危险。
3. The most successful women in what is still pretty much a man’s world are most often those with older brothers.  
   在仍然基本上是男性世界的领域中，最成功的女性往往是那些有年长兄弟的人。
4. Public opinion polls are often accurate within one or two percentage points.  
   公众舆论调查通常在百分之一或百分之二的范围内准确。
5. Friendships are more likely to be formed between opposites than people who are similar to each other.  
   朋友关系更容易在互相对立的人之间形成，而不是相似的人之间。
6. ­thing than in the next several hours.You are apt to forget more in the first few minutes after learning something than in the next several hours.  
   在学习某事之后的前几分钟内，你很容易忘记比在接下来的几个小时内还要多的内容。

According to Gregory R. Kimble, author of How to Use (and Misuse) Statistics,1 who was at the time the chair of the psychology department of Duke University, the odd- numbered generalizations are false and the even-numbered ones are true. On the basis of an application of the criteria for credibility, I am inclined to believe him, although there are a few problems with interpreting and applying this set of generalizations.  
根据杜克大学心理学系主任格雷戈里·R·金布尔的著作《如何使用（和误用）统计学》的作者，奇数编号的概括是错误的，而偶数编号的概括是正确的。根据可信度的标准，我倾向于相信他，尽管在解释和应用这一系列概括时存在一些问题。

­ers’ ideas, but in your own writing. You will encounter ways of expressing various types of generalizations, ways of presenting them visually, and ways of justifying them.The ideas in this chapter should be of use not only in reading and evaluating others’ ideas, but in your own writing. You will encounter ways of expressing various types of generalizations, ways of presenting them visually, and ways of justifying them.  
本章的思想不仅适用于阅读和评估他人的思想，也适用于你自己的写作。你将会遇到各种表达概括的方式，以及将其可视化和证明的方式。

Types of Generalizations  
一般化的类型

First, let us be clear about what generalizations are. A generalization is a statement about a number of cases. Generalizations can be categorized according to whether they go beyond the data on which they arc based and according to their degree of  
首先，让我们明确一下什么是概括。概括是关于一系列情况的陈述。根据概括是否超出其所基于的数据以及其程度，可以将概括分为不同类别。

1. (Englewood Cliffs, NJ: Prentice Hall, 1978).

universality. Some best-explanation hypotheses are generalizations, but not all. Furthermore, not all generalizations are best-explanation hypotheses.2 For example, the statement “A rising barometer is usually accompanied by improvements in the weather” is an example of a generalization that is not a best-explanation hypothesis. It does not account for the weather improvement last week (although it justified a prediction of probable improvement). Satisfying the criteria for best-explanation hypotheses (when they are relevant) can provide good support for generalizations, but in this chapter, I shall focus on other kinds of support.  
普遍性。一些最佳解释假设是概括性的，但并非全部。此外，并非所有的概括都是最佳解释假设。例如，升高的气压计常常伴随着天气的改善，这是一个不是最佳解释假设的概括。它无法解释上周的天气改善（尽管它可以预测可能的改善）。满足最佳解释假设的标准（当它们相关时）可以为概括提供良好的支持，但在本章中，我将专注于其他类型的支持。

Limited-to-the-Data and Inferred Generalizations  
有限数据和推断的概括

Limited-to-the-Data Generalizations  
有限于数据的概括

These cover only the cases that have been examined. Suppose that we examine the eye color of everyone in the room, counting the number of blue-eyed people and the total number of people, and find eight blue-eyed people out of twenty-two. The resulting generalization “Eight out of the twenty-two people here have blue eyes” is a limited- to-the-data generalization. It does not go beyond the data provided by our counting.  
这些只涵盖了已经被检查过的情况。假设我们检查房间里每个人的眼睛颜色，计算出有多少人是蓝眼睛，并且计算出总人数，结果发现在22个人中有8个是蓝眼睛。由此得出的一般化结论是这里的22个人中有8个人有蓝眼睛，这是一种基于数据的有限化归纳。它并没有超越我们计数所提供的数据。

These generalizations appear to be the easiest to establish because they do not go beyond the data, generally requiring only counting. However, some difficulty often springs from the meaning of the terms involved, from bias by the investigator, or from the difficulty of securing access to countable things. For example, the generalization “All countries have social class structures (as opposed to being classless societies)” could be a limited-to-the-data generalization, but it might well suffer from all three of those problems. Deciding how to tell whether a country has a social class structure could be quite difficult. The investigator might well be biased, and access to information in many countries is difficult.  
这些概括似乎是最容易建立的，因为它们不超出数据范围，通常只需要计数。然而，有些困难常常源于涉及术语的含义，调查者的偏见，或者获取可计数事物的困难。例如，概括“所有国家都有社会阶层结构（而不是无阶级社会）”可能是一个基于数据的概括，但它可能会受到这三个问题的困扰。判断一个国家是否有社会阶层结构可能会非常困难。调查者可能存在偏见，并且在许多国家获取信息是困难的。­­

For an illustration of these difficulties in a different field, suppose we examine fifty’ mental patients and judge that only four are dangerous to other people. We might then state the generalization “Four of these fifty mental patients are dangerous to other people.” This generalization does not go beyond our counting data, but there are still two standard problems. One problem is in determining what actually counts as evidence—in this case, of dangerousness in a patient. A second standard problem is in avoiding bias of the investigator—in this case, bias in determining whether a particular patient is dangerous. The problem of access might also be quite difficult, but in this case, I assumed that problem had been handled.  
对于在不同领域中这些困难的说明，假设我们检查了五十名精神病患者，并判断只有四个对其他人构成危险。我们可以得出这样的概括：这五十名精神病患者中有四个对其他人构成危险。这个概括并没有超出我们的计数数据，但仍然存在两个标准问题。一个问题是确定什么实际上算作证据——在这种情况下，是患者的危险性。第二个标准问题是避免调查者的偏见——在这种情况下，是确定某个特定患者是否危险。获取信息的问题可能也很困难，但在这种情况下，我假设这个问题已经解决了。­

These three kinds of problems hold for inferred generalizations also, and must always be kept in mind. They' come under at least the C and S in FRISCO, and inevitably the I as well.  
这三种问题也适用于推断的概括，必须时刻牢记。它们至少涉及FRISCO中的C和S，而且不可避免地也涉及I。

Inferred Generalizations  
推断概括

For the rest of the chapter, I shall focus on inferred generalizations. They go beyond the data on which they are based by claiming that the characteristic holds for a larger group. As I interpret Kimble’s generalizations, they are all inferred generalizations.  
在接下来的章节中，我将专注于推断性的概括。它们超越了它们所基于的数据，声称这种特征适用于一个更大的群体。根据我的理解，金布尔的概括都是推断性的概括。

1. See Robert H. Ennis, “Enumerative Induction and Best Explanation,” The Journal of Philosophy, 65 (18), 1968, pp. 523-530.   
   见罗伯特·H·恩尼斯，《列举归纳与最佳解释》，《哲学杂志》，65（18），1968年，第523-530页。

For example, his generalization about mental patients applies to mental patients in general, not just to those studied.  
例如，他对精神病患者的概括适用于一般的精神病患者，而不仅仅是那些被研究过的。

­cians. Other inferred generalizations are about limitless populations, not all of whose members could be identified and studied, such as all mental patients, some of whom are dead, some of whom are not yet patients of any kind, and some not yet even born. We cannot secure the much-desired random sample of them. (There is more about random samples in the next section.) Generalizations that apply to limitless popula­tions are theoretically the most difficult to evaluate because the nature of the popu­lation in the studied cases might be significantly different from the population in the cases we cannot study, rendering the generalization inapplicable. All of Kimble’s gen­eralizations apply to limitless populations.Some inferred generalizations are about a population, each member of which could be identified and studied if we had time and resources, such as a generalization about all practicing physicians in Urbana, Illinois, based on a sample of those physicians. Other inferred generalizations are about limitless populations, not all of whose members could be identified and studied, such as all mental patients, some of whom are dead, some of whom are not yet patients of any kind, and some not yet even born. We cannot secure the much-desired random sample of them. (There is more about random samples in the next section.) Generalizations that apply to limitless populations are theoretically the most difficult to evaluate because the nature of the population in the studied cases might be significantly different from the population in the cases we cannot study, rendering the generalization inapplicable. All of Kimble’s generalizations apply to limitless populations.  
一些推断的概括是关于一个人口的，如果我们有时间和资源，每个成员都可以被识别和研究，比如基于那些医生的样本，关于伊利诺伊州厄巴纳市所有执业医生的概括。其他推断的概括是关于无限人口的，不是所有成员都可以被识别和研究的，比如所有的精神病患者，其中一些已经死亡，一些还不是任何类型的患者，还有一些甚至还没有出生。我们无法获得所需的随机样本。（关于随机样本的更多内容将在下一节中介绍。）适用于无限人口的概括在理论上是最难评估的，因为在研究的案例中，人口的性质可能与我们无法研究的案例中的人口显著不同，使得这种概括不适用。金布尔的所有概括都适用于无限人口。

Degree of Universality  
```普适度```

*Universal generalizations hold that every member of the class being considered has the stated characteristic. They have the form “All √Γs are B’s.” Here are three examples:  
普遍的普遍性规律认为，被考虑的类别中的每个成员都具有所述的特征。它们的形式为所有√Γs都是Bs。这里有三个例子：*

1. All of the people in this room are adults.  
   这个房间里的所有人都是成年人。
2. Every action has an equal and opposite reaction.  
   每一个动作都有一个相等而相反的反作用力。
3. Societies always develop class systems, even when organized with the goal of being classless.  
   社会总是发展出阶级制度，即使是以无阶级为目标进行组织的。

­ization because I looked at everyone in the universe that was mentioned (people in the room) and found only adults. The other two are universal inferred generalizations (and come under the Zin The first of these universal generalizations is also a limited-to-the-data generalization because I looked at everyone in the universe that was mentioned (people in the room) and found only adults. The other two are universal inferred generalizations (and come under the Zin FRISCO). Not all of the cases to which these last two generalizations apply have been examined.  
这些普遍概括中的第一个也是一种基于数据的有限概括，因为我观察了被提及的宇宙中的每个人（房间里的人），并且只发现了成年人。另外两个是普遍推断概括（属于Zin FRISCO）。并没有检查所有适用于这两个概括的情况。­eralizations apply have been examined.

*Less-than-universal inferred generalizations claim that the characteristic holds for some (loosely or precisely specified) subclass of the members of the class. All six examples from Kimble’s list are less-than-universal inferred generalizations, as is the following probability generalization: “The probability of getting a four on one roll of a die is 1 in 6.” According to this probability generalization, one-sixth of the rolls, in the long run, should be fours. This is less than universal because it says neither that every roll will be a four nor that none will be a four.  
不完全普遍推断的一般性陈述声称该特征适用于类的某个（松散或精确指定的）子类的成员。金布尔的六个例子都是不完全普遍推断的一般性陈述，以下概率推断也是如此：掷一次骰子得到四的概率是六分之一。根据这个概率推断，在长期来看，六分之一的掷骰子结果应该是四。这不是普遍性的，因为它既没有说每次掷骰子都是四，也没有说没有一次是四。*

Gambler's Fallacy

One danger in applying a probability statement is to fall into the trap of the gambler’s fallacy. Suppose that the last ten rolls of the die have not been fours. Does that increase the chances of getting a four this next roll? To think so, assuming that the die is an honest one, is to commit the gambler's fallacy. If the six faces of a die have equal chances of coming up on top, then the past history does not affect the next roll at all. The chances of getting a four on the next roll are still 1 in 6, even though the last ten rolls have not been fours. But remember that I said, “assuming that the die is an honest one.’ If a long run record shows something significantly different from one out of six, then there is reason to suspect the die.   
应用概率陈述的一个危险是陷入赌徒谬误的陷阱。假设掷骰子的最后十次结果都不是四。这是否增加了下一次掷出四的机会？如果这样认为，假设骰子是公正的，那就是犯了赌徒谬误。如果骰子的六个面出现的机会相等，那么过去的历史不会对下一次掷骰子产生任何影响。即使过去的十次掷骰子结果都不是四，下一次掷出四的机会仍然是六分之一。但请记住，我说的是假设骰子是公正的。如果长期记录显示与六分之一明显不同的结果，那么就有理由怀疑骰子。

Streak Theory  
连胜理论

Suppose that the last two rolls have been fours. Does that increase the chances of getting a four on the next roll? Suppose you have been having a run of especially good hands at cards. Does that mean that the next hand is more likely to be better than average? According to the streak theory, the answers are both yes. The streak theory holds that if you have been having a streak of one kind of thing, then the next shot is more likely to be that kind of thing. But if the die and the cards are honest, the streak theory is wrong also. The probabilities do not change with history.  
假设最后两次掷骰子的结果都是四。这是否增加了下一次掷骰子得到四的机会？假设你在打牌时一直有一连串好牌。这是否意味着下一手牌更有可能比平均水平更好？根据连胜理论，答案都是肯定的。连胜理论认为，如果你一直连胜某种事物，那么下一次的结果更有可能是那种事物。但是如果骰子和牌是公正的，连胜理论也是错误的。概率不会因为历史而改变。­ting a four on the next roll? Suppose you have been having a

­ability of getting a four is 1 in 6. (It is just that such a result is unlikely, if the proba­bility statement is correct.) Similarly, finding one mental patient who is dangerous to othersGetting three fours in a row does not prove wrong the statement that the probability of getting a four is 1 in 6. (It is just that such a result is unlikely, if the probability statement is correct.) Similarly, finding one mental patient who is dangerous to others—or finding several—does not prove wrong the generalization about mental patients.  
连续得到三个四并不证明得到四的概率是1/6是错误的。（只是如果概率陈述是正确的话，这样的结果是不太可能的。）同样地，找到一个对他人有危险的精神病患者，或者找到几个这样的患者，并不证明关于精神病患者的概括是错误的。

A Trade-off: Ease of Support Versus Utility in Application  
应用程序中的支持易用性与实用性之间的权衡

In general, a few counterexamples do not prove a less-than-universal generalization w rong because the generalization does not claim to tell us what to expect or believe for every case. It tells us roughly what to expect in the long run for some amount of the cases. But there is a trade-off. The more a generalization is insulated from counterexamples, the less guidance it provides about what to believe or do. Even those that loosely specify a proportion or probability give us more guidance than those that use words such as sometimes and often.  
通常情况下，一些反例并不能证明一个不完全普遍的概括是错误的，因为这个概括并没有声称告诉我们每个情况下应该期望或相信什么。它只是大致告诉我们在某些情况下长期来看应该期望什么。但是这其中存在一个权衡。一个概括与反例的隔离程度越高，它提供的关于相信或行动的指导就越少。即使那些宽泛地指定比例或概率的概括，也比那些使用“有时”和“经常”等词语的概括提供更多的指导。­

Examples of less-than-universal generalizations that specify a proportion very loosely are Kimble’s examples numbered 1 ( more likely), 2 (usually), 3 (most often), 5 (more likely), and 6 (more . . . than). In these cases, the loose proportion is over one half. In contrast, a precise proportion (1 in 6) is specified in the probability generalization about the die.  
指定比例非常宽泛的非普遍概括的例子包括金布尔的例子编号1（更有可能），2（通常），3（最常），5（更有可能）和6（比……更多）。在这些情况下，宽泛的比例超过一半。相比之下，关于骰子的概率概括中指定了一个精确的比例（6分之1）。­

But some less-than-universal generalizations indicate only a rough absolute number of cases (rather than a proportion or a probability). For example, generalizations containing the word often often (!) do not give us even a rough proportion. Consider this one: “Loud music often emanates from automobiles at this corner.” This generalization tells us that loud music occurs at this corner with a frequency that is significant, but it could be only 10 percent of the time. All that is required to satisfy the requirements imposed by the word often is that it happen a good number of times, but not a high percentage of times. The word often is less helpful in giving us guidance than one that uses the word usually, which would require at least over 50 percent in the long run.  
但是一些不太普遍的概括只是表示大致的绝对数量（而不是比例或概率）。例如，包含词 often 的概括通常 (!) 并不给我们一个大致的比例。考虑这个例子：在这个街角，经常会传出很大声的音乐。这个概括告诉我们，在这个街角，大声音乐的发生频率是显著的，但可能只有10%的时间。满足 often 所要求的只是它发生的次数很多，而不是高百分比的次数。与使用 usually 这个词的概括相比，often 这个词在给我们指导方面不太有帮助，usually 要求至少在长期内超过50%的时间。­izations ­isfy

The meaning of often is heavily dependent on the situation and people’s desires and expectations. In the case of an annoyance such as (for me) loud music emanating from cars, one in ten would be considered often. But one would not say “The salespeople at this store are often helpful” if they are helpful only 20 percent of the time. On the other hand, you might say “I often find $20 bills on my porch” even if it happens only once every two or three months.  
经常­

­This does not imply that nonproportional less-than-universal inferred generalizations are useless. Sometimes they are very useful. The fire chief who was mentioned in the previous chapter knew that arson can be a cause of fires. He knew—that is, a nonproportional less-than-universal generalization. If he had eliminated all the other possibilities, as he thought, then he had good reason to believe that it was arson that caused the fire. This shows that such cun-cause knowledge can be quite useful. Can-cause generalizations are less than universal.  
这并不意味着非比例的非普遍推断的一般化是无用的。有时它们非常有用。在前一章中提到的消防队长知道纵火可能是火灾的原因。他知道——也就是说，这是一种非比例的非普遍化。如果他排除了所有其他可能性，正如他所认为的那样，那么他有充分的理由相信是纵火引起了火灾。这表明这种因果关系知识可以非常有用。因果关系的一般化是非普遍的。­

Here is another useful one: “Standing up in a canoe often causes it to tip over.” This nonproportional, less-than-universal generalization is important for people who are learning to operate canoes. It specifies a danger that under most conditions should be avoided, even though we do not have a proportional statement to offer.  
这是另一个有用的：站在独木舟上经常会导致翻船。这种非比例的、不太普遍的概括对于学习操作独木舟的人来说很重要。它指出了一个在大多数情况下应该避免的危险，尽管我们没有提供一个比例的陈述。

­mend Zenith Aspirin and two who do not. Then in the sense specified, three out of five doctors recommend Zenith Aspirin. But this could be quite misleading. One danger is that there could be a shift in the meaning of the words used in the gener­alization, so that the buying public would think that the generalization is about a pro­portion of a much larger population of doctors. Then it would appear to give infor­mation that is significant, although it could well be absolutely false.Consider the problem of the meaning of the terms in this generalization: “Three out of five doctors recommend Zenith Aspirin.” What does that mean? Is it about a certain set of five doctors (method of selection unspecified), three of whom recommended Zenith Aspirin? If that is all that it means, then such a limited-to-the- data generalization is very easy to prove (and is uninformative, again illustrating the trade-off principle). To prove it, all we need to do is find three doctors who recommend Zenith Aspirin and two who do not. Then in the sense specified, three out of five doctors recommend Zenith Aspirin. But this could be quite misleading. One danger is that there could be a shift in the meaning of the words used in the generalization, so that the buying public would think that the generalization is about a proportion of a much larger population of doctors. Then it would appear to give information that is significant, although it could well be absolutely false.  
考虑这个概括中术语的含义问题：五位医生中有三位推荐Zenith阿司匹林。这是什么意思？它是关于一组特定的五位医生（选择方法未指定），其中有三位推荐Zenith阿司匹林吗？如果只是这个意思，那么这种基于数据的概括很容易证明（并且是无信息的，再次说明了权衡原则）。要证明它，我们只需要找到三位医生推荐Zenith阿司匹林，另外两位不推荐。那么在指定的意义上，五位医生中有三位推荐Zenith阿司匹林。但这可能会非常误导人。一个危险是概括中使用的词语的含义可能发生变化，以至于购买者会认为这个概括是关于一个更大的医生群体的比例。然后它似乎提供了重要的信息，尽管它很可能是完全错误的。

All these facts about the meaning of the words in a generalization serve as a warning to be very attentive to clarity in considering and applying generalizations (the C in FRISCO). Generalizations often appear to say more than they do. The less they say, the easier it is to justify them, but often, consequently, the less useful they are (a generalization!).  
所有这些关于概括中词语含义的事实都提醒我们要非常注意在考虑和应用概括时的清晰度（FRISCO中的C）。概括通常似乎比它们实际表达的更多。它们说得越少，就越容易为它们提供理由，但通常也因此而变得越不实用（一个概括！）

Inference to Generalizations  
归纳推理

­ment about more doctors than those in the data. But who are these other doctors?If the words “Three out of five doctors recommend Zenith Aspirin” are used to express an inferred generalization, then presumably the data consist of a set of doctors, three fifths of whom recommend Zenith Aspirin. The generalization makes a statement about more doctors than those in the data. But who are these other doctors?  
如果用“五位医生中有三位推荐Zenith阿司匹林”这句话来表达一种推断的概括，那么可以推测数据是由一组医生组成的，其中有三分之五的医生推荐Zenith阿司匹林。这种概括是对数据中的医生以外的更多医生做出的陈述。但是这些其他医生是谁呢？

­clusions about the second group to the third group. The extension assumes that the smaller group is typical of the larger group. We cannot automatically go from a con­clusion about the smaller group to a conclusion about the larger group, even if we could legitimately infer to the smaller group from the studied group.First, we need to distinguish among three groups: the group actuallv studied, a larger group (from which the sample, the group actually studied, has been drawn), and an even larger group, which includes the previous two groups and in which we are most likely to have the greatest interest. But ordinarily, the third group is too large to allow us to draw a random sample from it. So we want to extend our conclusions about the second group to the third group. The extension assumes that the smaller group is typical of the larger group. We cannot automatically go from a conclusion about the smaller group to a conclusion about the larger group, even if we could legitimately infer to the smaller group from the studied group.  
首先，我们需要区分三个群体：实际研究的群体，一个更大的群体（从中抽取了样本，即实际研究的群体），以及一个更大的群体，其中包括前两个群体，我们最有兴趣的是这个群体。但通常情况下，第三个群体太大，无法从中随机抽取样本。因此，我们希望将关于第二个群体的结论推广到第三个群体。这种推广假设较小的群体代表了较大的群体。即使我们可以合理地从研究群体推断出较小的群体，我们也不能自动地从对较小群体的结论得出对较大群体的结论。

­sentative of the larger group, even if the sample (the studied group) is representative of the sampled group.Accordingly, there are two inferences, one from the studied group to the group from which the studied sample was drawn, and one from this group to the even larger group. People often forget about the fact that they are making this second inference, thinking that it is automatic, but it is not. The sampled group might not be representative of the larger group, even if the sample (the studied group) is representative of the sampled group.   
因此，有两个推论，一个是从研究的群体到被研究样本抽取的群体，另一个是从这个群体到更大的群体。人们经常忽视他们正在进行第二个推论的事实，认为这是自动的，但事实并非如此。即使样本（被研究的群体）代表了被抽取的群体，被抽取的群体可能并不代表更大的群体。

­dom sampling and follow-up were done. But then someone might also conclude, “Three out of five doctors recommend Zenith Aspirin.” This seems to be about a dif­ferent and much larger population of doctors, possibly English-speaking North American doctors, perhaps even a larger group (all North American doctors? all doc­tors in the world?). The justification for extending the generalization would depend on the Urbana doctors' being typical of English-speaking North American doctors, or the even-larger group. I doubt this typicality, so would discourage this inference.For example, suppose that the doctors in a random sample of the doctors in Urbana, Illinois, are asked whether they recommend Zenith Aspirin, and that three fifths of this random sample reply affirmatively. Leaving aside for the moment some concerns about the meaning of the question, we might then justifiably conclude that three out of five doctors in Urbana recommend Zenith Aspirin. The doctors covered by this conclusion are all the doctors in Urbana, although only a random sample of these doctors were questioned. This first inference is legitimate if good jobs of random sampling and follow-up were done. But then someone might also conclude, “Three out of five doctors recommend Zenith Aspirin.” This seems to be about a different and much larger population of doctors, possibly English-speaking North American doctors, perhaps even a larger group (all North American doctors? all doctors in the world?). The justification for extending the generalization would depend on the Urbana doctors' being typical of English-speaking North American doctors, or the even-larger group. I doubt this typicality, so would discourage this inference.  
例如，假设在伊利诺伊州厄巴纳的医生中进行随机抽样，问他们是否推荐Zenith阿司匹林，而在这个随机抽样中，有三分之二的医生回答肯定。暂且不论问题的含义，我们可以合理地得出结论，厄巴纳的五分之三的医生推荐Zenith阿司匹林。这个结论涵盖了厄巴纳的所有医生，尽管只有其中的一个随机抽样被问到。如果进行了良好的随机抽样和后续跟踪工作，这个第一推论是合理的。但是，有人可能会得出另一个结论，即五分之三的医生推荐Zenith阿司匹林。这似乎涉及到一个不同且规模更大的医生群体，可能是讲英语的北美医生，甚至可能是一个更大的群体（所有北美医生？全球所有医生？）。推广这个概括的理由将取决于厄巴纳医生是否具有代表性，代表了讲英语的北美医生，或者甚至更大的群体。我对这种典型性表示怀疑，因此不鼓励这个推论。

­clusion is based on a scientifically determined sample of doctors. That way of putting it neglects the distinction between the group sampled and the group that the ultimate generalization appeared to be about and, consequently, neglects the inference step from one to the other. I have often seen this distinction and the associated inference swept under the rug, not only in advertising, where we might expect it to happen, but in many other areas But if I had not been so specific about the identities of the sampled group and the larger group, the inference might pass unnoticed. Suppose that I said that three out of five doctors recommend Zenith Aspirin, and added in a footnote that this conclusion is based on a scientifically determined sample of doctors. That way of putting it neglects the distinction between the group sampled and the group that the ultimate generalization appeared to be about and, consequently, neglects the inference step from one to the other. I have often seen this distinction and the associated inference swept under the rug, not only in advertising, where we might expect it to happen, but in many other areas as well.  
但是如果我没有对被抽样的群体和更大的群体的身份做出如此具体的说明，那么推论可能会被忽视。假设我说五位医生中有三位推荐Zenith阿司匹林，并在脚注中补充说这个结论是基于科学确定的医生样本。这种表述方式忽视了被抽样群体和最终概括所涉及的群体之间的区别，因此也忽视了从一个群体到另一个群体的推论步骤。我经常看到这种区别和相关推论被掩盖，不仅仅是在广告中，我们可能会预料到这种情况发生，而且在许多其他领域也是如此。

For example, in child psychology, we often find people talking about all children, basing their statements on a very restricted sample. They use terms such as the child or children that suggest that their statements apply to all (or almost all) children, when the evidence is about a sample of a limited population that is in many ways not typical of all children. An example is this statement by Jean Piaget, an influential Swiss psychologist: “We . . . describe the development of propositional logic, which the child at the concrete level (Stage II: from 7-8 to 11-12 years) cannot yet handle”[footnoteRef:21] (emphasis added). The problem of the meaning of some of the terms in this statement (propositional logic, 11-12, and handle) is severe as well.[footnoteRef:22] But the point here is to note the contrast between the universality of the statement and the size and nature of the group actually sampled: middle-class Swiss children. Please be warned that there is much more to this issue than is possible to indicate here, including the problem of inferring from the children actually studied even to middle-class Swiss children.  
例如，在儿童心理学中，我们经常发现人们谈论所有儿童，基于一个非常有限的样本来支持他们的陈述。他们使用诸如“孩子”或“儿童”之类的术语，暗示他们的陈述适用于所有（或几乎所有）儿童，而证据只是关于一个在许多方面都不典型的有限人口样本。一个例子是瑞士有影响力的心理学家让·皮亚杰的这个陈述：我们描述了命题逻辑的发展，而儿童在具体阶段（第二阶段：从7-8岁到11-12岁）尚不能处理[21]（强调添加）。这个陈述中一些术语的含义问题（命题逻辑、11-12岁和处理）也很严重[22]。但这里要注意的是陈述的普遍性与实际样本的规模和性质之间的对比：中产阶级的瑞士儿童。请注意，这个问题比这里所能指示的要复杂得多，包括从实际研究的儿童推断到中产阶级的瑞士儿童的问题。­chologist: “We [[20]](#footnote-20)­sis added). The problem of the meaning of some of the terms in this statement [[21]](#footnote-21)

This problem of breadth of coverage is a general problem in the meaning of generalizations that we develop ourselves, as well as those asserted by others. We must try to be aware of the extent to which the generalization makes a statement about things or people that were not investigated or studied. That is, we must be alert to the meaning of the general terms in a generalization. To what do they refer? An all-too-frequent occurrence is a statement maker’s acting as if the investigation justified reference to a larger group, when in fact the typicality of the smaller group is dubious. We shall return to the problems of sampling and typicality.  
覆盖范围的问题是我们自己发展的概括以及他人所断言的概括中的一个普遍问题。我们必须尽量意识到概括对未经调查或研究的事物或人所作的陈述程度。也就是说，我们必须警惕概括中的普遍术语的含义。它们指的是什么？一个过于频繁的情况是，陈述者表现得好像调查证明了对一个更大群体的参照，而实际上较小群体的典型性是可疑的。我们将回到抽样和典型性的问题。­

Another question of meaning in this case, postponed earlier, is the meaning of the phrase recommend Zenith Aspirin. What sort of evidence does it take to establish that a doctor recommends Zenith? Does it mean that the doctor recommends only Zenith Aspirin, or that the doctor recommends Zenith as well as other kinds of aspirin and some other pain relievers as well? Because it is in the interest of advertisers (and others) to get us to buy the products advertised (and to do other things), we must be duly cautious about the meaning of the words used by them.  
在这种情况下，另一个关于意义的问题，之前推迟了，是推荐Zenith Aspirin这个短语的意义。需要什么样的证据来证明医生推荐Zenith？这是否意味着医生只推荐Zenith Aspirin，还是医生推荐Zenith以及其他种类的阿司匹林和其他止痛药？因为广告商（和其他人）有兴趣让我们购买他们所宣传的产品（以及做其他事情），所以我们必须对他们使用的词语的意义保持谨慎。­

Summary  
摘要

Generalizations are either limited-to-the-data or inferred, and either universal or less- than-universal. Less-than-universal generalizations are either proportional or loosely numerical (using terms such as often, sometimes, and at least some). Proportional generalizations are vague (using terms such as usually and generally) or precise (stating probabilities or percentages). In general, the more informative a generalization, the more difficult it is to defend; and the less informative, the less susceptible to defeat by counterexamples (the trade-off principle).  
"概括要么是基于数据的，要么是推断的，要么是普遍的，要么是非普遍的。非普遍的概括要么是比例的，要么是宽泛的数值（使用诸如经常、有时和至少一些这样的术语）。比例概括是模糊的（使用诸如通常和一般这样的术语）或者精确的（陈述概率或百分比）。一般来说，概括越具有信息量，就越难以捍卫；而信息量越少，就越不容易被反例所推翻（权衡原则）。”­eralizations are vague (using terms such as

Inferred generalizations are sometimes the result of an inference from a sample to a population from which the sample was drawn, and are defended on the basis of the method of sampling (a topic to be discussed soon). Sometimes the generalization goes beyond the population from which the sample was drawn and is about an even larger population. The justification of the larger-population generalization depends on the extent to which the sampled populations is typical of the larger population. The leap from the sampled population to the broader population often slips by unnoticed, a danger.  
从样本推断到样本抽取的总体，推断的普遍性有时是推理的结果，并且以抽样方法为基础进行辩护（一个即将讨论的主题）。有时，普遍性超出了样本抽取的总体，并且适用于更大的总体。对更大总体的普遍性的证明取决于样本总体与更大总体的典型程度。从样本总体跳到更广泛的总体往往不被注意到，这是一个危险。­ticed, a danger.

The degree of satisfaction of the four best-explanation criteria is relevant to those generalizations that are best-explanation hypotheses. But in this chapter, we are focusing on support by representativeness.  
四个最佳解释标准的满意度与最佳解释假设相关。但在本章中，我们关注的是代表性支持。

­tory. To think that a run of one sort reduces the chances of getting another of that sort is to accept the gambler’s fallacy. To think that the chances are therebv increased is to accept the streak theory. Both are errors.Probabilities for honest items (such as dies and cards) do not change with history. To think that a run of one sort reduces the chances of getting another of that sort is to accept the gambler’s fallacy. To think that the chances are therebv increased is to accept the streak theory. Both are errors.  
诚实物品（如骰子和纸牌）的概率不会随着历史而改变。认为一种结果的连续出现会减少获得另一种结果的机会是接受赌徒谬误。认为机会因此而增加是接受连胜理论。这两种观点都是错误的。

Check-Up 10A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

10:1 Universal generalizations hold that every member of the class or group being considered has the characteristic in question.  
10:1通用的普遍概括认为，被考虑的类别或群体的每个成员都具有所讨论的特征。

10:2 A characteristic of proportional generalizations is that thev go beyond the data on which they are based.   
比例概括的特点是它们超越了它们所基于的数据。

**10:3 Although generalizations are usually relatively simple in structure, their meaning must frequently be carefully considered.  
10:3 虽然概括通常结构相对简单，但其含义经常需要仔细考虑。**

**10:4 The generalization in 10:3 (“Generalizations are usually relatively simple in structure”) is a less-than-universal generalization and is informative as it stands.  
10:4 10:3中的概括（概括通常结构相对简单）是一个非普遍性的概括，并且作为它本身是有信息量的。**­ple in structure”) is a less-than-universal generalization and is informa­tive as it stands.

**10:5 The following is a probability generalization: “The chances of getting heads in the toss of a coin are one half.”  
10:5 以下是一个概率概述：抛硬币得到正面的机会是一半。**

**10:6 According to the generalization in 10:5, one half of the tosses of the coin, in the long run, will turn out heads.  
根据10:5的概括，硬币的抛掷结果中，长期来看，有一半会是正面。**

**10:7 If the generalization in 10:5 is true and the last three tosses turned up tails, then the chances are better than even that the next one will turn up heads.  
如果10:5中的概括是正确的，并且最后三次投掷出现了反面，那么下一次出现正面的机会比五五开更大。**

**10:8 If the generalization in 10:5 is true and if the last three tosses turned up tails, then the chances are better than even that the next will turn up tails.  
如果10:5中的概括是正确的，并且最后三次抛掷都出现了反面，那么下一次出现反面的机会比正面更大。**

**10:9 It is legitimate to extend a generalization to a population larger than the population from which a random sample was drawn, as long as we are assured that the sample was indeed random.  
10:9 将一般化推广到比随机抽样的人群更大的人群是合理的，只要我们确信样本确实是随机的。**

Longer Answer  
更长的答案

**10:10 Consider the generalization “Societies always develop class systems, even when organized with the goal of being classless.” Assume that a class system is a system within a given society consisting of a prestige and power hierarchy (resulting in some identifiable classes’ being of higher status and power) and in which somehow there is considerable passage of the class status of parents to their offspring.  
10:10 考虑到一般化的社会，即使在旨在无阶级的目标下组织，社会总是会发展出阶级制度。假设阶级制度是指在一个给定社会中存在的一个由威望和权力构成的等级制度（导致某些可辨认的阶级具有更高的地位和权力），并且在其中父母的阶级地位在相当程度上会传给他们的后代。**

1. Cite examples and, if you can, counterexamples to this generalization.  
   引用例子，并且如果可以的话，对这个概括提供反例。
2. Revise the generalization if you feel that it needs revision in order to be true.  
   如果您觉得需要修改以使其成为真实，请修改这个概括。
3. Write a short defense of the generalization, as revised (if you revised it). Heed FRISCO.  
   写一篇简短的辩护文章，对于修订后的概括进行辩护（如果你进行了修订）。注意FRISCO。

**10:11 Find a generalization in a newspaper, magazine, research report, etc. Copy it and give the source.  
10:11 在报纸、杂志、研究报告等中找到一个概括，复制并提供来源。**

1. Tell what type of generalization it is (limited-to-the-data or inferential, universal or less-than-universal).  
   告诉是哪种概括（仅限于数据或推理，普遍的还是非普遍的）­ential, universal or less-than-universal).
2. Comment on its meamng. Is it misleading? State its meaning in other words than those in which it is written.  
   对其含义进行评论。它是否具有误导性？用不同的措辞陈述其含义。
3. Tell whether you think that the evidence supports the generaliza­tion. Explain why you think as you do. (Do not expect to do a perfect job here. Just do the best you can. But do not neglect such considerations as credibility of sources, and actual reports of the data on which the generalization is based.)

Sampling and Typicality

In 1936, the magazine Literary Digest surveyed public opinion in an attempt to predict who would win the United States presidential election: the republican, Alfred Landon, or the democrat, Franklin Roosevelt. Ten million ballots were sent out to find out how that sample of the voting population felt about the candidates. Over two million of these ballots were returned. On the basis of these returns, the Literary Digest concluded that more voters would vote for Landon than for Roosevelt (an inferred less-than-universal generalization). As it turned out, however, Franklin Roosevelt won 60 percent of the votes and was reelected. This error in prediction is a classic one in the history of sampling.  
判断证据是否支持概括。解释你的想法。 （不要期望在这里做得完美。只要尽力而为。但不要忽视来源的可信度以及基于概括的实际数据的报告。） 抽样和典型性 1936年，杂志《文学文摘》进行了一项调查，以预测谁将赢得美国总统选举：共和党人阿尔弗雷德·兰登还是民主党人富兰克林·罗斯福。发送了一千万张选票，以了解选民群体对候选人的看法。其中超过两百万张选票被退回。根据这些回复，文学文摘得出结论，更多的选民将投票给兰登而不是罗斯福（一种推断出的非普遍概括）。然而，事实证明，富兰克林·罗斯福赢得了60％的选票并连任。这种预测错误是抽样历史上的经典案例。­dict who would win the United States presidential election: the republican, Alfred Landon, or the democrat, Franklin Roosevelt. Ten million ballots were sent out to find out how that sample of the voting population felt about the candidates. Over two million of these ballots were returned. On the basis of these returns, the

­tative of the voters of the United States.At least part of the problem was that the people chosen to receive the mailing were selected from telephone books, lists of subscribers to the magazine, and lists of owners of automobiles, resulting in a systematic bias in favor of the well-to-do, who were more likely to vote republican. The sample selected for study was not representative of the voters of the United States.  
至少问题的一部分是，被选中接收邮件的人是从电话簿、杂志订阅者名单和汽车所有者名单中选择的，导致了对富裕阶层的系统性偏见，他们更有可能投票给共和党。研究所选样本并不代表美国选民。

­ally obtain a return of much less than half, always raising a question of bias. People who return survey forms are different from those who do not. The difference might make a difference in the outcome. This is not to say that one should automatically disregard results of surveys that depend on the people surveyed to return an answer. Rather, this is an important factor to consider. We should alwavs trv to ascertain the percent return in a survey and consider what difference there might be between those who returned an answer and those Furthermore, the fact that the prediction was based on a return of only slightly more than a fifth of the people solicited leaves room for more bias. Were voters for Landon or voters for Roosevelt more likely to return the ballots? What do you think? Opinion surveys that depend on the people surveyed to return their answers generally obtain a return of much less than half, always raising a question of bias. People who return survey forms are different from those who do not. The difference might make a difference in the outcome. This is not to say that one should automatically disregard results of surveys that depend on the people surveyed to return an answer. Rather, this is an important factor to consider. We should alwavs trv to ascertain the percent return in a survey and consider what difference there might be between those who returned an answer and those who did not.  
此外，预测是基于只有略多于五分之一受访者回复的事实，这可能存在更多的偏见。兰登的选民和罗斯福的选民更有可能回复选票吗？你认为呢？依赖受访者回复的意见调查通常只能获得远低于一半的回复率，这总是引发偏见的问题。回复调查表格的人与不回复的人是不同的。这种差异可能会对结果产生影响。这并不是说我们应该自动忽视依赖受访者回复答案的调查结果。相反，这是一个需要考虑的重要因素。我们应该始终努力确定调查的回复率，并考虑回答者与未回答者之间可能存在的差异。

Ways that survey makers can reduce the problem include providing a stamped self-addressed envelope, making it very easy to respond to the survev bv asking few questions (or only one), following up on a survey request with a barrage of further requests to comply, perhaps appealing to the conscience of those being surveyed, and actually interviewing each person personally. There are problems with each of these approaches, as you can imagine, and no solution is perfect.  
提供一张贴有邮票的自寄信封，通过提出少量问题（或仅一个问题）来使回答调查变得非常容易，跟进调查请求并连续发送进一步的请求以确保合规，或许可以呼吁被调查者的良知，并亲自对每个人进行面谈，这些都是调查制作者减少问题的方法。正如你所能想象的，每种方法都存在问题，没有完美的解决方案。

Random Sampling  
随机抽样

How can a sample be selected that is representative of the population from which it is selected? Securing a random sample of sufficient size is the standard ideal answer. To say that a sample is random is to sav that each member of the population had an equal chance of being selected. Securing a random sample requires that we have access to the entire population, so that each member has an equal chance of being included.  
如何选择一个代表所选人群的样本？获得足够规模的随机样本是标准的理想答案。说一个样本是随机的意味着人群中的每个成员被选中的机会是相等的。获得一个随机样本需要我们能够接触到整个人群，以便每个成员都有相等的被包括的机会。

­sis of a president of a university stated in a speech published in the student newspa­per. lhc thesis is, “Tuition and fees at this university arc reasonable.” Assume that there aιc 10,000 students. Suppose that it is too much trouble or too expensive toSuppose that we want to determine whether student opinion supports the thesis of a president of a university stated in a speech published in the student newspaper. lhc thesis is, “Tuition and fees at this university arc reasonable.” Assume that there aιc 10,000 students. Suppose that it is too much trouble or too expensive to query all 10,000 students in a way that will produce sincere answers, so we decide to select a random sample of about 1,000 students, ordinarily a sufficient number for a random sample. In order to give each an equal chance of being selected, we need to have a list of the entire student body. We could put all the names in a large drum, mix them well, and draw out 1,000 names, making sure that there were no mechanical problems, such as two names sticking together, or a name being caught in a crevice. To avoid such problems, we could write the names on 10,000 ping pong balls and mix them in a large sphere. It is not easy mechanically to give every name an equal chance of being selected, even if we have a complete list, but having the list is a necessary condition.  
假设我们想要确定学生的意见是否支持一位大学校长在学生报纸上发表的演讲中所陈述的论点。这个论点是，这所大学的学费和费用是合理的。假设有10,000名学生。假设查询所有10,000名学生以获得真诚回答的方式过于麻烦或昂贵，因此我们决定随机选择大约1,000名学生进行样本调查，通常这个数量足够作为一个随机样本。为了让每个学生被选择的机会相等，我们需要有一个完整的学生名单。我们可以把所有的名字放在一个大鼓里，充分搅拌后抽取1,000个名字，确保没有机械问题，比如两个名字粘在一起，或者一个名字被卡在缝隙中。为了避免这些问题，我们可以把这些名字写在10,000个乒乓球上，然后在一个大球体中混合它们。即使我们有一个完整的名单，要在机械上给每个名字一个相等的选择机会也不容易，但拥有名单是一个必要条件。­essary

A simpler way than using names written on ping pong balls or slips of paper would be to use a table of random numbers from a book of statisticians’ tables. Such tables consist of long lists of randomly selected digits, from 0 to 9. Here is a part of a table I have on my bookshelf: “23157548590183725993762497088695.” It goes on, and on, and on. We could go through the list of students and assign each student in order a digit from the table. For example, starting from the beginning of the series just presented, the first student gets a 2, the second a 3, the third a 1, the fourth a 5, etc. Then we could arbitrarily choose one digit by closing our eyes and touching down in the middle of a table with a pointer. Suppose the pointer points to a 5. Then we could include in our sample every student who had been assigned that particular digit. That is, we pick all students who had been assigned 5. That procedure would give us about 1,000 students selected at random from the 10,000.  
使用乒乓球上写的名字或纸条的方法比较简单，可以使用一本统计学家表的随机数字表来代替。这样的表由从0到9的随机选择数字的长列表组成。我书架上有一部分这样的表：23157548590183725993762497088695。它继续下去，一直下去。我们可以逐个遍历学生名单，并按顺序为每个学生分配表中的一个数字。例如，从刚刚呈现的系列的开头开始，第一个学生得到2，第二个学生得到3，第三个学生得到1，第四个学生得到5，依此类推。然后，我们可以任意选择一个数字，闭上眼睛，用指针触摸表中间。假设指针指向5。然后，我们可以将所有被分配了这个特定数字的学生包括在我们的样本中。也就是说，我们选择所有被分配了5的学生。这个过程将从10000名学生中随机选择约1000名学生。

Another way to use the table would be to number the students from one to 10,000 and, starting at some arbitrary point in a table of random numbers, select a series of 1,000 four-digit numbers, neglecting any duplicates. The students who have those numbers would be in the sample. Starting at the third digit of the sequence in the last paragraph, students with the following numbers would be included in the sample: 1,575, 4,859, 183 (neglecting a beginning zero), 7,259, 9,376, 2,497, 886, etc. (Even if there were only 8,000 students in the population, we could proceed this way, just ignoring all numbers over 8,000.) Can you suggest a number to assign to the 10,000th student, given the four-digit procedure?  
另一种使用表格的方法是给学生编号从一到10,000，并从随机数字表的某个任意点开始，选择一系列1,000个四位数，忽略任何重复的数字。拥有这些数字的学生将被纳入样本。从上一段落的序列的第三位数字开始，以下数字的学生将被纳入样本：1,575、4,859、183（忽略开头的零）、7,259、9,376、2,497、886等（即使人口中只有8,000名学生，我们也可以按照这种方式进行，只需忽略所有超过8,000的数字）。根据四位数的程序，你能建议一个分配给第10,000名学生的数字吗？

Random sampling does not guarantee representativeness, especially with a small selection. I took a random sample of eight people from a population of forty-eight people in a group composed of thirty-six males and twelve females. Of the eight people in the sample, three were females and five were males. In the sample, then, three- eighths were females, although in the population only one-fourth, or two-eighths, were females. A sample of eight people is a very small random sample if representativeness is important to us. On the other hand, a random sample of several thousand members is very likely to be representative. Of course, several thousand was impossible in my sample from forty-eight people, but with such a small population, sampling is often unnecessary anyway. Sampling is most useful when the population is so large that examination of every member is too difficult or expensive.  
随机抽样不能保证代表性，特别是在选择较小的情况下。我从一个由36名男性和12名女性组成的群体中的48人口中随机抽取了8个人的样本。在样本中，有3个女性和5个男性。因此，在样本中，三分之八是女性，而在总体中，只有四分之一，或者两分之八，是女性。如果代表性对我们很重要，那么8个人的样本是一个非常小的随机样本。另一方面，几千个成员的随机样本很可能是具有代表性的。当然，从48人中取几千个样本是不可能的，但在如此小的人口中，抽样通常是不必要的。当人口如此庞大以至于检查每个成员都太困难或昂贵时，抽样是最有用的。­­­

Even after selecting a random sample from 10,000 students, there would still be problems in determining the opinions of these selected students: Some might be out of town or ill, some might be reluctant to answer, and the questions we ask might be misleading to some. But the point here is that a random sample can be drawn from a population to which we have access. Giving each member of the population an equal chance of being selected is feasible.  
即使从10000名学生中随机选择一个样本，确定这些被选中学生的意见仍然存在问题：有些人可能不在城里或生病，有些人可能不愿回答，我们提出的问题可能对某些人具有误导性。但重点在于，我们可以从我们可以接触到的人群中抽取一个随机样本。让人群中的每个成员有平等的机会被选中是可行的。

The absolute size of the sample, rather than the percentage of the population selected, is of primary importance in sampling. If the Literary Digest had actually secured a random sample of only 1,000 of the voters in the entire United States and had determined how each one of these people was going to vote (not missing one), then it would very likely have come within a few percentage points of the actual vote. These facts (the importance of the absolute size rather than the relative size and the adequacy of a random sampling of 1,000 for most purposes) are facts about random sampling that surprise many people.  
样本的绝对大小，而不是选择的人口百分比，在抽样中至关重要。如果《文学文摘》实际上只获得了整个美国选民中的1,000个随机样本，并确定了每个人的选票（没有遗漏），那么它很可能会在实际选票中接近几个百分点。这些事实（绝对大小的重要性而不是相对大小以及对于大多数目的而言，1,000个随机样本的充分性）是关于随机抽样的事实，这些事实让很多人感到惊讶。

Because it is often extremely difficult to secure a random sample of even 1,000 and to examine every member, there would still have been good reason for concern. Securing a random sample was practically impossible for the Literary Digest because of the problems of developing accurate lists and of securing valid information from every person selected for examination. The expense and difficulty of identifying and securing valid information from pure random samples bring people to seek substitute methods.  
因为即使是获得一个随机样本的1000个成员并检查每个成员都是非常困难的，所以仍然有充分的理由担心。由于开发准确的名单和从每个被选中的人那里获得有效信息的问题，对于Literary Digest来说，获得一个随机样本几乎是不可能的。识别和获得纯随机样本的有效信息的费用和困难使人们寻求替代方法。

Systematic Sampling  
系统抽样

­atic sampling. Instead of using a random selection process, a systematic process is used, such as selecting every tenth student on our list of 10,000 students, starting with an arbitrarily picked one of the first ten. The mechanics of this procedure are easier, leav­ing the selection process less susceptible to error (an advantage), but there is the pos­sibility of systematic variation in the way that students are listed, a variation that might make the sample unrepresentative. I do not see much chance of this sort of thing in An alternative that makes the process of selecting the sample slightly easier is systematic sampling. Instead of using a random selection process, a systematic process is used, such as selecting every tenth student on our list of 10,000 students, starting with an arbitrarily picked one of the first ten. The mechanics of this procedure are easier, leaving the selection process less susceptible to error (an advantage), but there is the possibility of systematic variation in the way that students are listed, a variation that might make the sample unrepresentative. I do not see much chance of this sort of thing in the ways that I imagine students would be listed, so I would settle for a systematic sample in this case. But a systematic sampling procedure would not have helped the people from the Literary Digest. They still would have needed complete lists and would have needed to secure returns from those sampled in a way that did not bias the results. Furthermore, systematic sampling would not have increased the efficiency of sampling. They would have had to do just about as much work one wav or the other.  
使选择样本过程稍微简化的另一种选择是系统抽样。不使用随机选择过程，而是使用系统性的过程，例如从我们的10000名学生名单中选择每十个学生，从第十个学生开始任意选择的一个。这个过程的机制更简单，使选择过程不容易出错（一个优势），但是学生名单的排列可能存在系统性变化，这可能导致样本不具有代表性。在我想象学生名单的方式中，我没有看到这种情况的机会，所以在这种情况下，我会选择系统抽样。但是，系统抽样程序对于《文摘》的人们没有帮助。他们仍然需要完整的名单，并且需要以不偏倚结果的方式从被抽样者那里获得回报。此外，系统抽样不会增加抽样的效率。无论如何，他们都必须做大约同样多的工作。­ple in this case. But a systematic sampling procedure would not have helped the peo­ple from the

Stratified Random Sampling  
分层随机抽样

Because of the difficulties involved in securing valid results from each member of a selected sample, stratified random sampling is sometimes used. Stratified random sampling consists of breaking up the population into groups, and then randomly sampling each group. It enables us to reduce—to some extent—the size of the group selected without losing accuracy, if we stratify on variables that are correlated with the characteristic we are estimating. Consider again the survev of student opinion about the president’s thesis about tuition and fees.  
由于在从选定样本的每个成员中获得有效结果存在困难，因此有时会使用分层随机抽样。分层随机抽样包括将总体分成组，并随机抽取每个组。如果我们对与我们正在估计的特征相关的变量进行分层，它可以在一定程度上减小所选组的大小而不会失去准确性。再次考虑对总统关于学费和费用的论文的学生意见调查。­pling each group. It enables us to reduce—to some extent—the size of the group selected without losing accuracy, if we stratify on variables that are correlated with the characteristic we are estimating. Consider again the survev of student opinion about

We might expect the freshmen to view the thesis somewhat differently from the seniors, and perhaps the juniors and sophomores will differ from each other as well as from the others. We want to be sure that each group is fairly represented in the final sample. Males and females might differ from each other also, as might people from different departments and ethnic backgrounds. In order to explain this idea, I shall neglect departments and ethnic backgrounds, but they should certainly be considered in a sampling of this sort. The goal is to use the groupings that make the most difference. For present purposes, I shall assume that gender and class level make the most difference.  
我们可能期望新生对论文的看法与高年级学生有所不同，而且大二和大三学生之间以及与其他人也可能有所不同。我们希望确保每个群体在最终样本中得到公平代表。男性和女性之间也可能有所不同，不同部门和不同族裔背景的人也可能有所不同。为了解释这个观点，我将忽略部门和族裔背景，但在这种抽样中肯定应该考虑它们。目标是使用产生最大差异的分组。为了目前的目的，我将假设性别和班级水平产生最大差异。­sidered in a sampling of this sort. The goal is to use the groupings that make the most difference. For present purposes, I shall assume that gender and class level make the most difference.

­bers of females and males, and equal numbers from each class in the total sample.Suppose that there are 2,500 in each class and that half of each class is female and half male. Then there would be eight groups of 1,250 members each. See Table 10.1. We would then take a random sample from each group, ensuring equal numbers of females and males, and equal numbers from each class in the total sample.  
假设每个班级有2,500人，每个班级的一半是女性，一半是男性。那么将会有八个由1,250名成员组成的小组。请参见表格10.1。然后我们将从每个小组中随机抽取样本，确保女性和男性的数量相等，并且每个班级在总样本中的数量也相等。

If there is a high relationship between class or gender and opinion about the president’s thesis, we can manage with fewer people sampled without losing validity of results. In this case, we might be able to reduce our sample size by 30 percent, maintaining the same degree of accuracy. Stratified sampling down to about 88 people per group (about 700 in all) to study carefully would actually be an improvement over studying 125 per group (1,000 in all) less carefully. Their remarks could then be given more consideration, missing returns could be pursued more effectively, and interviews would be more feasible. Viewed differently, the cost of the interviewing without increasing the care of the work would be less with stratified sampling, not a full 30 percent less, but significantly less, if the interviewing is expensive. In any case, however, we would need a complete list of all the members of the population to make sure that everyone in each subgroup of 1,250 had an equal chance of being chosen.  
如果班级或性别与对总统论文的观点存在密切关系，我们可以通过减少样本人数而不失去结果的有效性来进行管理。在这种情况下，我们可能能够将样本量减少30％，同时保持相同的准确度。将分层抽样降至每组约88人（总共约700人）进行仔细研究实际上会比每组125人（总共1000人）进行较不仔细的研究更好。这样，他们的评论可以得到更多考虑，可以更有效地追踪缺失的回复，并且采访将更加可行。从不同的角度来看，如果采访费用昂贵，那么采用分层抽样的情况下，采访的成本会较少，虽然不会减少30％，但会显著减少。然而，在任何情况下，我们都需要完整的人口名单，以确保每个1250人的子群体中的每个人都有平等的机会被选择。­ple per group (about 700 in all) to study carefully would actually be an improvement over studying 125 per group (1,000 in all) less carefully. Their remarks could then be given more consideration, missing returns could be pursued more effectively, and interviews would be more feasible. Viewed differently, the cost of the interviewing without increasing the care of the work would be less with stratified sampling, not a full 30 percent less,

Cluster Sampling  
群集抽样

In its simplest form, clutter sampling calls for selecting a sample of groups (or clusters) from the total population being studied, and then sampling within the groups that are selected, but only from those groups. In effect, the Literary Digest people did cluster sampling, but they apparently did not sufficiendy consider whether the groups they selected were representative of the total population. In fact, it is clear that these groups were not representative because they included only people with a telephone, or an automobile, or a subscription to Literary Digest.  
在其最简单的形式中，杂乱抽样要求从正在研究的总体人口中选择一组（或簇），然后在所选择的组内进行抽样，但只能从这些组中进行抽样。实际上，文学文摘的人们进行了簇抽样，但他们显然没有充分考虑所选择的组是否代表了整个人口。事实上，很明显这些组并不具有代表性，因为它们只包括那些拥有电话、汽车或文学文摘订阅的人。­ters) ­

One advantage of cluster sampling is that we are not required to list the entire population being sampled. In its simplest form, we are required to list the populations of the clusters that have been selected, so that we can do a pure random sample (or stratified random sample) within those groups.  
"群集抽样的一个优点是我们不需要列出整个被抽样的人口。在其最简单的形式中，我们需要列出已选择的群集的人口，以便我们可以在这些群体中进行纯随机抽样（或分层随机抽样）。”­­ple (or stratified random sample) within those groups.

|  |  |  |  |
| --- | --- | --- | --- |
| **TABLE 10.1** | **Eight Cells from which to Draw a Stratified Random Sample** | | |
| *Class* | *Women* | *Gender* | *Men* |
| Freshman | **X** |  | **X** |
| Sophomore | **X** |  | **X** |
| Junior | **X** |  | **X** |
| Senior | **X** |  | **X** |

*Note: An “x” indicates a cell from which to take a random sample in order to secure a stratified random sample, stratified according to gender and class. Each “x” represents 1,250 people.   
注意：x表示从中随机抽取一个样本的单元，以便获得按性别和班级分层的随机样本。每个x代表1250人。*

­ance until after the fact, but pollsters do have techniques that they feel give them rea­sonable assurance that they can identify representative clusters throughout a voting area, clusters that can then be studied intensively.The trick is to secure a set of clusters that represent the total population. The election pollster’s dream is a small town that is representative of the entire state, province, or country of which it is a part. Then a single cluster (the town) would be enough, and all we would have to do is to study it intensively. This intensive study might itself consist of selecting a set of representative subclusters, perhaps city blocks, and doing intensive study within the selected blocks. Ultimately, a random sample, or complete enumeration, would be made, but only then would it be necessary to do the onerous task of completely listing and locating people, even the reluctant ones. Unfortunately, the pollster’s dream town cannot be identified with complete assurance until after the fact, but pollsters do have techniques that they feel give them reasonable assurance that they can identify representative clusters throughout a voting area, clusters that can then be studied intensively.  
诀窍是确保一组代表总人口的群集。选举民意调查员的梦想是一个代表整个州、省或国家的小镇。然后一个单独的群集（即该镇）就足够了，我们只需要对其进行深入研究。这种深入研究可能包括选择一组代表性的子群集，例如城市街区，并在选定的街区内进行深入研究。最终，将进行随机抽样或完全列举，但只有在此之后才有必要完成繁重的任务，即完全列出和定位人员，甚至是不情愿的人员。不幸的是，民意调查员梦想中的小镇在事后才能被完全确认，但民意调查员确实有一些技术，他们认为这些技术能够给他们合理的保证，即他们可以在整个投票区域内确定代表性的群集，并对其进行深入研究。

A cluster sampling of the 10,000 students might mark out a set of dwelling areas or units, list these units, and randomly select one third of the units (or clusters), which would each then be studied by random sampling within the clusters. In order to attain the same accuracy of sampling, one would ultimately need to draw a sample of more than 1,000 students, but the larger number would be more geographically concentrated and thus easier to locate. Furthermore, one would not need to obtain lists of the members of the units not sampled. For roughly the same precision of estimation, then, one might actually have less trouble, depending on how much more trouble it is to track down people as geographically separate as those in a pure random sample. Incidentally, if the sampled units are not roughly equal in size, then the results for the units must somehow be weighted in accord with the size of the unit.  
对于这10,000名学生的集群抽样，可能会确定一组居住区或单位，列出这些单位，并随机选择其中三分之一的单位（或集群），然后在这些集群内进行随机抽样研究。为了获得相同的抽样准确性，最终需要抽取超过1,000名学生的样本，但更大的样本数量将更加地地理集中，因此更容易定位。此外，不需要获取未被抽样单位成员的名单。因此，根据地理位置分离的纯随机样本中的人们追踪起来有多困难，实际上可能会更容易获得大致相同的估计精度。顺便说一句，如果被抽样的单位大小不相等，那么必须根据单位的大小对结果进行加权处理。­mation, then, one might actually have less trouble, depending on how much more trouble it is to track down people as geographically separate as those in a pure ran­dom sample. Incidentally, if the sampled units are not roughly equal in size, then the results for the units must somehow be weighted in accord with the size of the unit.

A simpler but less accurate alternative: If there is some class hour when almost all students are in class, then a randomly selected sample of classes (clusters) can be drawn from classes meeting at that hour, and each selected class examined, either by random selection within the selected classes or by securing the opinions of all the students in the selected classes. It might actually be easier to secure the opinions of all the students within a class, given that the class and the teacher have to be interrupted anyway, if only a simple question is asked. If all the students w ithin selected classes are to be queried, one might pick at random about one-sixth of the classes (or clusters) for study for roughly comparable accuracy, though more than 1,000 students would be examined. With a planned random sampling of one-third of the students in the selected classes, we might select one-third of the classes at random for comparable accuracy.  
一个更简单但不太准确的选择：如果有某个上课时间几乎所有学生都在上课，那么可以从那个时间段上课的班级中随机选择一部分班级（簇），然后检查每个被选择的班级，可以通过在被选择的班级内进行随机选择，或者通过获取所有被选择班级中学生的意见来进行。实际上，如果只问一个简单的问题，获取所有学生在班级内的意见可能更容易，因为班级和教师必须被打断。如果要查询所有被选择班级内的所有学生，可以随机选择大约六分之一的班级（或簇）进行研究，以获得大致相当的准确性，尽管会检查超过1,000名学生。通过计划好的随机抽样，选择被选择班级中三分之一的学生，我们可以随机选择三分之一的班级以获得相当的准确性。­dents in the selected classes. It might actually be easier to secure the opinions of all ­ters) for study for roughly comparable accuracy, though more than 1,000 students would be examined. With a planned random sampling of one-third of the students in the selected classes, we might select one-third of the classes at random for compara­ble accuracy.

The numbers required here are vague—with only rough approximations— because of a variety of technical factors in determining the accuracv of estimation. Consult a text on sampling for more details. But from this account, vou should now have a fairly good idea of the broad outlines of the process and the type of problems involved.  
这里所需的数字是模糊的，只有粗略的近似值，因为在确定估计的准确性时涉及到各种技术因素。有关更多详细信息，请参阅有关抽样的文本。但从这个描述中，您现在应该对该过程的大致轮廓和涉及的问题类型有一个相当好的了解。

A Danger in Sampling,  
抽样中的危险

and the Case-Study Alternative  
以及案例研究替代方案

­entific way to estimate a characteristic without examining the whole population, thereAlthough random sampling and its variations seem to some people to be the only scientific way to estimate a characteristic without examining the whole population, there are those who disagree. The basis for the disagreement lies in the fact that examination of a large number of people often results in a superficial examination of each. Even though random sampling can reduce the number needed to somewhere between 100 and 2,000, depending on the accuracy desired, that still requires a large number of people, if the characteristic being estimated is not easily identified or measured. Eye color is easily enough determined for large numbers of people. Prospective voting intentions are less easily determined because people might be reluctant to tell the truth to someone they do not know. They might fear ridicule or rejection. Furthermore, they might not have thought about the matter enough at the time of the query, and make a snap judgment that would later be reversed.  
尽管随机抽样及其变种在某些人看来是在不检查整个人口的情况下估计特征的唯一科学方法，但也有人持不同意见。这种分歧的基础在于大量人员的检查往往导致对每个人的肤浅检查。即使随机抽样可以将所需人数减少到100至2,000之间，具体取决于所需的准确度，但如果所估计的特征不容易确定或测量，仍然需要大量的人员。眼睛颜色可以很容易地确定大量人员的情况。而预期的投票意向则不容易确定，因为人们可能不愿意向陌生人说出真相。他们可能害怕被嘲笑或拒绝。此外，他们可能在查询时没有充分考虑此事，并做出后来会被改变的草率判断。­tion of a large number of people often results in a superficial examination of each. Even though random sampling can reduce the number needed to somewhere between 100 and 2,000, depending on the accuracy desired, that still requires a large number of people, if the characteristic being estimated is not easily identified or mea­sured. Eye color is easily enough determined for large numbers of people. Prospective voting intentions are less easily determined because people might be reluctant to tell the truth to someone they do not know. They might fear ridicule or rejection. Furthermore, they might not have thought about the matter enough at the time of the query, and make a snap judgment that would later be reversed.

­confidence are much more difficult to determine. Even one person’s opinion about the president’s thesis in her speech is not easy to determine because such opinions are likely to be very complicated and to consist of varying shades of agreement and dis­agreement. The simplicity of the questions required for surveys of characteristics can result in distortion of the characteristics.Characteristics such as fluency, numeracy, critical thinking ability, and selfconfidence are much more difficult to determine. Even one person’s opinion about the president’s thesis in her speech is not easy to determine because such opinions are likely to be very complicated and to consist of varying shades of agreement and disagreement. The simplicity of the questions required for surveys of characteristics can result in distortion of the characteristics.  
流利、计算能力、批判性思维能力和自信等特征更难确定。即使一个人对总统演讲中的论文持有意见，也不容易确定，因为这样的意见很可能非常复杂，包含各种不同程度的赞同和反对。对特征进行调查所需的问题的简单性可能导致特征的扭曲。

­ation thereof. A case study calls for intensive, extended, and thoughtful observation and interpretation of one, or a few, cases. In-depth interviewing of a few of the 10,000 students, selected to make sure that they are different from each other, would be an example. Each student interviewed would be asked for reasons, descriptions of the background situation, opinions of other students, descriptions of discussions with other students, etc. The primary rule for the investigators is to keep their eyes and ears open in sensitive, careful, and creative ways. This approach enables the investi­gators to secure a much better picture of the entire situation and to better analyze what students really think about a president’s thesis, so its proponents argue.An alternative that is often suggested is the case-study approach, or some variation thereof. A case study calls for intensive, extended, and thoughtful observation and interpretation of one, or a few, cases. In-depth interviewing of a few of the 10,000 students, selected to make sure that they are different from each other, would be an example. Each student interviewed would be asked for reasons, descriptions of the background situation, opinions of other students, descriptions of discussions with other students, etc. The primary rule for the investigators is to keep their eyes and ears open in sensitive, careful, and creative ways. This approach enables the investigators to secure a much better picture of the entire situation and to better analyze what students really think about a president’s thesis, so its proponents argue.  
常常被建议的另一种方法是案例研究法，或者其变体之一。案例研究要求对一个或几个案例进行深入、广泛和深思熟虑的观察和解释。对一部分从10,000名学生中挑选出来的学生进行深入访谈，以确保他们彼此之间的差异，就是一个例子。每个被访问的学生都会被问及原因、背景情况的描述、对其他学生的意见、与其他学生的讨论描述等等。调查人员的主要规则是以敏感、仔细和有创造力的方式保持眼睛和耳朵敞开。这种方法使调查人员能够更好地了解整个情况，并更好地分析学生对总统论文的真实想法，这是其支持者的论点。

Difficulties with case studies, according to their critics, are that generalization from case studies is not easy (or not possible), and that the reporter often puts his or her own subjective interpretation on the situation. The relative value of case studies is a controversial issue.  
根据批评者的观点，案例研究存在的困难在于很难（或不可能）从案例研究中进行概括，并且记者经常对情况进行主观解释。案例研究的相对价值是一个有争议的问题。

Inferring to a Broader Population  
推断到更广泛的人群

­ulation of Urbana doctors, even though the random sample is a representative sample of Urbana doctors. And you saw the result of inferring to the United States popula­tion of voters in 1936 from a sample drawn from people with a telephone, automo­bile, or subscription to the It is tempting to draw a conclusion about a broader population based on a sampling from a population that is contained within that broader population. For example, we might be tempted to draw a conclusion about all university students in the country, based on a random sample of the opinions of the students in one particular university. You saw earlier the danger in inferring to all doctors from a random sample of a population of Urbana doctors, even though the random sample is a representative sample of Urbana doctors. And you saw the result of inferring to the United States population of voters in 1936 from a sample drawn from people with a telephone, automobile, or subscription to the Literary Digest. But such inferences are not always wrong. It depends on whether the sampled population is typical of the broader population.  
基于从一个更广泛的人群中抽样得出的结论，很容易对更广泛的人群得出结论。例如，我们可能会倾向于根据对一个特定大学学生的意见的随机抽样，得出关于全国所有大学生的结论。你之前看到了从厄巴纳医生的随机样本推断所有医生的危险，尽管随机样本是厄巴纳医生的代表性样本。你也看到了从拥有电话、汽车或订阅文学文摘的人群中抽取样本，推断出1936年美国选民人口的结果。但这样的推断并不总是错误的。这取决于抽样人群是否代表更广泛的人群。

In agricultural research, where the techniques of sampling are used extensively, inferences to broader populations are regularly made. For example, a study based on a sample of a type of wheat this year is generalized to apply to the same type of wheat next year. We could not have sampled next year’s wheat because it did not exist when the sampling was done. But on the assumption that this year’s wheat of the given type is typical of wheat of that type (an assumption that is defended by examination of its characteristics), we are ready to extend the generalization beyond the population from which a random sample was drawn.  
在农业研究中，采样技术被广泛应用，经常对更广泛的人群进行推断。例如，基于今年某一类型小麦的样本的研究被推广应用到明年相同类型的小麦。由于采样时明年的小麦还不存在，所以我们无法对其进行采样。但是在假设今年给定类型的小麦代表了该类型小麦的典型特征（这一假设通过对其特征的检查得到证明），我们愿意将这种概括扩展到从中进行随机抽样的人群之外。

­Unfortunately, the rules for judging typicality do not have the clarity and precision of the rules for random sampling. You must keep your eyes and ears open and be well-informed. Because of what we know about wealth and voting habits, we know that the Literary Digest people had no right to generalize from the populations from which they sampled to the population of the United States. On the other hand, because of the regularity of characteristics of species of plants, we feel comfortable inferring to a generalization that is about more than the wheat from which we drew a random sample.  
不幸的是，对于典型性判断的规则并没有随机抽样规则的明确和精确。你必须保持眼睛和耳朵敏锐，并且要了解情况。由于我们对财富和投票习惯的了解，我们知道《文摘》的人们没有权利从他们抽样的人群推广到美国的整个人口。另一方面，由于植物物种特征的规律性，我们可以放心地推断出一个关于我们随机抽样的小麦之外的普遍性。­eralization that is about more than the wheat from which we drew a random sample.

­vades the population if there is no other plausible explanation of the agreement among the results and if we responsibly have searched for one. Thus, a judgment of typicality can be buttressed by the best-explanation approach to reasoning.But there is more to keeping your eyes and ears open and being well-informed. The best-explanation reasoning pattern can be applied here. If we make a number of studies of wheat, voting preference, or opinions about the college president’s thesis, even though these are not of randomly selected clusters of the population and they respectively turn out about the same, then we might justifiably infer that the trait pervades the population if there is no other plausible explanation of the agreement among the results and if we responsibly have searched for one. Thus, a judgment of typicality can be buttressed by the best-explanation approach to reasoning.  
但是保持眼睛和耳朵敏锐并且了解情况还有更多。最佳解释推理模式可以应用在这里。如果我们对小麦、投票偏好或者对大学校长论文的意见进行了多项研究，即使这些研究对象不是人口的随机选取群体，并且它们的结果大致相同，那么如果没有其他合理的解释来解释这些结果的一致性，并且我们已经负责任地寻找了其他解释，那么我们可以合理地推断这种特征在整个人口中普遍存在。因此，对典型性的判断可以通过最佳解释的推理方法得到支持。

Summary  
摘要

­taining the group is to have the group be a random sample of the population. A One standard way to justify an inference from a group to a broader population containing the group is to have the group be a random sample of the population. A random sample is a sample drawn in such a manner that each member of the population has an equal chance of being selected for the group. For the estimate to be accurate, the sample must be of fairly good size, somewhere between 100 and 2,000 depending on the confidence one seeks to have in the accuracv of the estimate. In securing this confidence, the size of the sample is much more important than the size of the population. A random sample of 1,000 from a population of 10,000 justifies not much more confidence in accuracy than a random sample ofl,000 from a population of 200 million, even though the proportions selected are verv different (1 in 10 versus 1 in 200,000).  
从一个群体推断到包含该群体的更广泛人群的一种标准方法是使该群体成为人口的随机样本。随机样本是以每个人口成员被选入该群体的等概率方式抽取的样本。为了使估计值准确，样本必须具有相当大的规模，大约在100到2,000之间，具体取决于对估计值准确性所需的置信水平。在确保这种置信水平时，样本的大小比人口的大小更重要。从一个拥有10,000人口的人群中随机抽取1,000个样本，与从拥有2亿人口的人群中随机抽取1,000个样本相比，对准确性的置信度并没有太大差异，尽管所选比例非常不同（10分之1与20万分之1）。*­dom sample*­ing on the confidence one seeks to have in the accuracv of the estimate. In securing ­sus 1 in 200,000).

­centage return from the sample that is selected (leaving it open that the returns do not represent the population), inability to make the complete list required for ran­domly selecting the sample, difficulty in locating and securing returns from the ones selected, misinterpretation of questions and refusal to answer them truthfully, and the oversimplification that is sometimes required in order to secure countable answers.Problems with studies using random sampling can include having a low percentage return from the sample that is selected (leaving it open that the returns do not represent the population), inability to make the complete list required for randomly selecting the sample, difficulty in locating and securing returns from the ones selected, misinterpretation of questions and refusal to answer them truthfully, and the oversimplification that is sometimes required in order to secure countable answers.  
使用随机抽样进行研究可能存在的问题包括：从所选样本中返回的比例较低（导致返回结果不能代表总体），无法制作所需的完整列表以进行随机抽样，难以找到和确保从所选样本中获得返回结果，对问题的误解和拒绝真实回答，以及有时为了获得可计算的答案而需要过度简化。

Alternatives to pure random sampling include systematic sampling, stratified random sampling, cluster sampling with random sampling within the clusters, and variations and combinations of these. All require a sample of good size. The stratified random sample can be somewhat smaller than a pure random sample for the same degree of confidence in accuracy if the variables of stratification arc well-correlated with the characteristic being investigated. The cluster sample approach generally requires a larger-sized sample than the pure random approach, but does not require listing of all members of the broader population, and often facilitates access to the sample because the members are usually grouped together geographically.  
纯随机抽样的替代方法包括系统抽样、分层随机抽样、集群抽样以及这些方法的变体和组合。所有这些方法都需要一个足够大的样本。如果分层变量与所研究的特征具有很好的相关性，那么分层随机抽样可以比纯随机抽样稍微小一些，但具有相同的置信度和准确性。集群抽样方法通常需要比纯随机抽样更大的样本，但不需要列出更广泛人口的所有成员，并且通常可以更容易地访问样本，因为成员通常在地理上分组在一起。

There is much more to say about sampling than has been said here, much of it being fairly technical. For more details, I recommend a standard text on sampling.  
关于抽样还有很多要说的，远远超过了这里所说的，其中很多都是相当技术性的。如果需要更多细节，我建议参考一本关于抽样的标准教材。

­ommend as an alternative the use of intensive case-study techniques, which they feel give more of the full flavor of a situation. On the other hand, random sampling and allied methods, their proponents often maintain, are the only scientific way to study a population without studying every member.Because of the problems with random sampling and its allies, some people recommend as an alternative the use of intensive case-study techniques, which they feel give more of the full flavor of a situation. On the other hand, random sampling and allied methods, their proponents often maintain, are the only scientific way to study a population without studying every member.  
由于随机抽样及其相关方法存在问题，一些人建议使用密集案例研究技术作为替代，他们认为这种方法更能全面了解情况。另一方面，支持随机抽样及其相关方法的人常常认为，这是研究人口而不必研究每个成员的唯一科学方法。

In any case, inferences that go beyond a population sampled or studied depend on the typicality of that population. Being well-informed, keeping one’s eyes and ears open, being sensitive, and using best-explanation reasoning techniques are the keys to determining typicality.  
无论如何，超出所抽样或研究的人口的推论都取决于该人口的典型性。保持消息灵通，保持警觉，敏感并使用最佳解释推理技巧是确定典型性的关键。

Check-Up JOB  
体检工作

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**10:12 A sample in which the person selecting the sample did not deliberately bias the selection is a random sample.  
10:12 选择样本的人没有故意偏向选择的样本是一个随机样本。**

**10:13 A pure random sample is necessarily representative.  
10:13 一个纯随机样本必然具有代表性。**

10:14 A pure random sample with a size of 2,000 drawn from a population of 100 million would for most purposes provide an estimate in which we could have sufficient confidence.  
10:14 从1亿人口中抽取的2000个纯随机样本，对于大多数目的来说，我们可以对其估计结果有足够的信心。

**10:15 A sample produced by drawing a random sample of groups and then drawing a random sample of individuals within the selected groups is called a systematic sample.  
10:15 通过随机抽取一组样本，然后在所选组中随机抽取个体而产生的样本称为系统抽样。**

**10:16 A case-study approach is thought by its supporters to be superior to a random-sampling approach in part because it does not force an oversimplification on complex and deep social phenomena.  
10:16 以案例研究为主要方法被其支持者认为比随机抽样方法更优越，部分原因是因为它不会对复杂而深入的社会现象进行过度简化。**­simplification on complex and deep social phenomena.

**10:17 One difficulty with a pure random sample of a size greater than 1,000 is that it is likely to be unrepresentative of the population.  
10:17 一个纯随机样本的困难在于，样本大小超过1,000时，很可能不具有代表性。**

­tion from which a random sample has been drawn, even though the larger population includes the population that has been sampled.10:18 There is no basis for inferring to a larger population than the population from which a random sample has been drawn, even though the larger population includes the population that has been sampled.  
10:18 无法推断出比随机抽样的人口更大的人口，即使更大的人口包括已被抽样的人口。

10:19 A stratified random sample can justify a smaller sample, if the variables of stratification are related to the variable being studied.  
10:19 分层随机抽样可以证明一个较小的样本，如果分层变量与所研究的变量相关。

Medium Answer  
中等答案

10:20 A tennis ball machine produces 2,000 tennis balls per hour. In order to check on the quality of the production, the inspectors systematically select 500 tennis balls (every fourth one) from the first hour of an eight-hour production run and the same number from the last hour of the production run, securing 1,000 tennis balls altogether. Each of the 1,000 balls is given the bounce and squeeze tests, and is visually inspected for apparent defects. The thinking is that if the production is all right at the beginning and end of a run, it is no doubt all right in the middle.  
10:20 网球机每小时生产2,000个网球。为了检查生产质量，检查员系统地从8小时的生产过程中选择500个网球（每隔4个）来自第一个小时和最后一个小时，并共计获得1,000个网球。每个1,000个网球都要进行弹跳和挤压测试，并进行目测检查以寻找明显的缺陷。这样做的想法是，如果生产在开始和结束时都正常，那么中间部分肯定也是正常的。

**a. What do you think of these inspection procedures, and why? b. What would you do, and why?  
a. 你对这些检查程序有什么看法，为什么？ b. 你会怎么做，为什么？**

**10:21 The school board of a large city contaihing 100 elementary schools wants to secure an estimate of the number of third-grade students who understand and are able to use contraposition and avoid conversion in everyday situations. An interview-type test has been devised that takes about thirty minutes of a student’s time, but the number of students is too large for the test to be given to every student. Assume that there are four classes of about 25 third-graders in each of the 100 schools, making 10,000 third-graders altogether. Tell how you would draw a sample of about 1,000 third-graders for testing, and explain why you make the choices you do. Because you do not know all the details about this school system, you will need to make some assumptions about the situation.  
10:21 一个包含100所小学的大城市的学校董事会希望获得一个关于能够理解并能够在日常情况中使用对偶和避免转换的三年级学生数量的估计。已经设计了一种面试类型的测试，需要学生花费大约30分钟的时间，但是学生人数太多，无法对每个学生进行测试。假设每所学校有4个班级，每个班级大约有25个三年级学生，总共有10,000个三年级学生。请说明您将如何抽取大约1,000名三年级学生进行测试，并解释您为什么做出这些选择。由于您不了解这个学校系统的所有细节，您需要对情况做出一些假设。**­sion in everyday situations. An interview-type test has been devised that takes about thirty minutes of a student’s time, but the number of students is too large for the test to be given to every student. Assume that there are four classes of about 25 third-graders in each of the 100 ­tions about the situation.

**10:22 Find a report of a sample-based survey that tells the size of the population sampled, the size of the sample, the method of sampling, and the conclusion that was drawn. Apply the FRISCO approach to this report and include a copy of the report with your comments.  
10:22 寻找一份基于样本的调查报告，报告中包括样本人口的规模、样本的大小、抽样方法以及得出的结论。对该报告应用FRISCO方法，并附上报告的副本及您的评论。**­lation sampled, the size of the sample, the method of sampling, and the conclusion that was drawn. Apply the FRISCO approach to this report and include a copy of the report with your comments.

**10:23 Design a sampling study that is intended to answer a significant question. (1) State the question, (2) describe the population of interest (including approximate size), and (3) describe the population from which the sample will be drawn if it is different from the population of interest. If it is different, also (4) explain how you will justify inferring to the population of interest, (5) describe your sampling plan (including numbers), and (6) describe the technique for securing information about the selected individual (for example, if you will ask one or more questions, state them and give your plan for interpreting them). Prepare to describe your planned study to your class or group.  
设计一个旨在回答重要问题的抽样研究。(1) 提出问题，(2) 描述感兴趣的人群（包括大致规模），(3) 描述将从中抽取样本的人群，如果与感兴趣的人群不同，还需 (4) 解释如何证明对感兴趣的人群进行推断的合理性，(5) 描述你的抽样计划（包括数量），(6) 描述获取所选个体信息的技术（例如，如果你将提问一个或多个问题，请陈述并给出解释计划）。准备好向你的班级或团体描述你计划的研究。**­tion. (1) State the question, (2) describe the population of interest (including approximate size), and (3) describe the population from which the sample will be drawn if it is different from the population of interest. If it is different, also (4) explain how you will justify inferring ­ing numbers), and (6) describe the technique for securing information about the selected individual (for example, if you will ask one or more questions, state them and give your plan for interpreting them). Prepare to describe your planned study to your class or group.

Interpretation of Data:  
数据解读

Tables, Graphs, and Correlations  
表格、图表和相关性

­able with tables, graphs, negative Tables, graphs, and correlations are useful ways of presenting data and of developing and testing hypotheses about relationships. Because most of vou have learned about tables and graphs elsewhere, 1 shall here only do a quick review' of some important features. Although this section is primarily for those who feel somewhat uncomfortable with tables, graphs, negative and positive relationships, and correlation relationships, others will find some interesting questions here. First, let us examine a table of numbers related to highway fatalities (Table 10.2).   
表格、图表和相关性是展示数据和发展、测试关系假设的有用方式。因为大多数人已经在其他地方学习过表格和图表，所以我在这里只会快速回顾一些重要特点。虽然本节主要是为那些对表格、图表、负面和正面关系以及相关性关系感到有些不舒服的人准备的，但其他人也会在这里找到一些有趣的问题。首先，让我们来看一张与公路死亡人数相关的表格（表10.2）。­ships, others will find some interesting questions here. First, let us examine a table of numbers related to highway fatalities (Table 10.2).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | | | |
| **TABLE 10.2 Traffic Fatalities, Population, and Registered Vehicles for** | | | | |
| **Sixteen Southern States and Washington, D.C., 1976** | | | | |
| *1. State* | *2. Highway Fatalities (thousands)* | *3. Population (millions* | *4 Registered*  *Vehicles (millions)* | 5. *Highway Fatalities per 100,000 Population (Column 2 x 100 /Column 3* |
| Texas | 3.24 | 12 60 | 8.97 | 26 |
| Florida | 2 02 | 8.35 | 5.85 | 24 |
| North Carolina | 1.58 | 5.46 | 3.89 | 29 |
| Georgia | 1.30 | 4.98 | 3.33 | 26 |
| Tennessee | 1.28 | 4.23 | 2.81 | 30 |
| Alabama | 1.14 | 3.65 | 2.58 | 31 |
| Virginia | 1.0o | 5.05 | 3.30 | 21 |
| Louisiana | 1.00 | 3.88 | 2.34 | 26 |
| Kentucky | .90 | 3.44 | 2.35 | 26 |
| Oklahoma | .86 | 2.77 | 2.21 | 31 |
| South Carolina | .83 | 2.84 | 1.77 | 29 |
| Mississippi | .72 | 2.37 | 1.45 | 30 |
| Maryland | .68 | 4.13 | 2.51 | 16 |
| Arkansas | .53 | 2 12 | 1.35 | 25 |
| West Virginia | .52 | 1.83 | 1.04 | 28 |
| Delaware | .14 | .58 | .36 | 24 |
| Washington, D.C. | .08 | .70 | .37 | 11 |
| Average | 1.05 | 4.06 | 2.73 | 25.5 |

What is the meaning of the number 3.24 at the top of Column 2? A glance at the column heading tells us that 3.24 is in the column containing numbers of high- wav fatalities in thousands. It is in a row labeled Texas. Therefore, the number 3.24 is the number of highway fatalities (in thousands) in Texas, or roughly 3,240. The title of the table tells us roughly what we can expect to find in the table. Actually, three very important places to look in a table of numbers are the title of the table, the column headings, and the row labels. Sometimes, in order to avoid clutter in a table, footnotes are added to explain some special fact. These must be examined also.  
3.24在第2列顶部的数字的含义是什么？通过看一眼列标题，我们可以知道3.24是包含高波浪致命人数的列中的数字。它在一个标有德克萨斯的行中。因此，数字3.24是德克萨斯州的公路致命人数（以千计），大约为3,240。表的标题大致告诉我们可以在表中找到什么。实际上，在数字表中，有三个非常重要的地方需要查看，即表的标题、列标题和行标签。有时，为了避免表格混乱，会添加脚注来解释一些特殊事实。这些也必须进行检查。

­nience. The exact figures would have made it more difficult to see the relationships in the table as a whole, and probably are not absolutely accurate anyway.The number 3.24 was stated in terms of thousands and rounded off for convenience. The exact figures would have made it more difficult to see the relationships in the table as a whole, and probably are not absolutely accurate anyway.  
3.24这个数字是以千为单位进行陈述并进行了舍入以方便阅读。精确的数字会使整个表格中的关系更难以理解，并且可能也不是绝对准确的。

Comparing the number 3.24 with the numbers by the names of the other states gives us some idea of how serious 3.24 is. But we must be careful. Of course, a rate of 3,240 highway fatalities is serious no matter what the number is in other places. But relative to the other places, did Texas have the most dangerous highways that year? A quick and careless look at Columns 1 and 2 might suggest that, of the places listed, Texas has the most dangerous highways because 3.24 is the highest number in Column 2. But note that Texas had more people and more vehicles than any of the other places, so it does not seem fair to judge it the most dangerous without taking into account the size of the population exposed to traffic fatalities. West Virginia has .52 in Column 2. Does that mean that West Virginia had safer highways? No, because it had a much smaller population than Texas (1.83 million, as can be seen across from West Virginia in Column 3). There were many fewer people available to be hurt on the highways.  
将数字3.24与其他州名称旁边的数字进行比较，可以让我们对3.24的严重性有一些概念。但我们必须小心。当然，无论其他地方的数字是多少，3240起公路死亡事故的比率都是严重的。但相对于其他地方，德克萨斯州当年的公路最危险吗？快速而粗心地看一下第1列和第2列，可能会认为在列2中，德克萨斯州是最危险的地方，因为3.24是最高的数字。但请注意，德克萨斯州的人口和车辆比其他地方都多，因此在考虑到暴露于交通事故的人口规模之前，判断它最危险似乎是不公平的。西弗吉尼亚州在列2中是0.52。这是否意味着西弗吉尼亚州的公路更安全？不，因为它的人口比德克萨斯州要小得多（可以在第3列从西弗吉尼亚州对面看到，人口为183万）。公路上受伤的人要少得多。

Looked at another way, the number of fatalities in Texas was about three times the average for all of these states (given at the bottom of Column 2), but that does not show that Texas was three times as dangerous as the average. It has about three times the average population of all these states (see the bottom and top of Column 3).  
"换个角度看，德克萨斯州的死亡人数大约是这些州的平均值的三倍（在第2栏底部给出），但这并不意味着德克萨斯州的危险程度是平均值的三倍。德克萨斯州的人口大约是这些州的平均值的三倍（见第3栏底部和顶部）。”

One way to make a comparison is to make a ratio of the number of fatalities to the number of people, and compare these ratios. Roughly speaking, such a ratio shows the chances, if you were a member of that population, that you had of being a fatality, neglecting other factors than just living there. I have calculated the ratios (Column 5) and find that the highway fatalities per hundred thousand people were 26 for Texas and 28 for West Virginia. (Because I worked with rounded numbers, these figures are not precise. They are close enough for us to say that the rates were about the same.)

­tional year. Is there reason to think that conditions in 1976 w ere significantly differ­ent from now?The important point here is that comparisons can be misleading. When reading or making tables of figures, we should seek fair comparisons. Often, some note of warning should be included, unless one’s audience is sophisticated enough that the warning is not needed. Of course, the date of the information should be noted. Things might well be different now, and the year studied might have been an exceptional year. Is there reason to think that conditions in 1976 w ere significantly different from now?  
一种比较的方法是将死亡人数与人口数量进行比例计算，并比较这些比例。粗略地说，这样的比例显示了如果你是该人口的一员，你成为死亡人数的机会，忽略了除了居住地之外的其他因素。我计算了这些比例（第5列），发现德克萨斯州每十万人的高速公路死亡人数为26，而西弗吉尼亚州为28。（由于我使用的是四舍五入的数字，这些数据并不精确。但它们足够接近，我们可以说这些比率大致相同。）这里的重要一点是，比较可能会误导。在阅读或制作数据表时，我们应该寻求公平的比较。通常情况下，除非受众足够复杂，不需要警告，否则应该包含一些警告。当然，应该注意信息的日期。现在的情况可能会有所不同，研究的年份可能是一个特殊的年份。有理由认为1976年的情况与现在显著不同吗？

­ening. Just stop and think about their meaning (the C of It is easy to be misled by tables. One must stop and think about the numbers. Numbers do frighten some people, but simple numbers like these need not be frightening. Just stop and think about their meaning (the C of FRISCO). A higher number of fatalities does not by itself mean that a place is more dangerous.  
被表格误导是很容易的。人们必须停下来思考这些数字。数字确实让一些人感到害怕，但是像这样简单的数字并不需要让人害怕。只需停下来思考它们的含义（FRISCO的C）。更高的死亡人数并不能单凭这个就意味着一个地方更危险。­ber of fatalities does not by itself mean that a place is more dangerous.

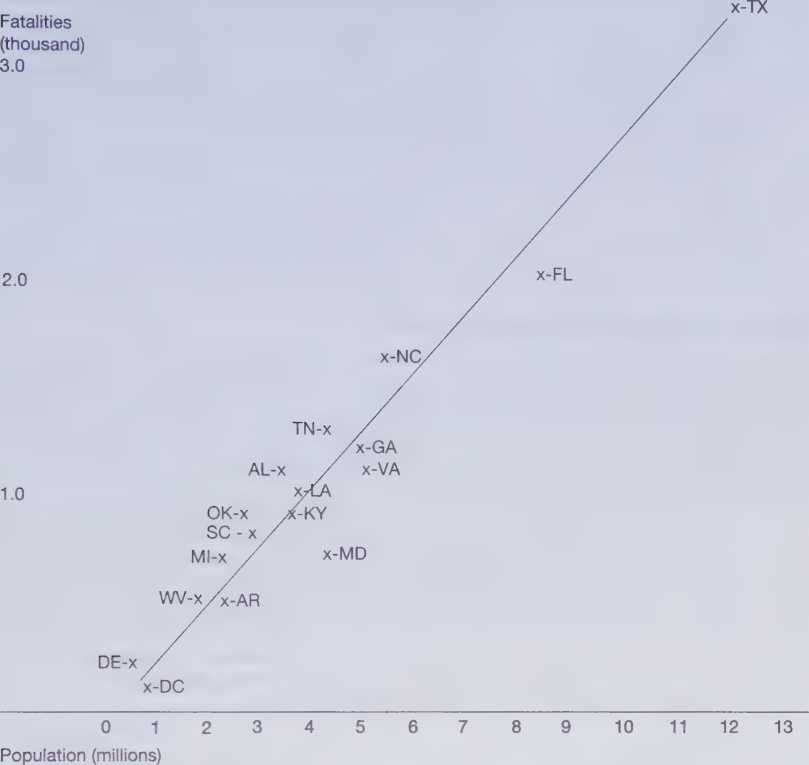
Graphs  
图表

­ulation. The line at the bottom on the horizontal direction is called the horizontal axis, and here it shows population. The line in the vertical direction is called the ver­tical axis; here it shows traffic fatalities. In looking at a graph, one first thing to do is to become familiar with what each axis represents, and of course, to read the title.Graphs that show relationships can be intimidating. But all it takes is reading the titles and thinking about the meaning of the points and lines. Look at Graph 10:1, which shows a point for each place plotted on two axes: one for fatalities and one for population. The line at the bottom on the horizontal direction is called the horizontal axis, and here it shows population. The line in the vertical direction is called the vertical axis; here it shows traffic fatalities. In looking at a graph, one first thing to do is to become familiar with what each axis represents, and of course, to read the title.  
展示关系的图表可能令人生畏。但只需要阅读标题并思考点和线的含义。看看图表10:1，它显示了每个地点在两个轴上的一个点：一个表示死亡人数，一个表示人口。水平方向底部的线被称为水平轴，在这里表示人口。垂直方向的线被称为垂直轴，在这里表示交通事故死亡人数。在观察图表时，首先要熟悉每个轴代表的含义，当然还要阅读标题。

­ity number. Anywhere on a horizontal line across the graph indicates the number of fatalities shown by the number it crosses at the left. Anvwhere along a vertical line drawn up from the bottom indicates a population of a size given by the number it crosses at the bottom. To get a point for Texas, we go across from 3.24 for fatalities, and go up from 12.60 for population. That point represents fatalities of 3,240 and population of 12.60 million, as one can tell by going back to the axes: going straight down from the point we cross the horizontal axis at 12.60, and going across from the point we cross the vertical axis at 3.24.Each place has been represented by a point (shown by an .v), determined by going straight up from its population number and going straight across from its fatality number. Anywhere on a horizontal line across the graph indicates the number of fatalities shown by the number it crosses at the left. Anvwhere along a vertical line drawn up from the bottom indicates a population of a size given by the number it crosses at the bottom. To get a point for Texas, we go across from 3.24 for fatalities, and go up from 12.60 for population. That point represents fatalities of 3,240 and population of 12.60 million, as one can tell by going back to the axes: going straight down from the point we cross the horizontal axis at 12.60, and going across from the point we cross the vertical axis at 3.24.  
每个地方都用一个点（用.v表示）来表示，该点由从其人口数字向上直线行进和从其死亡数字向右直线行进确定。图表上任何水平线上的任意位置表示了其左侧交叉数字所示的死亡人数。从底部向上画的任何垂直线上的任意位置表示了其底部交叉数字所示的人口规模。要得到德克萨斯州的一个点，我们从死亡人数3.24向右行进，从人口1260万向上行进。该点表示了3240人的死亡人数和1260万人的人口，可以通过回到坐标轴上来确定：从该点向下直线行进，我们在水平轴上交叉于12.60，从该点向右直线行进，我们在垂直轴上交叉于3.24。

The display of points in a graph like that of Graph 10.1 is called a scαttcrplot. (I   
在类似图10.1的图表中显示的点被称为散点图。

Graph 10:1 Traffic Fatalities vs. Population in Sixteen Southern States and Washington, D.C.  
图表10:1 十六个南部州和华盛顿特区的交通事故死亡人数与人口对比



plotted the points and they are scattered about.) I also drew a line (called the line of best fit) that represents a hypothesis about the relationship in that set of places between population and fatalities in the year studied. Because the line does not go directly through all the points, there must be other things than size of population that influenced the number of fatalities.  
绘制了这些点并且它们散布在周围。我还画了一条线（称为最佳拟合线），代表了对所研究地区的人口和死亡人数之间关系的假设。由于该线并没有直接通过所有的点，所以人口规模之外还有其他因素影响了死亡人数。

­sented in the data. For example, it could be the basis of a prediction that if Texas had a population of only 11.0 million, there would have been somewhere around 2.8 thousand (or 2,800) fatalities. (Draw a straight line up from 11.0 million until it touches the line of best fit that I drew. Then, from the point of touching draw a line- straight over to the vertical axis at the left and see where it hits—about 2.8.) The line of best fit represents an inferred generalization that goes beyond the data.Until I drew the line, I was engaged in limited-to-the-data generalizing. But the line suggests that there is a relationship that holds for population sizes not represented in the data. For example, it could be the basis of a prediction that if Texas had a population of only 11.0 million, there would have been somewhere around 2.8 thousand (or 2,800) fatalities. (Draw a straight line up from 11.0 million until it touches the line of best fit that I drew. Then, from the point of touching draw a line- straight over to the vertical axis at the left and see where it hits—about 2.8.) The line of best fit represents an inferred generalization that goes beyond the data.   
在我划定这条线之前，我一直在进行基于数据的有限概括。但这条线表明，存在着一种适用于数据中未代表的人口规模的关系。例如，它可以作为一个预测的基础，如果德克萨斯州只有1100万人口，那么可能会有大约2800人（或2,800人）死亡。（从1100万开始画一条直线，直到它与我画的最佳拟合线相交。然后，从相交点开始画一条直线，直到左侧的垂直轴，看看它在哪里相交——大约是2.8。）最佳拟合线代表了一种超越数据的推断概括。

The limited-to-the-data generalization is this: For these seventeen places, larger populations tended to have more highway fatalities in the year studied. An inferred generalization is this: Places with larger populations are likely to have larger numbers of highway fatalities. This inferred generalization seems plausible, but I do not intend to defend it further.  
这个基于数据的概括是：对于这十七个地方来说，在研究年份中，人口较多的地方往往有更多的公路死亡事故。一个推断性的概括是：人口较多的地方很可能有更多的公路死亡事故。这个推断性的概括似乎是合理的，但我不打算进一步为其辩护。

­ple who live in and around Washington, D.C., tend to be more cautious on the high­ways. What do you think of these generalizations? They illustrate the distinction between observation and inference that I drew back in Chapter 4, if you are willing to think of the limited-to-the-data generalization as a set of observations. If not, then at least the distinctions are parallel and the warning the same: We generally must be more wary of inferences that go beyond the data than of the data on which they are based.Here is another limited-to-the-data generalization: In the areas studied, there tended to be fewer fatalities per person in and around the capital of the United States than in places away from the capital. Here is another inferred generalization: The people who live in and around Washington, D.C., tend to be more cautious on the highways. What do you think of these generalizations? They illustrate the distinction between observation and inference that I drew back in Chapter 4, if you are willing to think of the limited-to-the-data generalization as a set of observations. If not, then at least the distinctions are parallel and the warning the same: We generally must be more wary of inferences that go beyond the data than of the data on which they are based.  
这里是另一个仅限于数据的概括：在研究的区域中，与首都以外的地方相比，美国首都及周边地区的人均死亡人数较少。这里是另一个推断的概括：居住在华盛顿特区及周边地区的人在高速公路上更加谨慎。您对这些概括有何看法？它们展示了我在第四章中提到的观察和推断之间的区别，如果您愿意将仅限于数据的概括视为一组观察。如果不愿意，那么至少这些区别是相似的，警告也是相同的：我们通常对超出数据范围的推断必须更加警惕，而不是对其基于的数据。

Positive and Negative Relationships  
正面和负面关系

In the highway fatality case, the line of best fit shows a positive relationship between population and fatalities. That is, it suggests that as the population gets larger, the number of fatalities increases as well. A line that slopes up as it goes to the right shows a positive relationship. As one variable gets larger, so does the other. In contrast, a negative relationship is one in which, as one variable gets larger, the other gets smaller. See Table 10.3 for an example.  
在高速公路死亡案例中，最佳拟合线显示人口和死亡人数之间存在正相关关系。也就是说，随着人口的增加，死亡人数也会增加。向右上方倾斜的线表示正相关关系。当一个变量增大时，另一个变量也会增大。相反，负相关关系是指一个变量增大，另一个变量减小。请参阅表10.3以获取示例。

To secure the information in Table 10.3, a copilot recorded information from a set of aircraft instruments as the pilot took off and climbed to 5,000 feet en route to the destination. The primary purpose was to see the relationships between altitude and temperature, but a number of other items were recorded as well. In order to secure accuracy of estimates, the same operation should be repeated a number of

TABLE 10.3 Altitude, Temperature, Airspeed, Vertical Speed, and Distance from Airport on a Routine Takeoff and Climb

*Distance from*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *A ltitude (feet)* | *Temperature (Fahrenheit)* | *Airspeed (miles per hour)* | *Vertical Speed (feet per minute)* | *Airport Center (nautical miles)* |
| 756» | *72* | no reading | 0 | 0.5c |
| 1,000 | *70* | ,115b | 1,100 | 1.1 |
| 2,000 | *67* | 115 | 1,050 | 2.8 |
| 3,000 | *63* | 115 | 980 | 4.4 |
| 4,000 | *60* | 115 | 920 | 5.9 |
| 5,000 | 56 | 115 | 850 | 7.5 |

*Notes:  
为了保护表格10.3中的信息，副驾驶员在飞行员起飞并爬升至5000英尺的途中记录了一套飞行仪表的信息。主要目的是观察高度和温度之间的关系，但还记录了其他一些项目。为了确保估计的准确性，应该重复进行相同的操作多次。表格10.3中包括高度、温度、空速、垂直速度和距离机场的距离的常规起飞和爬升距离的说明：*

a. The top row gives the data just before takeoff. The airport is 756 feet above sea level.  
顶行提供起飞前的数据。机场海拔756英尺。

b. The pilot was attempting to maintain a constant indicated airspeed  
飞行员试图保持恒定的指示空速

c. This information can be directly read from an instrument called a DME (Distance Measuring Equipment).   
这些信息可以直接从一个叫做DME（距离测量设备）的仪器中读取。

Graph 10:2. Altitude vs. Temperature on a Selected Flight  
图10:2. 选定航班的高度与温度

5,000

Altitude  
高度

(feet) 4,000

3,000

2,000

1,000

50 60 70 80

Temperature (degrees Fahrenheit)

times (three is often a good number of times) and the results averaged to get a good estimate, because precise reading of these instruments is not possible, and because mistakes can creep in. But my purpose here is to illustrate relationships, using tables and graphs, so tor the sake of simplicity, let us neglect the securing of multiple read­ings. These few pieces of data do not by themselves establish relationships, but they are striking enough to give one good reason to believe that there are some significant relationships here. (Other data and theoretical considerations do, however, support trends evident here.)

­ture? We can see that the temperature went down as the altitude increased. (A gen­eral rule at these low altitudes, by the way, is that the temperature usually decreases about 3What do the data tell us about the relationship between altitude and temperature? We can see that the temperature went down as the altitude increased. (A general rule at these low altitudes, by the way, is that the temperature usually decreases about 3oF for each thousand feet of altitude—a well-established generalization.) This relationship is plotted in Graph 10:2.  
多次（三次通常是一个好的次数）并对结果进行平均以获得一个良好的估计，因为这些仪器的精确读数是不可能的，而且可能会出现错误。但是我在这里的目的是用表格和图表来说明关系，所以为了简单起见，让我们忽略多次读数的确保。这些少量的数据本身并不能建立关系，但它们足够引人注目，给人足够的理由相信这里存在一些重要的关系（其他数据和理论考虑确实支持这里明显的趋势）。数据告诉我们关于海拔和温度之间的关系有什么？我们可以看到随着海拔的增加，温度下降（顺便说一句，在这些低海拔地区，通常每千英尺的海拔温度通常会下降约3华氏度-这是一个成熟的概括）。这种关系在图表10:2中绘制出来。

­tionship is a Note that the line goes up to the left, not to the right. This means that the relationship is a negative relationship. As the altitude increased, the temperature decreased.  
请注意，线条向左上方延伸，而不是向右。这意味着这种关系是负相关关系。随着海拔的增加，温度降低。

Note also that the variable on the horizontal axis does not start at 0. Can you see that if it had ranged from 0 to 80, the line would have been much steeper in slope? See Graph 10:3, based on the same data, and compare it to Graph 10:2. The lesson here is that relationships and differences can be made to appear in different ways by excluding or including selected portions. There are other ways of being fooled by the way the scale is set up. One in particular is the use of logarithmic scales. If you remember logarithms, you might imagine how this can occur.  
请注意，水平轴上的变量并不从0开始。你能看到如果它的范围从0到80，曲线的斜率会更陡吗？请参考基于相同数据的图表10:3，并将其与图表10:2进行比较。这里的教训是，通过排除或包含选定部分，可以以不同的方式呈现关系和差异。设置刻度的方式还有其他的欺骗性。其中一个特别的方法是使用对数刻度。如果你还记得对数，你可能能想象出这是如何发生的。

­speed for this flight in Graph 10:4. The line of best fit (a perfect fit this time) goes straight up and down. No matter what the altitude (in this sequence of observations) the indicated airspeed was the same. So there was no apparent relation in this sequence, something that we can see from the line’s being straight up and down. However, we do not learn anything from this about the possibility of a real relation­ship between attitude and indicated airspeed because the pilot deliberately kept the indicated airspeed at 115 mph as the airplane climbed. At constant power and verti-Next, look at a scatterplot with a line of best fit for altitude and indicated airspeed for this flight in Graph 10:4. The line of best fit (a perfect fit this time) goes straight up and down. No matter what the altitude (in this sequence of observations) the indicated airspeed was the same. So there was no apparent relation in this sequence, something that we can see from the line’s being straight up and down. However, we do not learn anything from this about the possibility of a real relationship between attitude and indicated airspeed because the pilot deliberately kept the indicated airspeed at 115 mph as the airplane climbed. At constant power and verti-   
接下来，看一下图10:4中海拔和指示空速的散点图及最佳拟合线。最佳拟合线（这次是完美的拟合）是直上直下的。无论海拔如何（在这个观测序列中），指示空速都是相同的。因此，在这个序列中没有明显的关系，我们可以从直上直下的线条中看出来。然而，我们从中无法得知姿态和指示空速之间是否存在真实的关系，因为飞行员故意将指示空速保持在115英里/小时，而飞机在爬升。在恒定的动力和垂直-

5,000

Altitude (feet) 4,000

3,000

2,000

1,000

0 10 20 30 40 50 60 70 80

Temperature (degrees Fahrenheit)

cal speed, the indicated airspeed would in fact have declined as this aircraft climbed.  
在这架飞机爬升的过程中，指示空速实际上会下降。

What would you infer from a line of best fit that goes straight across, not slanted at all? Similarly, it would indicate no apparent relationship in the data because it would tell us that there was no change in the variable on the vertical axis when there were changes in the variable in the horizontal axis. If you do not see that, then study the graph a bit until it becomes clear.  
如果一条最佳拟合线是水平的，没有任何倾斜，你会从中推断出什么？类似地，这将表明数据中没有明显的关系，因为它告诉我们在水平轴上的变量发生变化时，垂直轴上的变量没有发生变化。如果你没有看到这一点，那么请稍微研究一下图表，直到它变得清楚为止。

Draw or imagine a scatterplot using altitude and distance from the airport. You should get a line that slopes upward to the right, showing a positive relationship for this particular segment of this particular flight. Does that show that climbing causes an airplane to be farther from the airport? Not in ground distance. The airplane could just as easily have circled and arrived at 5,000 feet when it was just over the place where it started. The ground distance from reference point on the airport could then have been the same as at departure. Climbing does not cause airplanes to be farther away across the ground from a position. Although there was a relationship in this flight, it was what some people call a spurious relationship. I think that the w ord spurious is a bit strong because it implies that the relationship is counterfeit or false. I suggest instead calling it a noncausal association because, in that situation, there really was a relationship. What do you think?  
使用海拔和距离机场绘制或想象一个散点图。你应该得到一条向右上方倾斜的线，显示出这个特定航段的正相关关系。这是否表明爬升会使飞机离机场更远？在地面距离上并非如此。飞机也可以绕圈并在刚刚起飞的地方达到5000英尺。此时，参考点到机场的地面距离可能与起飞时相同。爬升并不会导致飞机在地面上离一个位置更远。尽管在这次飞行中存在一种关系，但这是一种被一些人称为虚假关系的关系。我认为"虚假"这个词有点过于强烈，因为它暗示这种关系是假冒或错误的。我建议改称为非因果关联，因为在那种情况下，确实存在一种关系。你认为呢？*­rious*

5,000

Altitude  
高度

(feet) 4,000

3,000

2,000

1,000

100 110 120 130

Indicated Airspeed (miles per hour)   
指示空速（英里每小时）

Correlations  
相关性

*Correlation coefficients are a numerical way of expressing the degree of relationship between two variables. They range from +1 to -1, with 0 indicating no relationship at all. +1 indicates a perfect positive relationship; -1 indicates a perfect negative relationship. If a relationship is perfect, then there is a formula for precisely calculating either one, given the other. A high negative relationship is stronger than a low positive relationship. For example, a relationship of-.9 is stronger than a +.3.  
相关系数是一种数值化表达两个变量之间关系程度的方式。它们的取值范围从+1到-1，其中0表示没有任何关系。+1表示完全正相关关系；-1表示完全负相关关系。如果关系是完美的，那么可以通过一个公式准确计算其中一个变量，已知另一个变量。高度负相关关系比低度正相关关系更强。例如，-.9的关系比+.3的关系更强。*­tionship. If ­tive relationship. For example,

For some examples of correlation coefficients, consider some data and graphs presented earlier in this chapter. The correlation coefficient for the relationship between traffic fatalities and population in Graph 10:1 is .98; the correlation coefficient for the relationship between altitude and temperature presented in Graph 10:2 is stronger than -.99; and 0 is the correlation coefficient for the relationship between altitude and indicated airspeed (no relationship in this particular study) in Graph 10:4. The first two are very high correlations compared with those commonly obtained in the social sciences. For example, the correlations between college entrance tests and grades in college tend to run less than +.50 and are regarded as significant.  
对于一些相关系数的例子，请考虑本章前面提供的一些数据和图表。图10:1中，交通事故死亡人数与人口之间的相关系数为0.98；图10:2中，海拔与温度之间的相关系数比-0.99更强；而图10:4中，海拔与指示空速之间的相关系数为0（在这个特定研究中没有关系）。前两者与社会科学中通常获得的相关系数相比非常高。例如，大学入学考试成绩与大学成绩之间的相关系数往往小于+0.50，并被认为具有重要意义。

Making scatterplots like those in the graphs is helpful in visualizing the situa­tion, but the correlation coefficient is an efficient means of reporting the relationship, and has other uses as well. See a statistics book for some of these uses.5

As with other generalizations based on data, one must be careful in inferring beyond the data on which the correlation is based. For example, it would be a mistake to infer from the data given here that the correlation between altitude and indicated airspeed is generally zero. In fact, it is not. The greater the altitude, the less the indicated airspeed, other things remaining equal. What made the 0 relationship in this case was the pilot’s deliberately maintaining an indicated airspeed of 115 mph by adjusting the controls. This warning is often ignored in the social sciences, which make heavy use of correlations. Instead, investigators and interpreters often blithely assume that their sample is representative of the general population or of the population to which they desire to apply the correlation. For example, people often assume that a high correlation between a multiple-choice test of English usage and good writing will hold of groups for whom the multiple-choice test has become a high- stakes test. (An example of a high-stakes test would be an admissions test or advanced placement test for which getting a good score is very important to some people.) People often train to take such tests, thus reducing the actual relationship between the test and good writing.  
制作类似图表中的散点图有助于对情况进行可视化，但相关系数是报告关系的有效手段，也有其他用途。有关这些用途，请参阅统计学书籍。与基于数据的其他概括一样，我们必须小心在推断与相关性基础上的数据之外的事物时。例如，从这里给出的数据推断海拔和指示空速之间的相关性通常为零是错误的。事实上，并非如此。海拔越高，指示空速越低，其他条件保持不变。在这种情况下，导致0相关性的是飞行员通过调整控制器有意保持指示空速为115英里/小时。这种警告在社会科学中经常被忽视，而社会科学则大量使用相关性。相反，调查人员和解释者常常轻率地假设他们的样本代表了一般人口或他们希望应用相关性的人口。例如，人们经常假设英语使用的多项选择测试与良好写作之间存在高度相关性，这适用于那些多项选择测试已成为高风险测试的群体。（高风险测试的一个例子是对某些人来说得到好成绩非常重要的入学考试或高级课程考试。）人们经常接受培训以参加此类测试，从而降低了测试与良好写作之间的实际关系。­take ­­lation

Although correlation coefficients can be very useful, be careful. Figures do not lie, but liars certainly do figure (and suggest misleading interpretations of the figures).  
虽然相关系数可能非常有用，但要小心。数字不会说谎，但说谎者肯定会编造（并提出对数字的误导性解释）。

Summary  
摘要

Kev features of tables and graphs are their titles and the labeling of their horizontal and vertical axes. Then one must also determine whether the numbers or lines mean what they might at first seem to mean. One way to do this is to see what bearing a 5 The type of correlation coefficient employed here is the most common kind, the Pearson ProductMoment Coefficient of Correlation. It is used for linear relationships, those that can be represented by a straight line.   
表格和图表的主要特点是它们的标题以及水平和垂直轴的标注。然后，我们还必须确定数字或线条是否意味着它们最初看起来的意思。一种方法是看看5个相关系数的影响。这里使用的相关系数类型是最常见的类型，即皮尔逊积矩相关系数。它用于线性关系，即可以用一条直线表示的关系。­Moment Coefficient of Correlation. It is used for linear relationships, those that can be represented by a straight line.

­ity table tell you that you would be at greater risk in Texas than in other places considered?conclusion drawn from data might have on you. For example, does the highway fatality table tell you that you would be at greater risk in Texas than in other places considered?  
从数据中得出的结论可能对你产生什么影响。例如，高速公路死亡率表是否告诉你，在德克萨斯州的风险比其他地方更大？

A good way to see whether there is a relationship between two variables is to make a scatterplot. Each point marked with an x shows an individual person or thing. Its location is determined by its value on each of the axes. After all the points are marked, a line of best fit is drawn. It represents a beyond-the-data hypothesis about the relationship between the variables for the data that were used. Such lines of best fit do not tell us which of either variable is a cause of the other, nor that there is a causal relationship between the variables. They might be arbitrarily related, as is the relationship between altitude and distance from the airport. Neither was a cause of the other. And they might be really related, as arc altitude and indicated airspeed for that type of aircraft; but the relationship might be masked, perhaps by the investigator’s procedures, as in the case when the pilot deliberately maintained an indicated airspeed by adjusting the trim control.  
判断两个变量之间是否存在关系的一种好方法是制作散点图。每个用x标记的点代表一个个体或物体。它的位置由其在每个轴上的值决定。在标记了所有点之后，会画出一条最佳拟合线。它代表了关于所使用数据的变量之间关系的超越数据的假设。这些最佳拟合线并不能告诉我们哪个变量是另一个变量的原因，也不能说明变量之间存在因果关系。它们可能是任意相关的，就像海拔和距离机场的关系一样。它们之间没有因果关系。它们也可能是真正相关的，比如某种飞机的弧形高度和指示空速；但这种关系可能被掩盖，也许是由于调查人员的程序，比如飞行员通过调整配平控制器来保持指示空速。­tor’s procedures, as in the case when the pilot deliberately maintained an indicated airspeed by adjusting the trim control.

A positive relationship is one in which, as one variable grows larger, the other does also. Positive relationships appear as sloped lines going up to the right (and down to the left) in standard ways of using axes. Negative relationships are those in which as one variable grows larger, the other grows smaller. Negative relationships appear as lines that slope up to the left (and down to the right). Lack of relationship is shown by lines that are either horizontal or vertical, or by no drawable line of best fit.  
正向关系是指一个变量增大时，另一个变量也增大。正向关系在使用坐标轴时通常表现为向右上方倾斜的线条（或向左下方倾斜）。负向关系是指一个变量增大时，另一个变量减小。负向关系通常表现为向左上方倾斜的线条（或向右下方倾斜）。缺乏关系则通过水平或垂直的线条，或者没有可绘制的最佳拟合线来表示。­ships appear as lines that slope up to the left (and down to the right). Lack of rela­tionship is shown by lines that are either horizontal or vertical, or by no drawable line of best fit.

Correlation coefficients (which range from +1 to -1) are often used to show the strength and nature of relationships. A strong positive relationship is shown bv a high positive decimal number that is close to, but not larger than, +1. A strong negative relationship is shown by a high negative decimal number that is close to, but not lower than, -1. A number hovering around zero indicates no relationship.  
相关系数（范围从+1到-1）通常用于显示关系的强度和性质。一个强正相关关系由一个接近但不大于+1的高正小数表示。一个强负相关关系由一个接近但不小于-1的高负小数表示。接近零的数字表示没有关系。

Check-Up 10C

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

10:24 A negative relationship, using standard ways of labeling axes, slopes up to the left.  
10:24 一个负相关关系，使用标准的坐标轴标签方式，向左上方倾斜。

10:25 If the points on a scatterplot all appear on the same line and the line slopes one way or the other, there is an apparent relationship between the variables for the data used.  
10:25 如果散点图上的点都在同一条直线上，并且直线向一侧倾斜，那么所使用的数据变量之间存在明显的关系。

**10:26 The entire possible range of a variable should appear on its axis.  
10:26 变量的整个可能范围应出现在其轴上。**

**10:27 A correlation of +1 indicates a strong negative relationship.  
10:27 一个+1的相关性表示一个强烈的负相关关系。**

10:28 A correlation of +.8 indicates a stronger relationship than a correlation of +.4.  
10:28 一个+.8的相关性表明比一个+.4的相关性更强的关系。

10:29 A correlation of +.4 indicates a stronger relationship than a correlation of-.8   
10:29 一个+.4的相关性表示比一个-.8的相关性更强的关系

Medium Answ er

**10:30 Make a scatterpk>t for altitude and distance from the airport for the data in Table 10.3. Draw a line of best fit.  
10:30 对表格10.3中的数据制作一个高度和距离散点图。画出最佳拟合线。**

**10:31 Make a scatterplot and line of best fit for altitude and vertical speed when the airplane is flying.  
制作一张散点图和最佳拟合线，显示飞机飞行时的海拔和垂直速度。**

1. Why did you select the range you did for the variable altitude?  
   你为什么选择了变量高度的范围？
2. Is the indicated relationship positive, negative, or neither?  
   指示的关系是正向的、负向的还是无关的？
3. Do you think that the relationship is causal? Explain. If you cannot answer this or explain why (because you are not familiar with the facts), then just read the suggested answer.  
   你认为这个关系是因果关系吗？解释一下。如果你无法回答或解释为什么（因为你对事实不熟悉），那就只读建议的答案。­not answer this or explain why (because you are not familiar with the facts), then just read the suggested answer.

**10:32 Make a scatterplot and line of best fit for highway fatalities and registered vehicles from the data in Table 10.2.  
10:32 在表10.2的数据基础上，制作一张公路死亡人数和注册车辆的散点图和最佳拟合线。**­tered vehicles from the data in Table 10.2.

1. Is there an apparent relationship between these two variables? If so, is it positive or negative?  
   这两个变量之间是否存在明显的关系？如果有，它是正相关还是负相关？
2. Do you think that there is a real causal relationship between these two variables? Defend your answer.  
   你认为这两个变量之间存在真正的因果关系吗？请为你的答案辩护。

**10:33 Make a scatterplot and line of best fit for temperature and distance from the airport, based on the data in Table 10.3.  
10:33 在表格10.3的数据基础上，制作温度和距离机场的散点图和最佳拟合直线。**

1. Is there an apparent relationship between these two variables? If so, is it positive or negative?  
   这两个变量之间是否存在明显的关系？如果有，它是正相关还是负相关？
2. Do you think that there is a real causal relationship between these two variables? Defend your answer.  
   你认为这两个变量之间存在真正的因果关系吗？请为你的答案辩护。
3. Can the data be generalized to a general relationship between distance from the airport and temperature (for example, “The farther one gets from this airport, the colder it is”)? Why?  
   数据能否推广到机场距离和温度之间的一般关系（例如，离机场越远，越冷）？为什么？­tance from the airport and temperature (for example, “The farther one gets from this airport, the colder it is”)? Why?

Longer Answer  
更长的答案

**10:34 Do a study in which you gather data that can be put in a table and a graph. Make the table and a scatterplot and line-of-best fit graph. Give the titles to the table and graph, and label the rows, columns, and axes.  
10:34 进行一项研究，收集可以放入表格和散点图中的数据。制作表格、散点图和最佳拟合直线图。为表格和图表提供标题，并标注行、列和坐标轴。**

1. On your scatterplot, did you start both variables at zero? If so, why? If not, why not?  
   在你的散点图上，你是否将两个变量都从零开始？如果是，为什么？如果不是，为什么不是？
2. Is there a positive or negative relationship, or neither?  
   有正面关系、负面关系或者没有关系吗？
3. Is there a causal relationship between the variables? If so, in which way? Explain.  
   变量之间是否存在因果关系？如果有，是以何种方式？请解释。

Suggested Answers for Chapter 10  
第10章的建议答案

**Check-Up 10A**

**10:1 T 10:2 F 10:3 T 10:4 T 10:5 T 10:6 T**

**10:7** F **10:8** F **10:9** F

**10:2** Add *sometimes.*

10:7 Change better than even th nt the next will turn up heads to still one half that the next will turn up heads.  
改变比平均更好，下一个将会出现正面的可能性仍然是前一个的一半。

**10:8 Change better than even that the next will turn up tails to still one half that the next will turn up tails.  
10:8 改变比即使下一个是反面的可能性还要大，变成下一个是反面的可能性的一半。**

**10:9** It is legitimate to extend a generalization to a population larger than the population from which a random sample was drawn as long as the population from which the sample was drawn was typical of the larger one. '

**10:10 and 10:11 These are up to you.  
10:9 将一般化推广到比随机抽样的人口更大的人口是合理的，只要抽样的人口是典型的大人口的一部分。'10:10和10:11由您决定。**

**Check-Up 10B**

**10:12 F 10:13 F 10:14 T 10:15 F 10:16 T**

10:17 F 10:18 F 10:19 T

**10:12 A random sample is one in which every element in the population sampled had an equal chance of being selected.  
10:12 随机样本是指在抽样的总体中，每个元素被选中的机会是相等的。**

**10:13 A pure random sample of sufficient size is probably representative.  
10:13 一个足够大的纯随机样本可能是代表性的。**

**10:15 Change systematic sample to cluster sample. (Instead of this, you could give a definition of systematic sampling.)  
10:15 将系统抽样更改为群集抽样。（您也可以给出系统抽样的定义，而不是更改为群集抽样。）**

**10:17 A pure random sample of a size greater than 1,000 is likely to be representative of the population.  
10:17 一个大于1,000的纯随机样本很可能代表整个人口。**­

**10:18 There is a basis for inferring to a larger population than the population from which the random sample was drawn, when the smaller population is typical of the larger one.  
10:18 对于一个较大的总体进行推断的基础是，当较小的总体代表较大的总体时，从中抽取的随机样本。**­tion is typical of the larger one.

**10:20 a. By neglecting the middle six hours, they risk missing problems that develop in those six hours but that are not causing trouble at the beginning and end.  
10:20 a. 忽略中间的六个小时，他们有可能错过在这六个小时内出现但在开始和结束时并未引起麻烦的问题。**

**b. It would probably be better to select every sixteenth ball (a systematic sample for the whole day). But perhaps the machine is systematically making every sixteenth ball badly and everyone is missed. It would probably be better to select at random six five- minute periods in each hour and to select at random one-eighth of the balls produced in each selected five-minute period. Again, 1,000 balls would be selected. I do not know enough about tennis ball production to be more specific.  
可能最好选择每隔十六个球（全天的系统样本）。但也许机器在有系统地制造每隔十六个球时出现了问题，每个人都错过了。可能最好在每个小时内随机选择六个五分钟的时间段，并随机选择每个选定的五分钟时间段中产生的球的八分之一。再次选择1,000个球。我对网球生产了解不够，无法给出更具体的说明。**­tematic sample for the whole day). But perhaps the machine is systematically making every sixteenth ball badly and everyone is missed. It would probably be better to select at random six five- minute periods in each hour and to select at random one-eighth of the balls produced in each selected five-minute period. Again, ­

**10:21** Deliberately omitted.

**10:22-10:23 These are up to you.  
10:22-10:23 这些由你决定。**

**Check-Up 10C**

**10:24 T 10:25 T 10:26 F 10:27 F 10:28 T**

10:29 F

**10:26 The entire possible range of variables is often not included on a graph so that a certain range can be examined more thoroughly.  
10:26 整个可能的变量范围通常不会在图表上显示，以便更彻底地研究某个特定范围。**

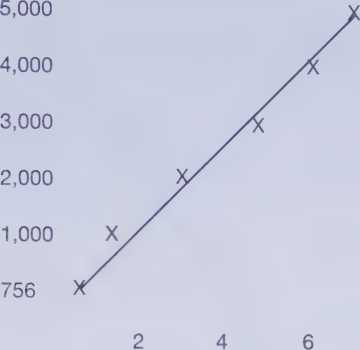
**10:27 Change negative to positive.  
10:27 改变负面为正面。**

**10:29 Change stronger to weaker  
10:29 更改为更弱**

10:30

Altitude (feet)

10



Distance from Airport Center (nautical miles)  
机场中心距离（海里）



10:31

Altitude 5.C00 (feet)

4,000

3,000

2,000

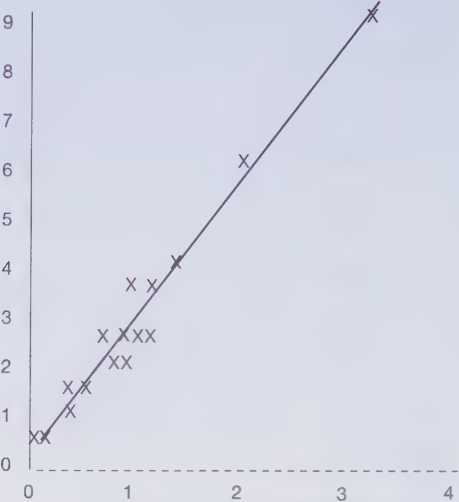
1,000

756

800 900 1000 1100 1200

Vertical Speed (fpm)

1. This was the range in the table.  
   这是表格中的范围。
2. Negative. (We cannot give a value for the altitude of 756 because we do not know what the vertical speed is at takeoff. The 0 verti­cal speed reading was obtained before the airplane was flying, as can be seen by the concurrent airspeed reading.)
3. Yes, because the airplane’s power and the density of the air on which the propeller can get a “bite” reduce with the altitude. (Giving a good answer to this question requires knowledge of the field. If you figured it out, good for you!)   
   否定。（我们无法给出756的高度值，因为我们不知道起飞时的垂直速度是多少。可以通过同时的空速读数看出，在飞机起飞之前获得了0的垂直速度读数。）是的，因为飞机的动力和螺旋桨所能获得的空气密度随着高度的增加而减小。（要对这个问题给出一个好的答案，需要对这个领域有所了解。如果你已经弄明白了，那么很好！）



**10:32**

Registered

Vehicles

(millions)

Highway Fatalities (thousands)

1. Yes.  
   是的。
2. Yes, because a greater number of vehicles results in more chances for accidents, providing that usage is about the same.  
   是的，因为车辆数量增加会导致更多的事故机会，前提是使用情况大致相同。

**10:33** Deliberately omitted.

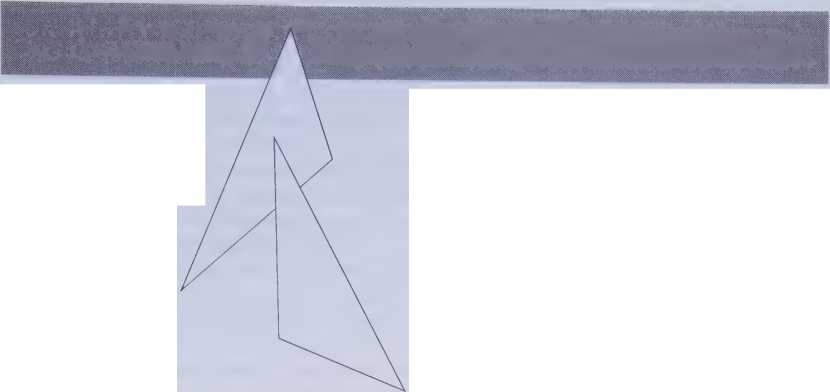
**10:34 This is up to you.  
这取决于你。**

**CHAPTER  
章节**

**11**

Making  
制作

Value Judgments  
价值判断



When we, the members of the jury, decided that Arlene was not justified in using the force she used, we made a value judgment. In effect, we were saying that, given the circumstances, she was wrong in using that much force.  
当我们作为陪审团的成员决定阿琳没有正当理由使用她使用的武力时，我们做出了一个价值判断。实际上，我们是在说，鉴于当时的情况，她在使用那么大的力量是错误的。

The making of value judgments is a controversial topic. Almost everything one can say in this area can arouse disagreement by someone, but I shall do my best to make some sense, and walk the fence between severe controversy and emptiness.  
价值判断的形成是一个有争议的话题。在这个领域几乎每一个说法都可能引起某人的不同意，但我会尽力做出一些有意义的解释，并在严重争议和空洞之间保持平衡。

Even the distinction between value statements and factual statements is in dispute, but for our purposes, a distinction is needed and can be made. However, because the distinction is so basic, it is difficult to find other words that clarify it.  
甚至价值陈述和事实陈述之间的区别都存在争议，但对于我们的目的来说，需要并且可以进行区分。然而，由于这个区别非常基础，很难找到其他能够澄清它的词语。­pute, but for our purposes, a distinction is needed and can be made. However, because the distinction is so basic, it is difficult to find other words that clarify it.

The Distinction Between  
区别

Value Statements and Factual Statements  
价值陈述和事实陈述

Roughly speaking, a factual statement attempts to describe, whereas a value statement places a value (positive or negative) on the way things are (or were, or could be). Here are some examples of statements that in the context were value statements:  
粗略地说，一个事实性陈述试图描述，而一个价值性陈述对事物的现状（或过去、或可能的未来）进行价值评价（积极或消极）。以下是一些在这个背景下属于价值性陈述的例子：

1. Arlene was wrong in using that much force.  
   阿琳使用了太大的力量是错误的。
2. Shakespeare makes better reading than Agatha Christie.  
   莎士比亚的作品比阿加莎·克里斯蒂更好读。
3. Physicists should have refused to cooperate in the making of nuclear weapons.  
   物理学家应该拒绝参与制造核武器。
4. It is generally right to promote democracy in nondemocratic lands.  
   在非民主国家推广民主通常是正确的。

Here are some statements about the same topics that in those contexts were factual statements:  
这里有一些关于相同主题的陈述，在那些情境中是事实陈述：­

1. Arlene stabbed Al.
2. These days more people read Agatha Christie than read Shakespeare.  
   这些天，阅读阿加莎·克里斯蒂的人比阅读莎士比亚的人更多。
3. Many physicists cooperated in the making of nuclear weapons.  
   许多物理学家参与了核武器的制造。
4. Democratic countries never try to promote democracy in nondemocratic lands.   
   民主国家从不试图在非民主国家推动民主。

There can be false factual statements (such as #8) and false value statements, such as “Every scientist is a higher-quality person than any politician.”

I am including statements using the words should, ought, etc., in the value statement category if they imply value statements using words such as right, wrong, good, and bud. For example, statement #3 is a value statement because it roughly implies the following value proposition: “It would have been a good thing for physicists to have refused to cooperate in the making of nuclear weapons.” On the other hand, the following statement containing the word should is not a value statement: “If you want the quickest way to Sacramento at midday, then you should use the Bay Bridge.” It is not a value statement because it simply informs us of the fact that the Bay Bridge route is the quickest at midday. This is a matter that can be determined by observation and generalization from observation. To decide that the quickest way is the most desirable way, on the other hand, would be to make a value decision.  
可能存在虚假的事实陈述（例如#8）和虚假的价值陈述，例如每个科学家都比任何政治家都更高素质。如果使用诸如应该、应当等词语来暗示使用诸如对、错、好、坏等词语的价值陈述，我将把这些陈述归类为价值陈述。例如，陈述#3是一个价值陈述，因为它大致暗示了以下价值主张：物理学家拒绝合作制造核武器是一件好事。另一方面，以下含有should一词的陈述不是一个价值陈述：如果你想在正午时分找到最快的去萨克拉门托的路线，那么你应该选择Bay Bridge。它不是一个价值陈述，因为它只是告诉我们Bay Bridge路线在正午时分是最快的。这是一个可以通过观察和从观察中推广得出的事实。然而，决定最快的路线是最理想的路线，将是做出一个价值判断。­ment category if they imply value statements using words such as ­tion and generalization from observation. To decide that the quickest way is the most desirable way,

­ment “The meeting was dominated by that arrogant group” clearly has both ele­ments. It seems to be a largely factual question whether that group did dominate the meeting, but it is a value question whether the group’s behavior is objectionable enough The distinction between factual and value statements is not absolutely clear. There are statements that combine factual and value elements. For example, the statement “The meeting was dominated by that arrogant group” clearly has both elements. It seems to be a largely factual question whether that group did dominate the meeting, but it is a value question whether the group’s behavior is objectionable enough to be judged arrogant.  
事实陈述和价值陈述之间的区别并不完全清晰。有些陈述结合了事实和价值元素。例如，陈述“会议被那个傲慢的团体所主导”明显包含了两个元素。这个团体是否主导了会议似乎是一个主要基于事实的问题，但判断这个团体的行为是否足够令人反感以被认定为傲慢，则是一个价值问题。

For theoretical reasons, some people hold that all factual statements are based on values; others hold that all value statements are really factual statements, but for our purposes, we need not go into these topics. The distinction between value and factual statements is useful at the level of practical critical thinking, though not totally clear in all contexts and for all purposes.  
基于理论原因，有些人认为所有事实陈述都基于价值观；而另一些人认为所有价值观陈述实际上都是事实陈述，但对于我们的目的来说，我们不需要深入讨论这些话题。价值观和事实陈述之间的区别在实际批判性思维层面上是有用的，尽管在所有情境和所有目的中并不完全清晰。

­ferent kinds of things and that can be supported in sometimes radically different ways. It is useful because it tends to separate statements that assert two radically different kinds of things and that can be supported in sometimes radically different ways. By just inspecting the eight examples I have given, you should be able to see the radically different kind of assertion made by value and factual statements.  
它是有用的，因为它倾向于将断言两种根本不同的事物分开，并且可以以完全不同的方式支持。通过仅仅检查我给出的八个例子，您应该能够看到价值和事实陈述所做的根本不同的断言。­ically different kind of assertion made by value and factual statements.

­tion by acceptable authorities. Pure value statements, on the other hand, cannot serve as hypotheses that (causally) account for ordinary descriptive facts, and so cannot be the direct product of best-explanation inference. Value statements are not the simple direct result of observation. These differences in kinds of support make it useful to draw the distinction. It helps us decide what kind of support to seek for a statement.Although value and factual statements share some ways of being supported, there are ways that they do not share. Value and factual statements share, as ways of being supported, deduction or loose derivation from acceptable principles, and assertion by acceptable authorities. Pure value statements, on the other hand, cannot serve as hypotheses that (causally) account for ordinary descriptive facts, and so cannot be the direct product of best-explanation inference. Value statements are not the simple direct result of observation. These differences in kinds of support make it useful to draw the distinction. It helps us decide what kind of support to seek for a statement.  
虽然价值和事实陈述在某些支持方式上是相同的，但它们也有不同的地方。作为支持方式，价值和事实陈述共享从可接受原则中进行推导或松散推导的方式，以及通过可接受的权威进行断言的方式。然而，纯粹的价值陈述不能作为解释普通描述性事实的假设，因此不能直接作为最佳解释推理的直接产物。价值陈述不是简单的观察结果。这些支持方式上的差异使得区分变得有用。它帮助我们决定对一个陈述寻求何种支持。

When the Congress of the United States asked in the mid-1960s for a study of the extent of equality of educational opportunity in the United States, it was asking for more than a scientific study. James Coleman, the sociologist who took charge of this classic study, needed to make value judgments about what was to count as equality of educational opportunity. The danger is to think that all he had to do was a factual, scientific study, using only direct observation, generalization, and inference to best explanation. That would be to neglect the value judgment he had to make. The value-factual distinction conceptually enables us to see that he had more to do than a factual scientific study, so the distinction can be helpful.   
当美国国会在20世纪60年代中期要求对美国的教育机会平等程度进行研究时，它所要求的不仅仅是一项科学研究。负责这项经典研究的社会学家詹姆斯·科尔曼需要对什么算作教育机会平等进行价值判断。危险在于认为他所要做的只是一项事实性的科学研究，仅仅使用直接观察、概括和推理来得出最佳解释。这将忽视他所必须做出的价值判断。价值与事实的区分在概念上使我们能够看到，他所要做的不仅仅是一项事实性的科学研究，因此这个区分是有帮助的。­ity of educational opportunity. The danger is to think that all he had to do was a fac­tual, scientific study, using only direct observation, generalization, and inference to best explanation. That would be to neglect the value judgment he had

In drawing this contrast between value and factual statements, I do not mean to imply that we can never be confident about value statements. We can be quite con­fident about some value statements, such as “It was absolutely wrong for the Nazis to kill six million Jews.”

­ments that I promote a factual statement-value statement distinction, It is partly because we can justifiably be quite confident about some value judgments that I promote a factual statement-value statement distinction, and avoid using the oft-promoted fact-opinion distinction. The fact-opinion distinction suggests that whatever is not factual is mere opinion.1 But my statement about the Nazis, though not factual, is not merely an opinion. If you think otherwise, then we are both in trouble, and I hope that you will read the discussion of relativism later in the chapter.  
在对价值和事实陈述进行对比时，我并不是要暗示我们永远不能对价值陈述感到自信。我们对某些价值陈述可以非常自信，比如纳粹杀害六百万犹太人是绝对错误的。正是因为我们可以有正当理由对某些价值判断非常自信，我才提倡事实陈述-价值陈述的区分，并避免使用常被提倡的事实-观点区分。事实-观点区分暗示了任何非事实的东西都只是观点。但是，我对纳粹的陈述虽然不是事实，却不仅仅是一个观点。如果你持有不同意见，那么我们都会陷入困境，我希望你能阅读本章后面关于相对主义的讨论。­gests that whatever is not factual is mere opinion.

­tion to how to write a defense of a value statement. Do not expect neat automatic formulas that generate answers, because there are none here. Instead, expect only some rough guidelines and warnings. Your own judgment is crucial here.This chapter deals with how to decide about value statements, with some attention to how to write a defense of a value statement. Do not expect neat automatic formulas that generate answers, because there are none here. Instead, expect only some rough guidelines and warnings. Your own judgment is crucial here.  
本章讨论如何决定价值观陈述，并对如何撰写对价值观陈述的辩护进行了一些关注。不要期望能够生成答案的整洁自动公式，因为这里没有这样的公式。相反，只能期望一些大致的指导和警示。在这里，你自己的判断至关重要。

Arriving at and judging value statements comes directly under the /in FRISCO, although the situation (S) is always important, as is clarity (C). Let us start by looking at one kind of inference to value statements, loose derivation.  
到达和判断价值陈述直接属于/在FRISCO之下，尽管情况（S）总是重要的，清晰度（C）也是如此。让我们首先看一种推论到价值陈述的方式，宽松推导。­ing

Loose Derivation from  
松散推导自

Principles and Factual Statements  
原则和事实陈述

­tion was that Arlene had the readily available alternative of fleeing into her parents’ room, if Al had, as she claimed, threatened to kill her. (We believed that she would have been safe in her parents’ room.) One value principle that we assumed was that it is wrong to stab another person if the person is not threatening you. Another value principle we assumed was that it is wrong to stab a person who is threatening you if In deciding that Arlene was not justified in using the force she used, we relied on some value principles and the factual situation. The key element in the factual situation was that Arlene had the readily available alternative of fleeing into her parents’ room, if Al had, as she claimed, threatened to kill her. (We believed that she would have been safe in her parents’ room.) One value principle that we assumed was that it is wrong to stab another person if the person is not threatening you. Another value principle we assumed was that it is wrong to stab a person who is threatening you if there is a peaceful alternative readily available.  
在确定阿琳没有理由使用她所使用的武力时，我们依赖于一些价值原则和事实情况。事实情况中的关键因素是，如果阿尔娜声称威胁要杀死她，她有一个容易获得的选择，就是逃到她父母的房间。（我们相信她在父母的房间里会安全。）我们假设的一个价值原则是，如果一个人没有威胁到你，刺伤对方是错误的。我们假设的另一个价值原则是，如果有一个和平的替代选择容易获得，刺伤威胁你的人也是错误的。

More explicitly, the reasoning went as follows:  
更明确地说，推理过程如下：

Example 11:1

Either (1) he threatened her or (2) he did not threaten her. Consider each alternative:  
要么（1）他威胁了她，要么（2）他没有威胁她。考虑每个选择：

1. Incidentally, an alternative to the factual-value distinction is a three-way distinction among fact, opinion, and reasoned judgment. A third alternative is the distinction between observation and conclusion. The popular fact-opinion distinction seems to incorporate and confuse all three of these distinctions, all of which seem worthwhile when separated from each other. When combined, they invite us to denigrate all value judgments (as mere opinions), to label as facts propositions such as “The earth is flat (because it is factual), and to label as opinions propositions such as Boyle’s law or the law of gravity (because they are not observation statements). For an interesting discussion of the fact-opinion distinction, see Perry Weddle’s “Fact from Opinion,” Informal Logic, 7 (1985), 19-26.   
顺便说一句，与事实价值区分相对的另一种选择是将事实、观点和理性判断区分为三种方式。第三种选择是观察和结论之间的区别。流行的事实观点区分似乎包含并混淆了这三种区分，而这三种区分在彼此分开时似乎都是有价值的。当它们结合在一起时，它们引导我们贬低所有的价值判断（仅仅是意见），将像“地球是平的”这样的主张标记为事实（因为它是事实），将像“波义尔定律”或“引力定律”这样的主张标记为意见（因为它们不是观察陈述）。有关事实观点区分的有趣讨论，请参阅佩里·韦德尔的《事实与观点》，非正式逻辑，7（1985），19-26。­

1. Under the assumption that he threatened her:  
   在他威胁她的假设下：
2. Al was threatening Arlene.  
   阿尔威胁阿琳。
3. It is wrong to stab a person who is threatening you if there is a peaceful alternative readily available.  
   如果有一个和平的替代方案可以轻易获得，刺伤威胁你的人是错误的。­
4. Arlene had the readily available peaceful alternative of fleeing into her parents’ room.  
   Arlene有一个随时可用的和平选择，就是逃到她父母的房间。
5. Therefore, it was wrong for Arlene to stab Al.  
   因此，Arlene刺伤Al是错误的。
6. Under the assumption that he did not threaten her:  
   在他没有威胁她的假设下
7. Al was not threatening Arlene.  
   阿尔没有威胁阿琳。
8. It is wrong to stab another person if the person is not threatening you. c. Therefore, it was wrong for Arlene to stab Al.  
   如果对方没有威胁你，刺伤他人是错误的。因此，阿琳刺伤艾尔是错误的。

Under each alternative, we reached the conclusion that it was wrong for Arlene to stab Al. Although the state had not proven beyond a reasonable doubt that AI had not threatened to kill Arlene, we concluded that under either alternative (that is, whether he threatened her or not), it was wrong for Arlene to kill Al, and thus that she was not justified in using the force she used.  
在每个选择下，我们得出结论，Arlene刺伤Al是错误的。尽管州方没有以合理怀疑的标准证明AI没有威胁要杀死Arlene，但我们得出结论，在任何一种情况下（即无论他是否威胁了她），Arlene杀死Al都是错误的，因此她在使用武力时没有合理的理由。

­Under either alternative, the conclusion was derived. Because the two alternatives exhaust the possibilities, the conclusion was apparently established (although there is an assumption problem, to be discussed shortly).  
在任何一种选择下，都得出了结论。因为这两种选择穷尽了可能性，所以结论显然被确立了（尽管存在一个假设问题，稍后将讨论）。

The reasoning process here is enough like deduction for us to call it loose derivation. Note two ways in which this reasoning process is loose:  
这里的推理过程足够像演绎，我们可以称之为松散的推导。注意这个推理过程松散的两个方面：*­*

­Most importantly, the general value principles are not to be interpreted as universal requirements. Consider one of our principles, “It is wrong to stab another person if the person is not threatening you.” There certainly are exceptions to this principle. It might be all right to stab another person to protect a baby, or to protect a whole set of people from torture or death, even though you are not threatened. Consider the second principle, “It is wrong to stab a person who is threatening you if there is a peaceful alternative readily available.” There are exceptions to this one as well. It might be that the peaceful alternative would result in great phvsical damage or risk of physical damage to the one being threatened, such as walking on the ledge of a tall building. Or it might be that the person who is threatening you is ultimately trying to get past you to assassinate the prime minister, or the president, and the only way to stop the person is by stabbing.  
最重要的是，一般的价值原则不应被解释为普遍要求。考虑我们的一个原则，如果一个人没有威胁到你，刺伤他是错误的。当然，这个原则也有例外情况。为了保护一个婴儿或者一群人免受折磨或死亡的威胁，刺伤另一个人可能是可以接受的，即使你没有受到威胁。再考虑第二个原则，如果有一个和平的替代方案可行，刺伤威胁你的人是错误的。这个原则也有例外情况。可能和平的替代方案会导致对被威胁者造成巨大的身体伤害或者危险，比如在高楼上走在窄窄的窗台上。或者可能威胁你的人最终是想要越过你去暗杀总理或者总统，而唯一的阻止方法就是刺伤他。­­

Value principles generally have so many exceptions that one cannot specify them all in advance. If we could specify them, we would add a description of the exceptions to the value principles. Instead, the thing to do is to keep in mind that there might be exceptions to the principles and that particular applications of a principle might not actually be justified, even though the principle, as a broad general principle, is jus­tified. One way to keep this sort of thing in mind is, after vou assert a principle, to say under your breath, “unless there is a (really) good reason to believe or do other­wise in the specific situation.”

Just to make the point more firm, let us consider the value principle “One should not lie” or, if there is doubt about the meaning of the word *lie,* “One should try to tell the truth.” This is a good principle, but there are exceptions. Suppose that an anxious mother wants to know whether her son, who died on a battlefield, diedpainlessly. Suppose further that he actually had an extended period of agony before death. Should you tell the mother the truth? At least many people would say that you should lie in this case; they may also say, if asked in another context about lying in general, that lying is wrong. The best way to resolve this apparent inconsistency is to understand that people have an unspoken qualification to the principle, “unless there is a (really) good reason to believe or do otherwise in the specific situation.” (Sometimes the shorter phrase *prima facie*—meaning *on the face of it*—is used, as in “Lying is *prim a facie* wrong.”)

­A second source of looseness in the reasoning results from a degree of vagueness in the terms used. The terms peaceful alternative, threaten, and readily available are vague. Would making a verbal threat against an assailant be a peaceful alternative? Is it threatening for someone to say, “I’m going to frighten you?” Is jumping out the window of a one-story house a readily available alternative? A two-story house? The words in our talk about values are often vague, making application to cases difficult. The neatness of ideal deduction eludes us in the area of values, even though the strategies of deduction are often useful.  
价值原则通常有很多例外情况，无法事先全部具体说明。如果我们能够具体说明，我们会在价值原则中添加例外的描述。相反，我们需要记住原则可能存在例外，并且某些原则的具体应用可能并不合理，尽管作为一个广泛的原则，它是合理的。记住这种情况的一种方法是，在你断言一个原则之后，低声说出来，除非在具体情况下有一个（真正）充分的理由相信或者做出不同的行动。为了更加明确这一点，让我们考虑价值原则：不撒谎，或者如果对“撒谎”一词的含义存在疑问，应该尽量说实话。这是一个好的原则，但是也有例外情况。假设一个焦虑的母亲想知道她在战场上去世的儿子是否痛苦地死去。进一步假设他在死亡前经历了长时间的痛苦。你应该告诉母亲实话吗？至少很多人会说，在这种情况下你应该撒谎；如果在另一个情境中被问到关于撒谎的一般问题，他们也可能说撒谎是错误的。解决这种明显的不一致的最好方法是理解人们对原则有一个未明示的限制，除非在具体情况下有一个（真正）充分的理由相信或者做出不同的行动。（有时候也会使用更短的短语“prima facie”，意思是在表面上，比如说撒谎是 prima facie 错误。）推理中的第二个松散性来源于所使用的术语的模糊性。和平的替代方案、威胁和容易获得这些词都是模糊的。对于某人来说，对袭击者进行口头威胁是否是和平的替代方案？某人说“我要吓唬你”是否构成威胁？从一层楼的房子跳出窗户是否是一个容易获得的替代方案？那么两层楼的房子呢？我们在谈论价值观时使用的词汇经常是模糊的，这使得应用到具体案例中变得困难。尽管演绎推理的策略通常很有用，但在价值领域中，理想的演绎的整洁性却逃避了我们。

Summary  
摘要

A statement of the worth (positive or negative) of some thing or action is a value statement. Value statements differ from factual statements. Factual statements (which can be specific, general, and even theoretical) attempt to describe, but not evaluate, the worth of a thing or action. The distinction is not a precise one, although it is useful.  
某物或行为的价值（正面或负面）的陈述是一个价值陈述。价值陈述与事实陈述不同。事实陈述（可以是具体的、一般的，甚至是理论的）试图描述而不评估某物或行为的价值。这种区别并不是非常明确的，尽管它是有用的。

­tion, although there tends to be more looseness when dealing with values. In partic­ular, value principles generally have an implied qualification, “unless there is a (really) good reason to believe or do otherwise in the specific situation,” and terms in value statements are often vague enough to require a judgment about whether and how they apply.Both kinds of statement can be the conclusions of a process similar to deduction, although there tends to be more looseness when dealing with values. In particular, value principles generally have an implied qualification, “unless there is a (really) good reason to believe or do otherwise in the specific situation,” and terms in value statements are often vague enough to require a judgment about whether and how they apply.  
两种类型的陈述都可以作为类似演绎的过程的结论，尽管在处理价值观时往往更加灵活。特别是，价值原则通常具有暗含的限定条件，除非在特定情况下有一个（真正）充分的理由相信或采取其他行动，并且价值陈述中的术语通常足够模糊，需要对其是否以及如何适用进行判断。

­explanation procedures and are not merely reports of direct observation. Value ques­tions cannot be settled by scientific research only, although scientific research can contribute. These facts, and the apparent difference in the kinds of things asserted by the two kinds of statements, are good reasons to make the distinction between fac­tual and value statements.Value statements cannot serve as hypotheses to be evaluated by bestexplanation procedures and are not merely reports of direct observation. Value questions cannot be settled by scientific research only, although scientific research can contribute. These facts, and the apparent difference in the kinds of things asserted by the two kinds of statements, are good reasons to make the distinction between factual and value statements.  
价值陈述不能作为假设来通过最佳解释程序进行评估，也不仅仅是直接观察的报告。价值问题不能仅通过科学研究来解决，尽管科学研究可以提供贡献。这些事实以及两种陈述所断言的事物类型之间的明显差异，是区分事实和价值陈述的好理由。

Check-Up 11A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**11:1 One way of defending value statements is by showing that they can be loosely deduced from an acceptable principle and one or more facts.   
11:1 保护价值陈述的一种方法是通过展示它们可以从可接受的原则和一个或多个事实中松散推导出来。**

**11:2 One way of defending a value statement is by showing that it can account for the facts and that alternative possible explanations of these facts are inconsistent with some facts.  
11:2 辩护一个价值陈述的一种方式是通过展示它能解释这些事实，并且对这些事实的替代可能解释与某些事实不一致。**

**11:3 Typically, a good value principle has no exceptions.  
11:3 通常，一个好的价值原则没有例外。**

**11:4 Factual statements are all true.  
11:4 事实陈述都是真实的。**

11:5 Factual statements attempt to describe, sometimes simply, sometimes theoretically.  
11:5 事实陈述试图描述，有时简单，有时理论上。

Short Answer  
简答题

Decide whether each of the following statements is a factual or a value statement.  
决定以下每个陈述是事实陈述还是价值陈述。

Assume that the context is a normal one.  
假设上下文是正常的。

**11:6 The United States should have stayed out of World War I.  
11:6 美国应该远离第一次世界大战。**

11:7 The United States entered World War I.  
11:7 美国参加了第一次世界大战。

**11:8 The United States stayed out of World War I.  
11:8 美国没有参与第一次世界大战。**

**11:9 It is wrong to give information to an authority if it might hurt a friend.  
11:9 如果向当局提供信息可能会伤害朋友是错误的。**

**11:10 You should do unto others as you would have them do unto you.  
11:10 你应该对别人如同你希望别人对你一样。**

**11:11 Students are reluctant to tell a teacher if a friend cheats.  
11:11 学生不愿意告诉老师朋友作弊。**

**11:12 The basic human dignity of every person should be respected.  
每个人的基本人类尊严应该受到尊重。**

**11:13 All is fair in love and war.  
爱情和战争中，一切皆公平。**

More Short Answer  
更多简短回答

For each of the following arguments, (a) identify and state the conclusion. Then (b) tell whether the conclusion follows from the reasons (assuming for each case that it is not an exception to the value principle). In each case, defend your decision by using Euler circle diagrams, propositional logic principles, or both.  
对于以下每个论证，(a) 确定并陈述结论。然后 (b) 告诉结论是否根据原因得出（假设每种情况都不是价值原则的例外）。在每种情况下，使用欧拉圆圈图、命题逻辑原理或两者来支持你的决定。

**11:14 The United States should have stayed out of wars that did not strongly affect its basic interests. World War I did not affect the basic interests of the United States. Therefore, the United States should have stayed out of World War I.  
11:14 美国应该远离那些对其基本利益没有强烈影响的战争。第一次世界大战并没有影响到美国的基本利益。因此，美国应该远离第一次世界大战。**

**11:15 If you tell Martine that Karl is not interested in a reconciliation, then you would be lying to her, even though you believe that she is better off without Karl. If you lie to her, then you will not be respecting her basic human dignity. Therefore, you should not tell her that Karl is not interested in a reconciliation. The basic human dignity of every person should be respected.  
11:15 如果你告诉玛丁娜卡尔对和解不感兴趣，那么你会对她撒谎，即使你相信她没有卡尔会过得更好。如果你对她撒谎，那么你将不尊重她的基本人类尊严。因此，你不应该告诉她卡尔对和解不感兴趣。每个人的基本人类尊严应该受到尊重。**

**11:16 My friend cheated on a test. It would be wrong to tell the teacher about it because it would be wrong to give this information to the teacher, if it might hurt my friend. Telling the teacher about my friend’s cheating on the test might hurt my fidend.  
11:16 我的朋友在考试中作弊。告诉老师这件事是不对的，因为把这个信息告诉老师可能会伤害我的朋友。告诉老师我的朋友在考试中作弊可能会伤害我的朋友。**

**11:17 Michael’s intercepting and destroying Bill’s love letter to Juanita was unethical. I realize that Michael is in love with Juanita, but to interfere with someone’s attempt to communicate with a loved one is to fail to show respect for her basic human dignity. It is wrong not to show respect for the basic human dignity of every person.   
11:17迈克尔截取并销毁比尔写给胡安妮塔的情书是不道德的。我意识到迈克尔爱上了胡安妮塔，但干涉他人与所爱之人交流的尝试，是对她基本人类尊严的不尊重。不尊重每个人的基本人类尊严是错误的。**

**11:18 Michael’s intercepting and destroying Bill’s love letter to Juanita was not unethical. All’s fair in love and war, and Michael is in love with Juanita.  
11:18迈克尔拦截并销毁比尔写给胡安妮塔的情书并不违背道德。在爱情和战争中，一切皆公平，而迈克尔爱着胡安妮塔。**

Facts About the Past; Future Consequences  
过去的事实；未来的后果

It is surprising how often value reasoning goes wrong because the facts are ignored or because the alleged tacts are not really tacts. In our reasoning to the conclusion that Arlene was not justified in using the force she used, many tacts were important, and two predominantly tactual matters were crucial: Did Al threaten to kill Arlene (more specifically, did he say, “Arlene, Γm going to kill you,” as she claimed), and was there a peaceful alternative for her to pursue?  
令人惊讶的是，价值推理经常出错，因为事实被忽视了，或者所谓的事实实际上并不是事实。在我们推理出Arlene在使用武力时没有正当理由的结论时，许多事实是重要的，而两个主要的事实问题至关重要：Al是否威胁要杀死Arlene（更具体地说，他是否像她声称的那样说：“Arlene，我要杀了你”），她是否有和平的替代方案可以追求？

Factual Claims  
事实性声明

If he had so threatened, then on grounds of self-defense, she might have been justified in using the force she did (neglecting the peaceful alternative question for the time being). It he did not threaten her, then, assuming that she had no other justifying circumstances, she was not justified in using the force she used. Because the defense attorney had offered no other justifying circumstances, because it was his job to do whatever he could on her behalf, and because he seemed very competent, we had a right to assume that there were no other justifying circumstances. Therefore, the question of whether he threatened her was an important one.  
如果他威胁过，那么基于自卫的理由，她使用的力量可能是合理的（暂时忽略和平替代的问题）。如果他没有威胁她，那么假设她没有其他合理的情况，她使用的力量是不合理的。因为辩护律师没有提供其他合理的情况，因为他的工作是尽力代表她，而且他似乎非常能干，我们有理由假设没有其他合理的情况。因此，他是否威胁她是一个重要的问题。­fied in using the force she did (neglecting the peaceful alternative question for the time being). It he did not threaten her, then, assuming that she had no ­ing circumstances, she was not justified in using the force she used. Because the defense attorney had offered no other justifying circumstances, because it was his job

Unfortunately, this factual question could not be settled to our satisfaction because the only eyewitness source of information (Arlene) had a strong conflict of interest. Because of this conflict of interest, her testimony on the matter could not settle it for us. But he might have threatened her, and of course he might not have done so. This important factual matter could not be resolved satisfactorily.  
很遗憾，这个事实性问题无法得到我们满意的解决，因为唯一的目击者信息来源（Arlene）存在严重的利益冲突。由于这个利益冲突，她对这个问题的证词无法为我们解决。但他可能威胁过她，当然也可能没有。这个重要的事实问题无法得到令人满意的解决。

Unstated Facts  
未明示的事实

For a long time, although the fact that she had a peaceful alternative was staring us in the face, we jurors ignored it. Facts do not advertise themselves as relevant, and thev often remain not only ignored, but unstated. Nobody had stated for us the fact that she had a peaceful alternative. The prosecuting attorney might have done so, but he did not. For a long time, none of the jurors realized that this was a fact and that it was relevant. When one of the jurors realized and stated this fact, the rest of us immediately recognized it as a fact, a fact that was quite important. We then used this fact to reason to the conclusion that she was not justified in using the force she used.  
很长一段时间，尽管她有一个和平的选择这个事实就摆在我们面前，但我们陪审员却忽视了它。事实并不会自己宣传自己的相关性，它们经常被忽视甚至没有被提及。没有人告诉我们她有一个和平的选择这个事实。检察官本可以这样做，但他没有。很长一段时间，没有一个陪审员意识到这是一个事实，并且它是相关的。当一个陪审员意识到并陈述了这个事实时，我们其他人立即认识到它是一个事实，一个相当重要的事实。然后我们利用这个事实推理出她使用的武力是不合理的结论。

­iar enough with the situation to be sensitive to facts that have not even been formulated. Unformulated facts, like the fact that she had a peaceful alternative, are often ignored.Because of the importance of facts in making value judgments, it is crucial to make sure that we have the facts. Misinformation can do much harm. It is important to be familiar enough with the situation to be sensitive to facts that have not even been formulated. Unformulated facts, like the fact that she had a peaceful alternative, are often ignored.  
由于事实在做出价值判断时的重要性，确保我们拥有事实是至关重要的。错误信息可能会造成很大的伤害。熟悉情况，对尚未形成的事实敏感是很重要的。未形成的事实，比如她有一个和平的选择这个事实，经常被忽视。

Consequences  
后果

­It is often helpful to force ourselves to think about the probable or possible future consequences of accepting a value judgment. Ulaιms about what the future conse quences will be are factual claims, so here we have another way in which facts can be important. But it is generally more difficult to be sure about factual claims about the future than factual claims about the past, so one must be especially careful here. Think of the times that you have confidendy predicted what would result if a particular course of action were followed—and been wrong. Have you ever decided it would be good to offer a loan to a friend, predicting that the friendship would then be even firmer, and had it turn out otherwise? Have you ever decided that you should not tell a friend the whole truth about your feelings, thinking that your relationship would otherwise be damaged, and discovered otherwise? It can happen.  
强迫自己思考接受价值判断的可能或可能的未来后果通常是有帮助的。关于未来后果的断言是事实性主张，所以这里我们又有了另一种事实重要的方式。但是，相比于关于过去的事实性主张，关于未来的事实性主张通常更难确定，所以在这里必须特别小心。想想你曾经自信地预测过如果采取某种行动会产生什么结果，但最后却错了。你是否曾经决定向朋友提供贷款，预测这样做会使友谊更加牢固，结果却不是这样？你是否曾经决定不告诉朋友你的真实感受，认为这样做会损害你们的关系，结果却发现不是这样？这种情况是可能发生的。­ular course of action were followed—and been wrong. Have you ever decided it would be good to offer a loan to a friend, predicting that the friendship would then be even firmer, and had it turn out otherwise? Have you ever decided that you should not tell a friend the whole truth about your feelings, thinking that your relationship would otherwise be damaged, and discovered otherwise? It can happen.

­quences of accepting a judgment about what is a good thing to do or a good way to be. The consequences are usually relevant. Suppose the question is whether it is a good idea to allow dogs to run unleashed in the park. One of the bad consequences of not allowing such freedom is that the dogs in the area will be less likely to get exer­cise and self-expression. Some good consequences of not allowing the freedom are fewer dog fights, and reduced frightening of people who are afraid of dogs. These consequences (and others) should be considered in deciding whether it is a good idea However, it is still important to try to look at the probable or possible consequences of accepting a judgment about what is a good thing to do or a good way to be. The consequences are usually relevant. Suppose the question is whether it is a good idea to allow dogs to run unleashed in the park. One of the bad consequences of not allowing such freedom is that the dogs in the area will be less likely to get exercise and self-expression. Some good consequences of not allowing the freedom are fewer dog fights, and reduced frightening of people who are afraid of dogs. These consequences (and others) should be considered in deciding whether it is a good idea to allow dogs to run unleashed in the park. Because there are good and bad consequences, just looking at the consequences and judging them separately are not enough. The good and bad ones must somehow be weighed against each other. We shall return to this topic shortly.  
然而，仍然很重要的是尝试着去看待接受一个关于什么是好事或好的方式的判断的可能或可能的后果。后果通常是相关的。假设问题是是否允许狗在公园里自由奔跑是个好主意。不允许这种自由的一个坏后果是该地区的狗更不容易得到锻炼和自我表达。不允许这种自由的一些好后果是减少狗之间的打斗，减少那些害怕狗的人的恐惧。在决定是否允许狗在公园里自由奔跑时，应该考虑这些后果（和其他后果）。因为有好的和坏的后果，仅仅看后果并单独判断是不够的。好的和坏的后果必须以某种方式相互权衡。我们将很快回到这个话题。­quences, just looking at the consequences and judging them separately are not enough. The good and bad ones must somehow be weighed against each other. We shall return to this topic shortly.

Sometimes, consequences and situations can arise of which the value is uncertain: They do not seem to come under any value principle we already have, or they contain elements that do not come under any value principle we have. Consider dog fights.  
有时候，后果和情况可能会出现一些价值不确定的情况：它们似乎不符合我们已有的任何价值原则，或者它们包含的元素不符合我们已有的任何价值原则。考虑一下狗斗。

­ered dog fights. Then I witnessed several and decided simply on the basis of the full presentation of the details of these dog fights that they are not a good thing. This is the way that some of our justified value judgments are formed. We consider in detail one or more examples of a type of situation, are sensitive to them, probably reflect on them, and form a judgment about their worth. This is the way I came to object to dog fights.There was a time in my life when I knew of no justified value principle that covered dog fights. Then I witnessed several and decided simply on the basis of the full presentation of the details of these dog fights that they are not a good thing. This is the way that some of our justified value judgments are formed. We consider in detail one or more examples of a type of situation, are sensitive to them, probably reflect on them, and form a judgment about their worth. This is the way I came to object to dog fights.  
在我生命中的某个时刻，我对于狗斗并没有一个合理的价值原则。然后我目睹了几场狗斗，仅仅基于对这些狗斗的详细呈现，我决定它们并不是一件好事。这就是我们一些合理的价值判断形成的方式。我们详细考虑一种或多种情况的例子，对它们敏感，可能会反思，并对它们的价值形成判断。这就是我反对狗斗的方式。

I have never seen a cockfight, and suspect that my judgment about them would be the same, but I cannot be confident about that without a presentation of details. My imagination and knowledge of the kinds of things that would happen are just not good enough. The vivid depiction of details is important to this way of forming values.  
我从未见过斗鸡比赛，怀疑我的判断会是一样的，但如果没有详细介绍，我无法对此有信心。我的想象力和对可能发生的事情的了解还不够好。生动描述细节对于形成价值观的方式很重要。

­quence, given that it was made perceptively and sensitively with a clear idea of the details of the consequence? No guarantee is possible. Reasonable disagreements sometimes develop. But this is the best we can do when there are no acceptable value principles to guide us, or when acceptable value principles are in conflict and there is no higher-level acceptable value principle or authority to resolve the issue.What assurance do we have of the correctness of a judgment about a consequence, given that it was made perceptively and sensitively with a clear idea of the details of the consequence? No guarantee is possible. Reasonable disagreements sometimes develop. But this is the best we can do when there are no acceptable value principles to guide us, or when acceptable value principles are in conflict and there is no higher-level acceptable value principle or authority to resolve the issue.  
对于一个关于后果的判断，我们如何确保其正确性，尤其是在它是基于感知和敏感地对后果细节有清晰理解的情况下？没有任何保证是可能的。合理的分歧有时会出现。但当没有可接受的价值原则来指导我们，或者当可接受的价值原则发生冲突且没有更高级别的可接受的价值原则或权威来解决问题时，这是我们能做的最好的。

Furthermore, even when acceptable value principles or higher-level principles are there to guide us, it is a good idea to look at the consequences of following them. The case under consideration might be an exception to the principle. Even though it is not possible to guarantee a correct judgment as a result, in the long run, your judgments will probably be improved by your attending to both principles and consequences.   
此外，即使有可接受的价值原则或更高级的原则来指导我们，审视遵循它们的后果也是一个好主意。所考虑的情况可能是原则的例外。尽管无法保证结果能得出正确的判断，但从长远来看，同时关注原则和后果可能会提高你的判断能力。

Consequences of the Jurors' Judgments  
陪审团的判决后果

­sequence of the judgment that Arlene was not justified in using the force she used was, if the other conditions were satisfied, that she would serve a term in prison. Our society has assigned to the legislature and the judicial system the job of deciding whether this consequence is appropriate. For us to take this consequence into account in deciding whether she was justified would have been to take over the work that is assigned to the legislature and the judges. We were told This jury was not expected to apply the method of looking at the consequences (for the defendant) of the particular judgment I have been discussing. That is, one consequence of the judgment that Arlene was not justified in using the force she used was, if the other conditions were satisfied, that she would serve a term in prison. Our society has assigned to the legislature and the judicial system the job of deciding whether this consequence is appropriate. For us to take this consequence into account in deciding whether she was justified would have been to take over the work that is assigned to the legislature and the judges. We were told not to take it into account in making our decision.  
这个陪审团并不需要运用我所讨论的方法来考虑（对被告）的后果。也就是说，如果满足了其他条件，判决是阿琳没有正当理由使用她使用的武力，那么其中一个后果就是她将在监狱中服刑。我们的社会将决定这个后果是否适当的工作交给了立法机构和司法系统。如果我们在决定她是否有正当理由时考虑这个后果，那就等于接管了立法机构和法官的工作。我们被告知在做决定时不要考虑这个后果。

­ing the principle that it is wrong to hurt people severely who threaten your life, when there is a peaceful alternative. We might have imagined the probable consequence (assuming other factors remain the same) that there would continue to be men bul­lying and threatening physically weaker women. We might also have imagined However, we could have considered the consequences of the value principle we assumed about peaceful alternatives if we had identified and wondered about this assumption. That is, we could have imagined the consequences for society of holding the principle that it is wrong to hurt people severely who threaten your life, when there is a peaceful alternative. We might have imagined the probable consequence (assuming other factors remain the same) that there would continue to be men bullying and threatening physically weaker women. We might also have imagined a set of people (mothers, sisters, brothers, fathers, and children of a person who threatens, and might otherwise be severely hurt) who would be happier without the injury or death. In that situation in the jury room, we did not imagine these consequences. As soon as the point was made that she had a peaceful alternative, we immediately felt that we knew that she was not justified in using the force she used.  
然而，如果我们对我们所假设的和平替代方案的价值原则考虑到后果，我们本可以考虑到这个假设。也就是说，我们本可以想象一下，当存在和平替代方案时，持有这样一个原则——严重伤害威胁你生命的人是错误的——对社会的后果会是什么。我们本可以想象到，如果其他因素保持不变的话，会继续有男性欺负和威胁身体较弱的女性。我们也可以想象到一群人（威胁者的母亲、姐妹、兄弟、父亲和孩子，他们本可以避免受到严重伤害或死亡）会因此而更加幸福。然而，在陪审团室里，我们没有想象到这些后果。当有人提出她有和平替代方案时，我们立刻感到我们知道她使用的武力是不合理的。

Some associates2 have, as I noted earlier, challenged us for not having made the assumption explicit and for accepting it without question. What do you think?  
一些合作伙伴2，正如我之前提到的，对我们没有明确假设并且毫无疑问地接受它提出了质疑。你认为呢？

Weighing Reasons  
权衡理由

When we have evaluated each of the consequences and have applied principles directlv, we will probably find that we have some reasons in support of a conclusion (pro reasons) and some against (con reasons)—and some in between. How do we decide?  
当我们评估了每个后果并直接应用原则后，我们可能会发现我们有一些支持结论的理由（正面理由），也有一些反对的理由（反面理由）-还有一些中间的理由。我们如何决定？

Decision Theory  
决策理论

Elaborate methods have been worked out to try to give guidance in answering such questions, often going under the name *decision theory.* These methods ask us to assign numbers, often amounts of money, to each consequence, viewed as a value or disvalue (a negative value). Thus, for example, we would have to assign a numerical value in terms of monev (or some other unit) to the good health of dogs and to human fear. This sort of thing I feel we cannot do, but if you feel that we can, then you might well consult a text about decision theory, which should include calculating and com­paring expected values of alternative courses of action. There is a vast literature on the topic, but I do not go into it here because I have never felt able to assign num-

2. Including Professor Anita Silvers of San Francisco State University, who was the first to point out this assumption to me.   
已经制定了详细的方法来尝试给出回答这些问题的指导，通常被称为决策理论。这些方法要求我们给每个后果分配一个数字，通常是金额，视为价值或贬值（负值）。因此，例如，我们必须为狗的健康和人类的恐惧分配一个以货币（或其他单位）表示的数值。我觉得这种事情我们做不到，但如果你觉得我们可以，那么你可能要查阅一本关于决策理论的书籍，其中应该包括计算和比较备选行动预期价值的内容。关于这个主题有大量的文献，但我在这里不深入讨论，因为我从未能够分配数字，包括旧金山州立大学的安妮塔·希尔弗斯教授，她是第一个向我指出这个假设的人。

bers to things that some people value very highly (such as clean air, friendship, love, and self-respect) and to value principles themselves, such as “Lying is wrong.”

When it is possible to assign numerical values to all the important factors and to estimate the probability that each will occur, then decision theory can be useful. But beware: It is tempting to neglect factors to which we cannot assign a numerical value, in order to fit a decision-theory system.  
将其分配给一些人非常重视的事物（如清洁的空气，友谊，爱和自尊）以及重视原则本身，例如说谎是错误的。当我们能够为所有重要因素分配数值，并估计每个因素发生的概率时，决策理论就会有用。但要小心：为了适应决策理论系统，我们很容易忽视那些无法分配数值的因素。

The Ben Franklin System  
本富兰克林系统

For most cases that you actually do face, I recommend instead a simple method suggested bv Ben Franklin. It does not generate a decision, but can be an aid to your considering and weighing the pro and con reasons.  
对于您实际面对的大多数情况，我建议您采用本·富兰克林提出的简单方法。它不会产生决策，但可以帮助您考虑和权衡正反理由。­gested bv Ben Franklin. It does not generate a decision, but can be an aid to your considering and weighing the pro and con reasons.

List on one side of a piece of paper all the positive aspects of some value choice and on the other side all the negative aspects. If you find an aspect on one side that is of about equal importance to an aspect on the other side, then cross them both off. If an aspect on one side seems roughly as important as two on the other side, then cross off the one and the two. When one side has something left and the other side has nothing left, then you should consider choosing the side with something left; how strongly depends on how much is left. I have done this sort of thing in Table 11.1, numbering each reason. In preparing the table, I did not cross out reasons for fear of confusing you. Instead I shall tell you in successive steps what I did.  
在一张纸的一边列出某个价值选择的所有积极方面，在另一边列出所有消极方面。如果你发现一边的一个方面与另一边的一个方面的重要性大致相等，那么将它们都划掉。如果一边的一个方面似乎与另一边的两个方面的重要性大致相等，那么划掉一个和两个。当一边还有剩下的东西而另一边没有剩下的东西时，你应该考虑选择还有剩下的那一边；具体取决于剩下的东西有多少。我在表11.1中做过这样的事情，给每个理由编号。在准备表格时，我没有划掉理由，以免让你困惑。相反，我将告诉你我是如何逐步进行的。

The various stages in my thinking follow.  
我的思维经历了各个阶段。

­Assuming that the focus is clear (which it is in this case), make sure you consider the alternative ways of handling the problem. The opposite of the conclusion being considered is to allow dogs the free run of the park. Because this is in effect the con side of the argument, this alternative is being considered already. Two other alternatives have occurred to me (listed under 6): to prohibit dogs completely or to license only certain dogs to be in the park without being leashed. These special dogs would have to pass a test and maintain good behavior in the park, just as automobile drivers do in order to maintain their driving rights. The first of these two alternatives seems overly severe and the other seems administratively burdensome and unworkable, so I reject them. This rejection gives support to both alternatives because the elimination of competitors generally gives at least some support to the remaining possibilities. So I put these two rejected alternatives in the middle to show that their rejection docs not affect the balance. Next, I concentrate on the remaining pro and con sides of the proposed conclusion.  
假设焦点明确（在这种情况下是明确的），确保考虑处理问题的其他方式。被考虑的结论的相反面是允许狗在公园自由奔跑。因为这实际上是辩论的反方面，所以这个替代方案已经被考虑过了。我想到了另外两种替代方案（在6下面列出）：完全禁止狗进入公园或者只许可特定的狗在公园内不用拴绳。这些特殊的狗需要通过测试并在公园内保持良好行为，就像汽车驾驶员为了保持驾驶权利而需要做的一样。这两个替代方案中，第一个似乎过于严厉，而另一个在行政上会带来负担并且不可行，所以我拒绝了它们。这个拒绝对这两个替代方案都提供了支持，因为消除竞争对剩下的可能性至少提供了一些支持。所以我把这两个被拒绝的替代方案放在中间，以显示它们的拒绝不会影响平衡。接下来，我集中关注所提出结论的正反两方面。­able, so I reject them. This rejection gives support to both alternatives because the elimination of competitors generally gives at least some support to the remaining pos­sibilities. So I put these two rejected alternatives in the middle to show that their rejection docs not affect the balance. Next, I concentrate on the remaining pro and con sides of the proposed conclusion.

Pro-1 and Con-1 seem to have about equal strength. Cross out the pair.  
Pro-1和Con-1似乎具有相等的力量。划掉这对。

Pro-2 and Con-2 seem to have about equal strength. Cross out the pair.  
Pro-2和Con-2似乎具有相等的力量。划掉这对。

­bering that the Pro side has an edge here.Although Pro-3 seems stronger than Con-3, cross them out as a pair, remembering that the Pro side has an edge here.  
虽然Pro-3似乎比Con-3更强大，但将它们作为一对划掉，记住Pro方在这里有优势。

Pro-4 seems stronger than the combination of Con-4 and Con-5, so cross out all three, remembering that the Pro side has an edge here as well. Actually, Con-5 seems to be a very weak reason because I assume that dogs are not as important as humans. But what do you think?  
Pro-4似乎比Con-4和Con-5的组合更强大，所以划掉所有三个，记住Pro方在这里也有优势。实际上，Con-5似乎是一个非常薄弱的理由，因为我假设狗不如人类重要。但你怎么想？

In any case, that leaves Pro-5 without compensating counterreasons. This uncom­pensated counterreason, together with the edge for the Pro side and the unworkabil-

TABLE 11.1 Conclusion Under Consideration: Unleashed Dogs Should Not Be Allowed in Pulaski Park

*Pro Con  
无论如何，这使得Pro-5没有补偿性的反理由。这个未补偿的反理由，加上Pro方面的优势和不可行性- 表11.1 考虑中的结论：不应该允许在普拉斯基公园放养狗的Pro方*

1. This prohibition would result in fewer dog fights.
2. Dog-fearing people would be less likely to be frightened by dogs.
3. Intrusions on people's activities such as Little League baseball games, tennis, basketball, informal ball games, frisbee, chess, reading, etc., would be less likely.
4. Dogs w ould be unlikely to jump on people, lick them, and knock them (especially children) down.
5. Dog bites would be less frequent.
6. It is inconvenient for owners to keep dogs leashed.
7. This prohibition is likely to cut down on dogs’ exercise; lack of exercise makes dogs irritable and harms their health.
8. Well-trained non-offending dogs would have their freedom restrained unnecessarily, as would their considerate owners.
9. Dogs also have a right to jump and to express themselves.
10. This prohibition is in conflict with the principle that dogs are important too.

6. Other alternatives that have occurred to  
6. 其他替代方案的想法

me seem unworkable:  
看起来似乎行不通。

1. Excluding dogs from the park completely seems unnecessarily severe.  
   从公园完全排除狗似乎过于严厉。
2. Allowing only dogs that pass obedience tests and actually maintain good behavior seems unworkable.  
   只允许通过服从性测试并且实际保持良好行为的狗似乎行不通。

itv of two other alternatives (mentioned in 6) appear to justify the conclusion under consideration for Pulaski Park.  
在6中提到的另外两个选择似乎能够为Pulaski Park的考虑提供合理的结论。

On reviewing the reasons, I see no additional ones that are relevant and strong. One occurs to me, but I reject it. It holds that if leashes are required, there would be less spreading to young children of some diseases contained in dog droppings. I reject this on factual grounds: I see no reason to expect less spreading from leashed dogs than from unleashed dogs. My weighing of the reasons still seems satisfactory, so I maintain my conclusion. What do you think?  
在审查原因时，我没有发现其他相关且有力的附加原因。有一个原因浮现在我脑海中，但我拒绝接受它。这个原因认为，如果需要使用牵引绳，那么狗粪中含有的某些疾病对幼儿的传播会减少。就事实而言，我拒绝接受这个观点：我没有理由认为使用牵引绳的狗比不使用牵引绳的狗传播的减少。我对原因的权衡仍然令人满意，因此我维持我的结论。你认为呢？

This approach enables us to retain the vagueness that is inevitably there, and it avoids assigning monetary or other numerical values to things, but it does assume some comparison of the strength of reasons. It gives a way to make a decision when the situation (including consequences and appropriate principles) is fairly clear, and when a look at the reasons leads one to feel that one side does outweigh the other. One danger is that the approach can lead to our thinking of only two alternatives: pro and con. In using the approach, we must deliberately try to think of other alternatives and other ways of looking at some of the problems addressed.  
这种方法使我们能够保留不可避免的模糊性，并避免对事物进行货币或其他数值的赋值，但它确实假设了一些理由强度的比较。当情况（包括后果和适当原则）相当明确，并且通过理由的观察使我们感到一方确实超过另一方时，它提供了一种做出决策的方式。一个危险是这种方法可能导致我们只考虑两个选择：赞成和反对。在使用这种方法时，我们必须有意识地尝试考虑其他选择和其他解决问题的方式。­

The Franklin approach is not a decision procedure. That is, it does not automatically generate a decision, and reasonable people might well differ on comparing the strength of individual reasons. It is only a convenient way to organize your thoughts. Furthermore, some problems seem too difficult to resolve this way, but it is often helpful. I know of no better way for cases like that of the dogs in the park. Perhaps you can develop a better way. I invite you to try.  
富兰克林方法不是一个决策过程。也就是说，它不会自动生成一个决策，而且合理的人们可能在比较个别原因的强度时存在分歧。它只是一种方便的组织思维的方式。此外，有些问题似乎太难以通过这种方式解决，但它通常是有帮助的。对于像公园里的狗这样的情况，我不知道有更好的方法。也许你可以开发出更好的方法。我邀请你去尝试。­matically generate a decision, and reasonable people might well differ on comparing the strength of individual reasons. It is only a convenient way to organize your

FRISCO

Consider the extent to which I made use of the FRISCO approach in appraising the value judgment about dogs in the park. Remember that these phases of FRISCO, though presented in the FRISCO order here, should be applied with various orderings, emphases, and repetitions, depending on the situation:  
考虑我在评估公园里关于狗的价值判断时所使用的FRISCO方法的程度。请记住，尽管这里按照FRISCO的顺序呈现了这些阶段，但根据情况，应该以不同的顺序、强调和重复来应用这些阶段。­ings, emphases, and repetitions, depending on the situation:

*F: It was important to know the conclusion that was under consideration. It appears at the top of Table 11:1.  
重要的是要知道正在考虑的结论。它出现在表11:1的顶部。*

1. It was important to know the reasons. They are the body of Table 11:1. A large number of factual beliefs were relevant here. Most of the items listed under Pro and Con are factual beliefs about consequences, such as the belief that the prohibition would result in fewer dog fights.  
   了解原因很重要。它们是表11:1的主体。这里涉及了大量的事实信念。在正方和反方列出的大部分项目都是关于后果的事实信念，比如禁止将导致狗斗减少的信念。­tion would result in fewer dog fights.

Some value beliefs on which my conclusion rests are the beliefs that dog bites are bad, that dogs knocking down children is bad, that dog fights are bad, that intrusions on our free activities are better avoided, that dogs’ physical and mental health is important, that dogs have a right to express themselves and to be free, that trouble to people and dogs should be avoided where feasible, that people are more important than dogs, and that dogs are important too. Defending each of these involves us in another argument, but perhaps you will agree with most or all of them. Do you?  
我得出结论的一些价值信念是，狗咬人是不好的，狗撞倒孩子是不好的，狗打架是不好的，侵犯我们自由活动是应该避免的，狗的身心健康很重要，狗有表达自己和自由的权利，应该尽量避免给人和狗带来麻烦，人比狗更重要，狗也很重要。为了捍卫这些信念，我们又卷入了另一个争论，但或许你会同意其中大部分或全部。你同意吗？

In any particular value argument, we cannot defend everything, but these seem to me to be acceptable starting points. If I encounter someone who disagrees with one, then we must discuss that one and argue its pros and cons.  
在任何特定的价值观争论中，我们不能为一切辩护，但这些对我来说似乎是可以接受的起点。如果我遇到一个不同意的人，那么我们必须讨论并辩论它的利弊。

*I: One alternative to prohibiting unleashed dogs is explicit—the con side—permitting unleashed dogs. Others are permitting no dogs at all in the park, and permitting dogs without leashes if the dogs have special licenses. I rejected each of these other alternatives without explicitly going through the Franklin system for them. But if there had been any serious doubt about either rejection, then it would have been appropriate to use the Franklin system on them as well.  
一种禁止不系狗的替代方案是明确允许不系狗。其他方案包括禁止公园内的所有狗，以及只允许拥有特殊许可证的狗不系绳。我对这些其他方案进行了拒绝，没有明确地按照富兰克林系统进行评估。但如果对这些方案的拒绝存在严重的疑虑，那么使用富兰克林系统进行评估也是合适的。*­mitting unleashed dogs. Others are permitting no dogs at all in the park, and per­mitting dogs without leashes if the dogs have special licenses. I rejected each of these other alternatives without explicitly going through the Franklin system for them. But

­I made a tentative decision, based on a weighing of the reasons and a consideration of the situation and the clarity of the words involved. The decision is subject to revision, as it should be, if other important considerations develop.  
我做出了一个初步的决定，基于对原因的权衡、对情况的考虑以及所涉及词语的清晰度。这个决定是可以修订的，如果有其他重要的考虑因素出现的话。

1. Familiarity with the situation involving dogs and parks in general was required in predicting the consequences of accepting the conclusion. Also required was familiarity with the situation in Pulaski Park. It covers the space of about one city block and is surrounded by families with small children.  
   需要对狗和公园的情况有所了解，才能预测接受结论的后果。还需要熟悉Pulaski公园的情况。它占据了大约一个城市街区的空间，并被有小孩的家庭所环绕。

*C: I deliberately used terms whose meaning was somewhat vague, but seemed precise enough for the circumstances. For example, the word unleashed in the conclusion under consideration does not specify a maximum length for a leash. Does a 100-foot rope count as a leash? I deliberately left that vague, thinking that the meaning was clear enough in the situation, and that specifying a meaning for unleashed would unnecessarily complicate matters at this stage. Furthermore, I repeatedly used terms that do not specify an exact amount, such as fewer dog fights and less likely. This degree of vagueness is appropriate for the situation at this time, although if the problem becomes more difficult, more specificity would be needed.  
我故意使用了一些含义有些模糊但在这种情况下似乎足够明确的术语。例如，在考虑中的结论中，使用的unleashed这个词并没有明确规定拴绳的最大长度。100英尺的绳子算不算拴绳？我故意将这个问题留给模糊不清，认为在这种情况下意义已经足够清楚，并且为unleashed指定一个含义将在这个阶段不必要地复杂化问题。此外，我反复使用了一些不指定确切数量的术语，比如更少的狗斗和更不可能。在目前的情况下，这种模糊程度是适当的，尽管如果问题变得更加困难，就需要更多的具体性。*­clusion under consideration does not specify a maximum length for a leash. Does a 100-foot rope count as a leash? I deliberately left that vague, thinking that the mean­ing was clear enough in the situation, and that specifying a meaning for ­lem

As far as I can tell, there are no crucial ambiguities or misleading ways of putting things.  
据我所知，没有关键的歧义或误导性的表达方式。

*O: I have reviewed the decision arrived at under FRISCO’s I. It still seems right to me. You might have come to a different conclusion.  
O：我已经审查了FRISCOs I下的决定。在我看来，它仍然是正确的。你可能得出了不同的结论。*

Writing a Value Argument  
撰写价值论

Much of the argumentative writing we do is aimed at supporting value conclusions —conclusions that hold that either something is good (or bad) or something should be done (or not be done). By argumentative, I remind you that I am not talking about hostile or aggressive writing, although it might be that; rather, I am talking about writing that has a conclusion and offers reasons in support of the conclusion.  
我们所做的大部分辩论性写作都旨在支持价值判断——即认为某事是好的（或坏的）或某事应该做（或不做）的结论。当我提到辩论性时，我提醒你我并不是指敌对或攻击性的写作，尽管可能是那样；相反，我指的是具有结论并提供支持理由的写作。

Strategies  
策略

Naturally, it is important that you have an audience in mind, and that you write to that audience. It is also important that your audience realize what your conclusion and reasons are. The most obvious way for the audience to know your conclusion is for you to say what it is at the beginning. When you or your audience is in a hurry, or under stress, that is generally the best way. But there are other ways, such as drawing your conclusion at the end, leaving it up to the audience to figure out your conclusion, even to appear to be drawing a conclusion that is just the opposite of your real conclusion.  
自然而然，重要的是你要有一个受众，并且你要针对这个受众进行写作。同样重要的是，你的受众要意识到你的结论和理由是什么。让受众知道你的结论最明显的方式就是在开头说出来。当你或你的受众匆忙或处于压力之下时，这通常是最好的方式。但还有其他方式，比如在结尾得出你的结论，让受众自己去推断你的结论，甚至表现出与你真正结论相反的结论。­­

The trouble with these indirect strategies is that they often do not work. Often, the audience does not realize what your conclusion is. It takes greater writing skill, an audience with more reading skill, a point and a topic that are fairly simple, and usuallv more time devoted by both you and the audience, in order to use the indirect strategies effectively. But they are possible.  
这些间接策略的问题在于它们通常不起作用。通常，观众并不意识到你的结论是什么。要有效地使用间接策略，需要更高的写作技巧，观众具备更多的阅读技巧，一个相对简单的要点和主题，以及你和观众都投入更多的时间。但这是可能的。

If vou have used the Ben Franklin approach to organize your thoughts, then the content of vour position paper or memo has already been developed for you, but it must be organized in a way that flows from one point to the next. One simple, straightforward wav is to break up the paper or memo into three major sections, possibly labeled reasons, cotinterarguments, and on balance. Another way is to take the supporting reasons one at a time and work the challenges into a discussion of each of the supporting reasons. It often helps to start out with a concrete example. A third way, which is more difficult, is to weave a complex pattern that ends up considering all of the pros and cons, but does it in a complex mosaic.  
如果您使用了本·富兰克林的方法来组织您的思路，那么您的立场文件或备忘录的内容已经为您准备好，但它必须以一种从一个观点流向下一个观点的方式进行组织。一种简单直接的方式是将文件或备忘录分成三个主要部分，可能标记为原因、反对观点和总体来看。另一种方式是逐个处理支持原因，并将挑战融入到对每个支持原因的讨论中。通常，以具体的例子开始会有所帮助。第三种方式更加困难，即编织一个复杂的模式，最终考虑到所有的利弊，但以复杂的马赛克方式呈现。­sibly labeled

Strength  
力量

In any case, it is important to give strong arguments and to claim for your conclusion no more strength than you have justified in your reasons. Your reasons can include general value principles, statements of fact that show that the case fits under the principle, and statements of factual consequences of accepting the conclusion and of failing to accept it. Often these consequences are most persuasive, and provide the greatest strength for your argument, if they are stated in detail. Concrete examples help here.  
无论如何，重要的是提出有力的论据，并在你的理由中不要给你的结论提供超过你已经证明的力量。你的理由可以包括一般价值原则、表明案例符合该原则的事实陈述，以及接受结论和不接受结论的事实后果的陈述。通常，如果这些后果被详细陈述，它们会对你的论证提供最有说服力的支持和最大的力量。具体的例子在这里有帮助。­

Temperance  
节制

Although this depends on your audience and the rest of the situation, it is often best not to be hard and uncompromising in stating your arguments and conclusions. Temperate language is usually best, not only because it allays suspicion of prejudice, but because it helps you be in a frame of mind that is open to alternatives. It certainly is a good idea, if there is space, to consider and evaluate alternatives to your conclusion and your reasons. That does not mean that you have to accept the alternatives. You might mount strong arguments against them, but be fair.  
虽然这取决于你的受众和其他情况，但通常最好不要在陈述你的论点和结论时强硬和不妥协。温和的语言通常是最好的选择，不仅因为它能消除偏见的怀疑，还因为它有助于你保持开放的思维方式。如果有空间，考虑和评估你的结论和理由的替代方案是一个好主意。这并不意味着你必须接受这些替代方案。你可以对它们提出强有力的论据，但要公平。­sion and your reasons. That does not mean that you have to accept the alternatives. You might mount strong arguments against them, but be fair.

Factual Bases  
事实依据

Some of your argument might support the factual bases for your value statements. In the dog-leash case, for example, you might offer arguments to support or challenge the factual claim that there would be fewer dog fights if unleashed dogs were prohibited in Pulaski Park. These arguments in support of your factual claims might try to show that your source is credible, that your factual claim is a best explanation, that it is a justified generalization, that it follows (tightly or loosely) from some principle otherwise established, that the observation and reporting conditions were good, or all of the above.  
你的一些论点可能支持你的价值陈述的事实依据。例如，在狗链案例中，你可以提出论点来支持或质疑这样一个事实主张：如果在普拉斯基公园禁止不系狗链的狗，那么狗之间的斗争会减少。支持你的事实主张的这些论点可能试图表明你的信息来源可靠，你的事实主张是最佳解释，它是一种合理的概括，它（严格或宽松地）遵循了一些已经建立的原则，观察和报告条件良好，或者以上所有情况都成立。­hibited in Pulaski Park. These arguments in support of your factual claims might try

Checklist and Revisions  
清单和修订

In Chapter 1, you were provided with a position-paper checklist (starting with “1. Is there a thesis?”). It is a good idea to look this over before you start writing, to keep it in mind, and to check your drafts against this list. I said drafts because ordinarily you should revise what you write several times before giving it to your audience. “Revise, revise, and revise some more” is one of the cardinal principles of good writing. Very few people write a good first draft.  
在第一章中，您被提供了一个立论纲要清单（从1. 是否有论点开始）。在开始写作之前，查看此清单并牢记在心，并将您的草稿与此清单进行核对是一个好主意。我说草稿是因为通常情况下，您应该在交给读者之前多次修改您所写的内容。修改、修改，再修改是良好写作的基本原则之一。很少有人能一次写出一篇好的初稿。­ing. Very few people write a good first draft.

Analogical Argument  
类比论证

One type of argument that has not yet been discussed in this book is the analogical argument. In this type of argument (which can be used to support tactual as well as value conclusions), the arguer offers another case on which it is assumed there is agreement about the conclusion. The arguer also urges that the other case and the present one are similar enough for the other conclusion to be transferred to this case. Here are some examples:  
这本书中尚未讨论的一种论证类型是类比论证。在这种类型的论证中（可以用来支持触觉和价值结论），论证者提供另一个案例，假设在该案例中对结论存在一致意见。论证者还强调另一个案例和当前案例足够相似，以便将另一个结论转移到当前案例。以下是一些例子：

Example 11:2

1. Cockfights are like dog fights. You know that dog fights are ugly and should be stopped and avoided. Similarly, cockfights should be banned.   
   斗鸡比赛就像狗斗一样。你知道狗斗很丑陋，应该被禁止和避免。同样地，斗鸡比赛应该被禁止。
2. Allowing the Revolutionary Army free speech on the radio is like giving oxygen to a burning building.  
   在广播上允许革命军队自由发言就像给一个正在燃烧的建筑物供氧。
3. The earth is like an apparently healthy human being with a developing heart artery defect. Unless we take steps to reverse the deterioration, the earth and its inhabitants will die.  
   地球就像一个表面上健康的人类，但有着发展中的心脏动脉缺陷。除非我们采取措施来逆转这种恶化，否则地球和其居民将会死亡。

­ment of Example 11:2a, one might point out that dogs and roosters are different, so it does not follow that cockfights are ugly and should be stopped and avoided. Other differences are that cockfights arc generally organized for the amusement of human beings, and that the roosters are trained to fight under controlled conditions. Always at issue in analogical arguments is whether the two cases are sufficiently similar in rel­evant respects.The other person might well point out that there is a difference. In the argument of Example 11:2a, one might point out that dogs and roosters are different, so it does not follow that cockfights are ugly and should be stopped and avoided. Other differences are that cockfights arc generally organized for the amusement of human beings, and that the roosters are trained to fight under controlled conditions. Always at issue in analogical arguments is whether the two cases are sufficiently similar in relevant respects.  
其他人可能会指出存在差异。在例子11:2a的论证中，有人可能会指出狗和公鸡是不同的，所以不能推断出斗鸡比赛是丑陋的，应该停止和避免。其他的差异是斗鸡比赛通常是为了人类的娱乐而组织的，并且公鸡是在受控条件下训练打斗的。类比论证中始终存在的问题是这两种情况在相关方面是否足够相似。

­larity is to see whether both cases come under the same acceptable principle, making analogical arguments judgable by the principles of loose deduction or derivation, dis­cussed in Chapter 7 and the early part of this chapter. In this case, the generalization might be that fights between animals are generally ugly and should be stopped and avoided if possible, from which it follows loosely that cockfights are ugly and should be stopped and avoided if possible. This principle, you will realize, is open to excep­tion, and depends on judgment, so appeal to a broader principle is not a guarantee of a reasonable decision. But such an appeal is a step beyond just asking whether the difference is relevant. At least the search for a principle provides some guidance about relevance.The principal guideline available for dealing with the question of relevant similarity is to see whether both cases come under the same acceptable principle, making analogical arguments judgable by the principles of loose deduction or derivation, discussed in Chapter 7 and the early part of this chapter. In this case, the generalization might be that fights between animals are generally ugly and should be stopped and avoided if possible, from which it follows loosely that cockfights are ugly and should be stopped and avoided if possible. This principle, you will realize, is open to exception, and depends on judgment, so appeal to a broader principle is not a guarantee of a reasonable decision. But such an appeal is a step beyond just asking whether the difference is relevant. At least the search for a principle provides some guidance about relevance.  
处理相关相似性问题的主要准则是看两种情况是否属于同一可接受原则，通过宽松推理或推导的原则来判断类比论证，这些原则在第7章和本章前部分进行了讨论。在这种情况下，一般化的观点可能是动物之间的斗争通常是丑陋的，应该尽可能停止和避免，由此可以推断出斗鸡赛也是丑陋的，应该尽可能停止和避免。你会意识到，这个原则是有例外的，并且依赖于判断，所以对更广泛原则的诉求并不能保证一个合理的决定。但这样的诉求已经超越了仅仅询问差异是否相关的程度。至少寻找一个原则提供了一些关于相关性的指导。

­sibilities that we had not seen before, sensitizing us to the details of a situation. Seeing cockfights as similar to dog fights reminds me of the pain, blood, and unhap­piness that accompanied dog fights, and sensitizes me to these possibilities in cock­fights. Similarly, seeing free speech on the radio to be like oxygen shows the impor­tance of the free speech to the health of the Revolutionary Army, in the eyes of the speaker. Seeing the environmental deterioration as similar to that of a cardiac artery shows how crucial the speaker sees the environmental changes to be. Analogies help us to see things from the other’s point of view and bring out the vitality of the situ­ation.One advantage of analogical arguments is that they help open our eyes to possibilities that we had not seen before, sensitizing us to the details of a situation. Seeing cockfights as similar to dog fights reminds me of the pain, blood, and unhappiness that accompanied dog fights, and sensitizes me to these possibilities in cockfights. Similarly, seeing free speech on the radio to be like oxygen shows the importance of the free speech to the health of the Revolutionary Army, in the eyes of the speaker. Seeing the environmental deterioration as similar to that of a cardiac artery shows how crucial the speaker sees the environmental changes to be. Analogies help us to see things from the other’s point of view and bring out the vitality of the situation.  
类比论证的一个优点是它们帮助我们看到以前没有看到的可能性，使我们对情况的细节变得敏感。将斗鸡比作狗斗使我想起了伴随着狗斗的痛苦、流血和不幸，使我对斗鸡中的这些可能性变得敏感。同样，将广播中的言论自由比作氧气，从演讲者的角度来看，显示了言论自由对革命军队健康的重要性。将环境恶化比作心脏动脉的情况，显示了演讲者对环境变化的重要性。类比帮助我们从他人的角度看问题，并展现出情况的活力。

­its and problems of cockfights and about the merits and problems of analogical argu­ments.As you might guess, the use of analogical arguments is somewhat controversial. Some people feel that they are generally worthless. Others feel that they are fine, as long as the cases are relevantly similar. I have urged a middle ground that depends on treating analogical arguments as loose derivations and depicting consequences in detail. Think about it, but do realize that there is much more to be said about merits and problems of cockfights and about the merits and problems of analogical arguments.  
正如你可能猜到的那样，类比论证的使用在某种程度上是有争议的。有些人认为它们基本上毫无价值。其他人认为只要案例相关相似，它们就是可以接受的。我提倡一个折中的立场，即将类比论证视为松散的推导，并详细描述其后果。请思考一下，但要意识到关于斗鸡比赛的优点和问题以及类比论证的优点和问题还有更多要说的。

­ferences between the cases. There always arc differences that might be used to chal­lenge your point.If you use analogical arguments in your value-judgment writing, be aware of similarities and differences, and try to fit both cases under a broader acceptable value generalization. Also try to make use of the appeal of details, but be wary of the differences between the cases. There always arc differences that might be used to challenge your point.   
如果你在进行价值判断写作时使用类比论证，请注意相似之处和差异，并尝试将两种情况都归入更广泛可接受的价值概括之下。同时，尽量利用细节的吸引力，但要警惕案例之间的差异。总会存在可以用来质疑你观点的差异。

Summary  
摘要

Neglect of the facts, failure to notice the facts, and failure to collect facts are often the source of disagreement and problems in making value judgments. So a first step is to make sure that the supposed facts actually are facts. In particular, it is usually important to consider the prospective factual consequences of accepting a value judgment. These consequences are judged by acceptable value principles, most of which have accrued over time and are part of the cultural tradition. But sometimes consequences occur that are not covered by acceptable value principles, or that are possible exceptions to acceptable value principles. Then it is important to examine them in detail, formulating original value principles on the basis of a perceptive, sensitive, and reflective examination of these consequences.  
对事实的忽视、对事实的忽略以及对事实的收集不足，常常是产生分歧和问题的根源。因此，第一步是确保所谓的事实实际上确实是事实。特别是，通常很重要的是考虑接受价值判断的潜在事实后果。这些后果是通过可接受的价值原则来判断的，其中大部分原则是随着时间的推移而积累的，是文化传统的一部分。但有时会发生一些不符合可接受的价值原则的后果，或者是可接受的价值原则的可能例外。这时，重要的是详细审查它们，根据对这些后果的敏锐、敏感和反思性的审查，制定原创的价值原则。­ment. These consequences are judged by acceptable value principles, most of which have accrued over time and are part of the cultural tradition. But sometimes conse­quences occur that are not covered by acceptable value principles, or that are possi­ble exceptions to acceptable value principles. Then it is important to examine them

It is often helpful to list the pro and con sides of a value issue in two columns on a piece of paper. Then eliminate sets of reasons that are of equal importance for each side, and see what is left. If there are still strong reasons on one side, then that one is probably the one to take. Although this Ben Franklin strategy is imprecise, tempts us to neglect alternative ways of defining problems, and does not generate a solution that automatically resolves differences among reasonable people, it is often useful.  
通常在一张纸上的两栏中列出价值问题的正反两方面往往很有帮助。然后消除每一方面中同等重要性的理由集合，看看剩下什么。如果一方仍然有强有力的理由，那么很可能就是应该采取的方案。尽管这种本·富兰克林的策略不够精确，诱使我们忽视问题的替代定义方式，并且不能自动解决合理人之间的分歧，但它通常是有用的。

Critical thinking about values is subject to the FRISCO approach. The elements are the same: Focus, Reasons, Inference, Situation, Clarity, and Overview. They should be applied interactively. That is, every element or phase should interact with each of the others, and may be repeated in various ways. They are not sequential steps, although for purposes of summarizing, they may be presented in order.  
对价值观进行批判性思考遵循FRISCO方法。其要素相同：焦点、原因、推理、情境、清晰度和概览。它们应该以互动的方式应用。也就是说，每个要素或阶段都应与其他要素互动，并可以以不同的方式重复。它们不是顺序步骤，尽管为了总结的目的，可以按顺序呈现。

Reasoning in the value area is imprecise and open to challenge. But it is not totally worthless and useless, as some relativists would have us believe.  
在价值领域进行推理是不精确且容易受到质疑的。但它并非完全没有价值和用处，正如一些相对主义者所宣称的那样。

­Much of our argumentative writing leads to value conclusions. Various strategies are possible, assuming that the arguer is well-versed in the relevant facts, has explored the pros and cons for a particular position (possibly using the Ben Franklin approach as a decision-making process), and can state the conclusion. It is usually a good idea to be temperate in language, to use examples, often one right at the beginning, and to claim no greater strength for the conclusion than has been established.  
我们的辩论写作很多都会导致价值判断。假设辩论者对相关事实了如指掌，已经探讨了某个立场的利弊（可能使用本·富兰克林方法作为决策过程），并能陈述结论，那么就有各种策略可行。在语言上通常要保持温和，使用例子，通常是在开头就给出一个例子，并且不要为结论声称超过已经确立的力量。­ning, and to claim no greater strength for the conclusion than has been established.

Analogical arguments are commonly used to support value conclusions, and always depend on whether the relevant similarities are strong enough to outweigh the dissimilarities. Assimilating analogical argument to loose derivation and to depiction in detail of the consequences is helpful here.  
类比论证通常用于支持价值结论，并且始终取决于相关相似性是否足够强大以抵消不相似之处。在这里，将类比论证与松散推导和详细描绘后果相结合是有帮助的。

Check-Up 11B

True or False?  
真或假？

If false, change it to make it true. Try to do so in a wav that shows that you understand.  
如果为假，请将其更改为真。尝试以一种能够显示您理解的方式来做到这一点。

**11:19 The FRISCO approach is inapplicable to reasoning about value judgments.   
11:19 FRISCO方法不适用于对价值判断的推理。**

11:20 Both facts and acceptable value principles are very important in making decisions about value judgments.  
11:20 无论是事实还是可接受的价值原则，在做出关于价值判断的决策时都非常重要。­ing decisions about value judgments.

11:21 The Benjamin Franklin approach that calls for us to list and cross off reasons is more precise than most decision-theory approaches.  
11:21本杰明·富兰克林的方法要求我们列出并划掉原因，比大多数决策理论方法更精确。

11:22 The consequences of accepting a value judgment should usually be considered before accepting the judgment.  
接受价值判断之前，通常应该考虑接受这个判断的后果。

Medium Answer  
中等答案

11:23 Pick a local value issue with which you are familiar, or a personal decision issue that you face. Use the Ben Franklin strategy for making a decision and keep the FRISCO advice in the back of your mind. Your report of your effort should include a list of the pro and con reasons, should show how you balance them against each other, and should state your conclusion with some indication of how strongly you stand by it.  
11:23 选择一个你熟悉的当地价值问题，或者你面临的个人决策问题。使用本·富兰克林的决策策略，并将FRISCO建议记在心中。你的报告应包括正反理由的列表，应展示你如何权衡它们，并陈述你的结论，并表明你对此的坚定程度。­

11:24 Now use your results from 11:23 as the content for a two- or three- page position paper on the issue. Make sure that you have an audience in mind. Pay heed to the Chapter 1 position-paper criteria.  
11:24现在将11:23的结果作为一个关于这个问题的两到三页的立场文件的内容。确保你有一个特定的读者群体。注意第一章立场文件的标准。

11:25 In a page or two, appraise my handling of the proposed leash rule for Pulaski Park. Assume that Pulaski Park is near to where you live or, if you live in the country, is in the city nearest to you. Apply the FRISCO approach in your thinking. Assume that you are writing this to go in a letter to me. Again, pay heed to the Chapter 1 positionpaper criteria.  
11:25 在一页或两页中，评估我对Pulaski公园提出的拴绳规定的处理。假设Pulaski公园靠近你居住的地方，或者如果你住在乡村，则是离你最近的城市。在思考中应用FRISCO方法。假设你写这封信给我。再次注意第一章立场文件的标准。­paper criteria.

11:26 Apply the Ben Franklin procedure to the question “Should our society adopt the principle that it is generally wrong to react with violence to a threat on your life, if there is a peaceful alternative readily available?”

11:27 Now use your results from 11:26 as the content for a two- or three- page position paper on the issue. Have an audience in mind, perhaps the readership of your newspaper. Pay heed to the Chapter 1 positionpaper criteria.  
11:26 将本·富兰克林程序应用于以下问题：如果在生命受到威胁时有一个和平的替代方案可用，我们的社会是否应该采取通常反对以暴力回应威胁的原则？11:27 现在将11:26的结果用作一个关于这个问题的两到三页的立场文件的内容。设想一个受众，比如你所在报纸的读者。请注意第一章立场文件的标准。­paper criteria.

11:28 Put vourself in President Harry Truman’s position in the summer of 1945 and use the Ben Franklin approach to help decide whether to order the dropping of the atomic bomb on Hiroshima.  
11:28 把自己置于1945年夏天的美国总统哈里·S·杜鲁门的位置，并采用本·富兰克林的方法来决定是否下令投放原子弹在广岛。

11:29 Now use your results from 11:28 as the content for a two- or three- page position paper on the issue. Have an audience in mind, perhaps the readership of a nationally distributed newspaper (give its name). Pay heed to the Chapter 1 position-paper criteria.  
11:29 现在将11:28的结果用作一个关于该问题的两到三页的立场文件的内容。设想一个受众，比如一个全国发行的报纸的读者群体（给出报纸的名字）。注意第一章的立场文件标准。

11:30 Consider the analogical argument about cockfights in Example 11:2. Assume that it is offered in your home town in defense of an ordinance forbidding cockfights. Appraise the argument, taking into account the phases of FRISCO.  
11:30 考虑关于Example 11:2中斗鸡比赛的类比论证。假设它是为了捍卫禁止斗鸡比赛的法令而在你的家乡提出的。根据FRISCO的阶段评估这个论证。­nance forbidding cockfights. Appraise the argument, taking into account the phases of FRISCO.

11:31 Reproduce and appraise an analogical argument that you find in a newspaper, a magazine, or a conversation with some friends. Describe the situation and take into account the phases of FRISCO. Prepare a letter to the editor (or a friend) in which you evaluate this argument and defend your evaluation.   
11:31 复制并评估在报纸、杂志或与朋友的对话中发现的类比论证。描述情况并考虑FRISCO的阶段。准备一封给编辑（或朋友）的信，其中评估这个论证并为你的评估辩护。

+ Relativism

Although a variety of differing doctrines are called relativism, two relativistic value judgment doctrines appear repeatedly and are significant enough to deserve discussion. These two doctrines are called cultural relativism and personal relativism. Roughly speaking, these doctrines respectively hold that what is right (or good) depends exclusively on what a culture approves (cultural relativism) or a person approves (personal relativism). In this sense of culture, the culture of a large group of people consists of all of their joint beliefs, attitudes, and ways of living.  
尽管有各种不同的学说被称为相对主义，但有两种相对主义的价值判断学说一再出现，并且足够重要以值得讨论。这两种学说分别被称为文化相对主义和个人相对主义。粗略地说，这些学说分别认为什么是正确的（或好的）完全取决于文化的认可（文化相对主义）或个人的认可（个人相对主义）。在文化的意义上，一个大群体的文化包括他们共同的信仰、态度和生活方式。­sion. These two doctrines are called

Cultural Relativism  
文化相对主义

Three general types of cultural relativism can be identified, which I shall call basic cultural relativism, factual cultural relativism, and sophisticated cultural relativism.  
可以确定有三种一般类型的文化相对主义，我将称之为基本文化相对主义、事实文化相对主义和复杂文化相对主义。*­tural relativism, factual cultural relativism,*

Basic Cultural Relativism  
基本文化相对主义

John Zadrony’s Dictionary of Social Science contains the following definition:  
约翰·扎德罗尼的社会科学词典包含以下定义：

***Definition Cultural Relativism—the point of view in which each cultural group  
文化相对主义——每个文化群体的观点***

is evaluated in terms of its own value system.  
以其自身的价值体系进行评估。

One common form of this view holds that a practice or act of a person or group is supposed to be judged by the standards of the culture of that person or group. I shall call this view basic cultural relativism. For example, the fact that Western culture approves eating the meat of cattle makes it all right, according to this view, for people of the West to eat the meat of cattle; the fact that the culture of many Hindus in India holds that eating the meat of cattle is wrong makes it wrong for them to eat the meat of cattle. Furthermore, it follows from this that it would be wrong for the people of the West to try to induce Indians to eat the meat of cattle, just as it would be wrong for the Indians to try to prevent Westerners from eating the meat of cattle. These things would be wrong because they would be interference with the ways of a particular culture; basic cultural relativism assumes the ways of a particular culture to be right for the people in that culture.  
这种观点的一种常见形式认为，一个人或群体的行为或行为应该根据该人或群体的文化标准来判断。我将称之为基本文化相对主义。例如，根据这种观点，西方文化认可食用牛肉是可以的，所以西方人吃牛肉是可以的；而印度许多印度教徒的文化认为食用牛肉是错误的，所以他们吃牛肉是错误的。此外，由此可得出结论，西方人试图诱使印度人吃牛肉是错误的，就像印度人试图阻止西方人吃牛肉一样是错误的。这些事情是错误的，因为它们会干涉特定文化的方式；基本文化相对主义假设特定文化的方式对该文化中的人来说是正确的。­ple of the West to eat the meat of cattle; the fact that the culture of many Hindus in India holds that eating the meat of cattle is wrong makes it wrong for them to eat the meat of cattle. Furthermore, it follows from this that it would be wrong for the peo­ple of the West to try to induce Indians to eat the meat of cattle, just as it would be wrong for the Indians to try to prevent Westerners from eating the meat of cattle. These things would be wrong because they would be interference with the ways of a particular culture; basic cultural relativism assumes the ways of a particular culture to be right for the people

There are problems with basic cultural relativism.3 For one thing, according to it, all moral reformers are wrong because they are proposing things that, at the time the reform is proposed, are disapproved by the culture, which the reformers are trying to change. According to this view, a person who tried to get rid of slavery at a time when slavery was accepted by a culture was at that time wrong. It is a suspicious view that condemns reforms without looking at their individual merits and weaknesses and that is committed to support of the status quo, no matter how bad it may be.  
基本的文化相对主义存在问题。首先，根据这个理论，所有的道德改革者都是错误的，因为他们提出的事物在改革被提出的时候，被文化所不赞同，而改革者正是试图改变这种文化。根据这种观点，一个在奴隶制被接受的时代试图废除奴隶制的人在那个时候是错误的。这是一种可疑的观点，它在不考虑改革的个别优点和缺点的情况下谴责改革，并致力于支持现状，无论现状有多糟糕。

­ture that, as one of Secondly, the view is self-contradictory in some situations: Relativism both endorses and condemns interference with an interfering culture. For example, a culture that, as one of its basic ways, tries to spread its religion, or its respect for human dignity, to another culture that docs not accept this religion or respect would be trying to interfere with the other culture. Because doing this is one of the ways of the 3. This discussion of basic cultural (and personal) relativism draws heavily on W. D. Ross’ Foundations of Ethics (Oxford: Oxford University Press, 1939), 22-26, 59-63.   
其次，在某些情况下，这种观点是自相矛盾的：相对主义既支持又谴责对干扰文化的干涉。例如，一种文化作为其基本方式之一，试图传播其宗教或对人类尊严的尊重，而另一种文化不接受这种宗教或尊重，这种行为就是对另一种文化的干涉。因为这是第3种方式之一。这对基本文化（和个人）相对主义的讨论在很大程度上借鉴了W. D. Ross的《伦理学基础》（牛津：牛津大学出版社，1939年），22-26，59-63页。­ing to interfere with the other culture. Because doing this

­tent recommendations in this common type of situation.interfering culture, relativism must endorse the interference. But because the ways of culture being interfered with are held to be right for that culture, relativism must condemn the interference. Thus, basic cultural relativists are committed to inconsistent recommendations in this common type of situation.  
干涉文化，相对主义必须支持干涉。但由于被干涉的文化方式被认为对该文化来说是正确的，相对主义必须谴责干涉。因此，基本的文化相对主义者在这种常见情况下持有不一致的建议。

­eral rule) that whatever is endorsed by a culture is what the people in that culture should do unless it is, or results in, interference with another culture. Such an excep­tion would avoid the self-contradiction, but would then require all cultures This difficulty' could perhaps be avoided by holding (as an exception to the general rule) that whatever is endorsed by a culture is what the people in that culture should do unless it is, or results in, interference with another culture. Such an exception would avoid the self-contradiction, but would then require all cultures not to interfere with a culture that practiced slavery of, or discrimination against, people of one particular skin color or one gender, to pick some significant examples.  
这个困难'也许可以通过保持（作为一般规则的例外）一个文化所认可的一切都是该文化的人们应该做的，除非它是或导致干涉另一个文化的情况来避免。这样一个例外将避免自相矛盾，但也会要求所有文化不干涉实行奴隶制或对某一特定肤色或性别的人进行歧视的文化，以选择一些重要的例子。

­rations of basic cultural relativism with your associates, so that I can turn to two other types of cultural relativism, which are more plausible.Each of these points could be explored more fully, and the arguments can get very complex. Instead of pursuing them here, I invite you to engage in these explorations of basic cultural relativism with your associates, so that I can turn to two other types of cultural relativism, which are more plausible.  
这些观点都可以进一步探讨，而且论点可能会变得非常复杂。不过，我不打算在这里深入探讨它们，我邀请你与你的同事一起进行这些基本文化相对主义的探索，这样我就可以转向另外两种更有可能的文化相对主义。

Factual Cultural Relativism  
事实文化相对主义

­ferent and conflicting in a very fundamental way. This difference is a factual matter, exemplified by the difference in evaluation of eating the meat of cattle.The fundamental principle of factual cultural relativism, the second type of cultural relativism, is that the value statements supported by different groups are often different and conflicting in a very fundamental way. This difference is a factual matter, exemplified by the difference in evaluation of eating the meat of cattle.  
事实文化相对主义的基本原则是，不同群体支持的价值观陈述通常在非常根本的方式上是不同和冲突的。这种差异是一个事实问题，以对待食用牛肉的评估差异为例。

­ativism seems to be a correct view. But the fact that two cultures do disagree does not show that both are right, or that neither is right, or that neither can be established as right, although we might be led to think so, if we are careless about distinctions among different kinds of relativism. That is, we might be led to think so if, from the establishment of factual relativism, we infer that some other type of relativism is true. Because thev say different things, establishment of one does not establish another.Different cultures often do disagree about many value statements, so factual relativism seems to be a correct view. But the fact that two cultures do disagree does not show that both are right, or that neither is right, or that neither can be established as right, although we might be led to think so, if we are careless about distinctions among different kinds of relativism. That is, we might be led to think so if, from the establishment of factual relativism, we infer that some other type of relativism is true. Because thev say different things, establishment of one does not establish another.  
不同的文化经常在许多价值观陈述上存在分歧，因此事实相对主义似乎是一个正确的观点。但是，两个文化的分歧并不能证明两者都是正确的，或者两者都不正确，或者两者都无法被确定为正确，尽管如果我们在不同种类的相对主义之间不加区分的话，我们可能会被引导到这样的思考。也就是说，如果我们从事实相对主义的建立中推断出其他类型的相对主义是真实的，我们可能会被引导到这样的思考。因为他们说了不同的事情，一个的建立并不能建立另一个。

Sophisticated Relativism  
复杂的相对主义

Sophisticated relativism is the view that there is not any way of establishing one value principle as correct. Sophisticated relativism takes a sophisticated value position, and is difficult to prove wrong or right without already assuming that it is wrong or right. Sophisticated relativism gets its appeal in part from the difficulty of showing that some value principle or position is correct without assuming some other, more basic value position, which can then be challenged by the sophisticated relativist. Ultimately, there is no further position to appeal to when the most basic position is questioned. If vou keep asking “Why?” you eventually run out of even-more-basic principles to use in giving an answer. Try it on any value position you hold.  
复杂相对主义是一种观点，认为没有任何一种方法可以确定一个价值原则是否正确。复杂相对主义采取了一种复杂的价值立场，很难证明它是错误的还是正确的，除非已经假设它是错误的还是正确的。复杂相对主义之所以吸引人，部分原因在于很难证明某个价值原则或立场是否正确，而不假设其他更基本的价值立场，而这些立场又可以被复杂相对主义者质疑。最终，当最基本的立场受到质疑时，就没有进一步的立场可以诉诸。如果你不断问为什么？最终你会用完更基本的原则来回答。试试对你持有的任何价值立场进行这样的思考。

­In discussing sophisticated relativism, I shall not try to appeal to an authority because (among other things) any authorin' I select would be suspected by a large segment of my readers. So I would like to pursue the more precarious course. The basic strategv is to show that people who express this position do not actually believe it, as evidenced by their own strongly held views about various contemporary issues that affect them. There are such issues for all those I have heard express the position. Self-respect, employment, war, military service, education, taxation, honesty, medical treatment, delinquency, imperialism, equality, capital punishment, genocide, birth con trol, and euthanasia are likely issues on which people expressing sophisticated relativism do have a stand that they are willing to defend by giving reasons. That a person is willing to take a stand and give reasons implies that the person thinks there is at least some justification for the position and that the position is better than the alternatives.  
在讨论复杂的相对主义时，我不会试图引用权威，因为（除其他原因外）我选择的任何作者都会受到我的许多读者的怀疑。所以我想追求更冒险的道路。基本策略是要表明，表达这种立场的人实际上并不相信它，这可以从他们对各种影响他们的当代问题的坚定立场中得到证明。我听到的所有人都有表达这个立场的问题。自尊、就业、战争、兵役、教育、税收、诚实、医疗、犯罪、帝国主义、平等、死刑、种族灭绝、节育和安乐死都是人们表达复杂相对主义的立场，并愿意通过给出理由来为其辩护的问题。一个人愿意采取立场并给出理由意味着这个人认为至少有一些理由支持这个立场，并且这个立场比其他选择更好。­tivism do have a stand that they are willing to defend by giving reasons. That a person is willing to take a stand and give reasons implies that the person thinks there is at least some justification for the position and that the position is better than the alternatives.

In any practical situation, then, the location of a particular issue on which sophisticated relativists are willing to take a stand and give reasons should convince them that they do not really accept sophisticated relativism. If we should uncover a person who sincerely is unwilling to take a stand on any issue, then I do not think there is anything to do but wait until that person becomes a human being.  
在任何实际情况下，那么，复杂相对论者愿意表态并给出理由的特定问题的位置应该使他们相信他们实际上并不接受复杂相对论。如果我们发现一个真诚地不愿意在任何问题上表态的人，那么我认为除了等待这个人成为一个人类之外，我们别无选择。

­ficult issues, but admit that he or she cannot offer any reasons in support of it, and leave it at that. I have never found such a person. All the sophisticated relativists I have ever met would be embarrassed to say that they cannot give any reasons or evi­dence for their positions, and in fact do give reasons. They not only take stands on some of those issues, but are also willing to give reasons that suggest that they think that their positions are justified. Thus, they are not really relativists. They just talk that way when they are not deeply and intimately involved in an issue.Alternatively, a sophisticated relativist could take a position on one of those difficult issues, but admit that he or she cannot offer any reasons in support of it, and leave it at that. I have never found such a person. All the sophisticated relativists I have ever met would be embarrassed to say that they cannot give any reasons or evidence for their positions, and in fact do give reasons. They not only take stands on some of those issues, but are also willing to give reasons that suggest that they think that their positions are justified. Thus, they are not really relativists. They just talk that way when they are not deeply and intimately involved in an issue.  
或者，一个高级的相对主义者可以在其中一个困难问题上表达立场，但承认自己无法提供任何支持理由，并就此作罢。我从未遇到过这样的人。我所遇到的所有高级相对主义者都会为自己无法为自己的立场提供任何理由或证据感到尴尬，实际上他们确实提供了理由。他们不仅在某些问题上表明立场，而且愿意给出理由，这些理由表明他们认为自己的立场是合理的。因此，他们并不真正是相对主义者。他们只是在没有深入参与问题时才会以那种方式说话。

­logue, let The previous discussion of sophisticated relativism was abstract. Let me try to offer a sample dialogue so that you can check out your understanding and can apply some of these ideas to your own deeply held value positions. In the following dialogue, let SR mean sophisticated relativist and let F mean the relativist’s friend:  
先前对于复杂相对主义的讨论是抽象的。让我试着提供一个样本对话，这样你就可以检验一下自己的理解，并将其中一些观点应用到你自己深深坚持的价值立场上。在下面的对话中，让SR代表复杂相对主义者，让F代表相对主义者的朋友：

Example 11:3

**SR: Although it would be nice to be able to defend our value statements, ultimately there is no way to show that one is any better than another.  
虽然能够捍卫我们的价值观陈述会很好，但最终无法证明其中一个比另一个更好。**

**F: Does that include all of your value statements?  
这包括你所有的价值观吗？**

**SR:** Of course.

*(Later)*

**SR∙ The prevalence of politicians who take bribes is disgusting. However, it’s the fault of the system, which needs radical change.  
SR∙政客受贿的普遍现象令人厌恶。然而，这是制度的问题，需要彻底改变。**

**F: Why do you say that?  
为什么这么说？**

**SR The ordinary person is neglected and exploited, and stymied in his or her efforts to do anything.  
普通人被忽视和剥削，并且在努力做任何事情时受到阻碍。**

**F: Is that bad?  
那是不好的吗?**

**SR Of course it is. Special privileges are unfair.  
当然是的。特权是不公平的。**

**F:** Why?

**SR Well just look at what happens right here on this street. Look at Ms. Mills, who works hard, is totally honest, helps her neighbors, makes an important contribution, but is unable to provide care for her sick mother. In contrast, Mr. Jark, who is careless and inconsiderate, gets a lucrative city contract for doing nothing, just because he makes a large contribution every year to the right people. His sick father receives fine care That is obviously not fair.  
SR嗯，就看看这条街上发生了什么。看看米尔斯女士，她努力工作，完全诚实，帮助邻居，做出重要贡献，但却无法照顾她生病的母亲。相比之下，贾克先生漫不经心，不体贴，却因为每年向正确的人捐款而得到了一份有利可图的城市合同，什么都不做。他生病的父亲得到了良好的照顾。显然这是不公平的。**

**F:** Γm persuaded.

­sons, he appeals to a consideration of the details of a situation. So he really does not believe what he says as a sophisticated relativist.Note what has happened here. SR, although denying that there is any way to show that one value judgment is any better than another, seems to belie his assertion. He defends his value judgment. Furthermore, when he runs out of higher-order reasons, he appeals to a consideration of the details of a situation. So he really does not believe what he says as a sophisticated relativist.  
注意这里发生的事情。SR虽然否认有任何方法可以证明一个价值判断比另一个更好，但似乎与他的断言相矛盾。他为自己的价值判断辩护。此外，当他没有更高级的理由时，他会诉诸对情况细节的考虑。所以他并不像一个老练的相对主义者那样相信自己所说的话。

­ticated relativists you know and see whether they do the same thing when dealing with things that really matter to them. Let me know if you find anyone who really sticks by his or her sophisticated relativism.I offer this story as typical and invite you to check any self-proclaimed sophisticated relativists you know and see whether they do the same thing when dealing with things that really matter to them. Let me know if you find anyone who really sticks by his or her sophisticated relativism.  
我将这个故事作为典型案例，并邀请你去核实一下你所认识的自称高深的相对主义者，在处理真正对他们重要的事情时是否也会做同样的事情。如果你找到任何真正坚持自己高深相对主义的人，请告诉我。

Personal Relativism  
个人相对主义

Similar in some ways to basic cultural relativism, *personal relativism* locates its ulti­mate justification in the approval of the person making the value statement. Instead of “Whatever is approved by the culture is right,” the doctrine is “Whatever is approved by me is right.” There is an initial plausibility to this view as well, for it would be very odd for a person to say (without qualification), “I approve of some­thing that is wrong.” Try saying to yourself about some particular action: “I approve of that action even though it is really wrong (not just judged wrong in our culture).”

A problem arises when we consider a situation in which one person claims that a particular act or thing is good and another claims that it is bad. The nature of this problem depends on the way in which we interpret personal relativism, as a definition of *right* or as a doctrine setting forth a nondefinitional sufficient condition for some­thing’s being right.[[22]](#footnote-22)

­tion of the other. When Jane says that it was right for John to cheat on the history test, she would simply be saying that she approves of it; when Frank says that it was wrong, he would simply be saying that he disapproves. Given this definitional inter­pretation of personal relativism, each party would have to admit the truth of the other’s contention (assuming that Jane does approve and that Frank does disap­prove). That is, Jane would admit that Frank disapproves of the cheating, and Frank would admit that Jane approves of it. Thus, each would admit all that the other had supposedly claimed. The disagreement that we all know exists has been whisked away by definitional personal relativism. When Frank says that the cheating was bad and Jane says that it was good, it should be clear that they really are disagreeing and that neither does in fact think that what the other is saying is true. Definitional personal relativism magically, but falsely, eliminates real disagreements.In the definition case, all ethical disagreement disappears because the apparent contenders are simply talking about different things: the reaction of one and the reaction of the other. When Jane says that it was right for John to cheat on the history test, she would simply be saying that she approves of it; when Frank says that it was wrong, he would simply be saying that he disapproves. Given this definitional interpretation of personal relativism, each party would have to admit the truth of the other’s contention (assuming that Jane does approve and that Frank does disapprove). That is, Jane would admit that Frank disapproves of the cheating, and Frank would admit that Jane approves of it. Thus, each would admit all that the other had supposedly claimed. The disagreement that we all know exists has been whisked away by definitional personal relativism. When Frank says that the cheating was bad and Jane says that it was good, it should be clear that they really are disagreeing and that neither does in fact think that what the other is saying is true. Definitional personal relativism magically, but falsely, eliminates real disagreements.  
在某些方面类似于基本的文化相对主义，个人相对主义将其最终的正当性归结于做出价值判断的个人的认可。而不是文化所认可的一切都是对的，这个理论是我所认可的一切都是对的。这种观点在某种程度上是合理的，因为一个人很奇怪地说（没有任何限定），我认可一些错误的事情。试着对自己说一些特定行为：我认可那个行为，尽管它实际上是错误的（不仅仅是在我们的文化中被判断为错误）。当我们考虑一个情况，其中一个人声称某个行为或事物是好的，而另一个人声称它是坏的时，就会出现问题。这个问题的性质取决于我们如何解释个人相对主义，是作为对正确的定义还是作为陈述某事正确的非定义性充分条件的理论[23]。在定义的情况下，所有的道德分歧都消失了，因为表面上的竞争者只是在谈论不同的事情：一个人的反应和另一个人的反应。当简说约翰在历史考试中作弊是正确的时，她只是在说她认可它；当弗兰克说它是错误的时，他只是在说他不认可。根据这种定义性解释的个人相对主义，每一方都必须承认对方的论断的真实性（假设简确实认可，弗兰克确实不认可）。也就是说，简会承认弗兰克不认可作弊，弗兰克会承认简认可它。因此，每个人都会承认对方所声称的一切。我们都知道存在的分歧被定义性个人相对主义所消除。当弗兰克说作弊是坏的，简说它是好的时，应该清楚他们确实存在分歧，而且实际上都不认为对方所说的是真的。定义性个人相对主义以魔法般的方式，但错误地消除了真正的分歧。

­tion for the cheating’s being bad, then this kind of personal relativism generates and endorses conflicting views: The cheating was both good and bad. If, on the otherGiven the nondefinitional, sufficient-condition interpretation of personal relativism, then, either contradictory judgments are both judged correct or the person advancing the position is insufferably arrogant. If Jane’s approval is a sufficient condition for the cheating’s being good and Frank’s disapproval is a sufficient condition for the cheating’s being bad, then this kind of personal relativism generates and endorses conflicting views: The cheating was both good and bad. If, on the other hand, it is only the approval and disapproval of the person advancing personal relativism that matters, then the view does not generate such a conflict, but it is unacceptably arrogant. Thus, personal relativism has difficulties.  
鉴于个人相对主义的非定义性、充分条件解释，要么矛盾的判断都被认为是正确的，要么持该立场的人是难以忍受的傲慢。如果简的赞同是作弊好的充分条件，而弗兰克的不赞同是作弊坏的充分条件，那么这种个人相对主义会产生并支持相互冲突的观点：作弊既好又坏。另一方面，如果只有持个人相对主义立场的人的赞同和不赞同才重要，那么这个观点就不会产生这样的冲突，但它是不可接受的傲慢。因此，个人相对主义存在困难。­tivism that matters, then the view does not generate such a conflict, but it is unac­ceptably arrogant. Thus, personal relativism has difficulties.

Absolutism Versus Relativism  
绝对主义对抗相对主义

One common form of argument offered in favor of relativism is exemplified by the following passage:  
相对主义的一种常见论证形式可以通过以下段落来说明：

Example 11:4

We cannot assume that there are absolutes in morals. In fact, it is obvious that there are no absolutes. Look at the differences among cultures that are reported to us by anthropologists. For example, Margaret Mead tells of sexual freedom on Samoa. Point to an absolute and I will show you that you do not really regard it as an absolute. You say that a son should honor his father? I ask you then to think of the father who introduces his son into a life of crime. Should that son honor his father? Obviously not. Absolutism is false. Relativism is the only other way.  
我们不能假设道德中存在绝对。事实上，显而易见地，没有绝对存在。看看人类学家向我们报告的不同文化之间的差异。例如，玛格丽特·米德讲述了萨摩亚的性自由。指出一个绝对，我会告诉你你并不真正把它视为绝对。你说一个儿子应该尊敬他的父亲？那么我问你，想想那个将儿子引入犯罪生活的父亲。那个儿子应该尊敬他的父亲吗？显然不应该。绝对主义是错误的。相对主义是唯一的另一种方式。

Before you read my commentary on this argument, think of what you would say about it.  
在阅读我对这个论点的评论之前，请想想你对它会说什么。

In what follows, note the extended attention I have given to clarity of meaning (C). Later on, I shall refer to this argument and my treatment of it in discussing strategy and tactics for dealing with problems rooted in meaning.  
在接下来的内容中，请注意我对意义清晰性（C）所给予的详细关注。稍后，我将在讨论处理与意义相关的问题的策略和战术时提到这个论点和我的处理方式。­egy and tactics for dealing with problems rooted in meaning.

­tures are agreed on value judgments). It is also defended by a denial that value prin­ciples are universal. This denial is supported by an exception to the principle that a son should honor his father.In the situation (S) in which this argument was presented, it seemed that the conclusion was that relativism is a correct doctrine. The primary reason offered is that absolutism is an incorrect doctrine. The defense for this reason is based in part on a fact about Samoa that is a counterexample to factual absolutism (the view that all cultures are agreed on value judgments). It is also defended by a denial that value principles are universal. This denial is supported by an exception to the principle that a son should honor his father.  
在这个论证被提出的情况下，似乎结论是相对主义是一个正确的学说。提供的主要理由是绝对主义是一个错误的学说。对这个理由的辩护部分基于关于萨摩亚的一个事实，这个事实是对事实绝对主义（即所有文化都同意价值判断）的反例。它还通过否认价值原则是普遍的来进行辩护。这个否认得到了一个例外的支持，即儿子应该尊敬他的父亲的原则。

We should note that the argument assumes that there are only two alternatives: absolutism and relativism. This assumption should be examined. But there are several ways in which the term absolutism can be taken in this argument, so there are several possible interpretations of the assumption. We must look at the argument as a whole several times, each time using one of these senses of absolutism all the wav through the argument.  
我们应该注意到，这个论点假设只有两种选择：绝对主义和相对主义。这个假设应该被审视。但是在这个论点中，绝对主义这个术语可以有几种理解方式，因此对于这个假设有几种可能的解释。我们必须多次全面地审视这个论点，每次都使用这些绝对主义的意义之一来进行。

Here I shall interpret relativism only to mean sophisticated (cultural) relativism, in order to keep things relatively simple. Basic cultural relativism seems wrong, I have argued, and factual relativism is probably true, but not relevant here. We could add to the complexity of the treatment by adding factual relativism as an interpretation of relativism, but then the conclusion in favor of relativism would be a factual one about what people do and what they believe they should do. It is not about what people should do, nor about what values they should accept, though such “should” conclusions are what the arguer, in my experience, wanted. That is, the arguer wanted me to accept that I should not draw value conclusions that apply to what other people should do.  
在这里，我只解释相对主义为复杂（文化）相对主义，以保持相对简单。我已经争论过，基本的文化相对主义是错误的，而事实相对主义可能是真实的，但在这里并不相关。我们可以通过将事实相对主义作为相对主义的解释来增加处理的复杂性，但那么对相对主义的结论将是关于人们做什么以及他们认为自己应该做什么的事实性结论。这不是关于人们应该做什么，也不是关于他们应该接受什么价值观，尽管这样的结论是争论者在我的经验中想要的。也就是说，争论者希望我接受我不应该得出适用于其他人应该做什么的价值结论。­sions are what the arguer, in my experience, wanted. That is, the arguer wanted me to accept that I should not draw value conclusions that apply to what other people should do.

This will be difficult reading. Among other things I am illustrating an argument strategy for dealing with possibly shifting meanings. I will refer to this example in Chapter 13, when the topic of shifting meanings will be emphasized. Read slowly, and read again.  
这将是困难的阅读。除此之外，我正在阐述一种处理可能变化含义的论证策略。在第13章中，我将提到这个例子，强调变化含义的主题。慢慢阅读，并再次阅读。

1. Assume that absolutism is the belief that all cultures agree on a basic set of values. Then, although absolutism might be false, the assumed strong either-or proposition, “Either absolutism or relativism is right,” is false as well, because a person who denies this sort of absolutism might consistently believe that there still is one proper way to do things. Hence, the argument’s assumption is false, when absolutism is interpreted as the denial of factual relativism, and the conclusion is not established, given this sense of absolutism.  
   假设专制主义是一种认为所有文化都同意一套基本价值观的信念。然而，尽管专制主义可能是错误的，但假设的强烈的非此即彼的命题，即专制主义或相对主义是正确的，也是错误的，因为一个否定这种专制主义的人可能一致地相信仍然存在一种正确的做事方式。因此，当专制主义被解释为对事实相对主义的否定时，论证的假设是错误的，而在这种专制主义意义下，结论也没有得到证实。­tently believe that there still is one proper way to do things. Hence, the argument’s assumption is false, when
2. Assume that absolutism is the belief that there is a set of value principles that we know and that can be applied clearly and without exception. Then again, absolutism is probably false. Value principles generally do have exceptions and borderline cases. But is this kind of absolutism the only alternative to relativism? No. A person could believe that there is a set of rough principles—not exceptionless—that are basically correct. Thus again the assumed strong alternation is false, given this interpretation of absolutism. Again, the conclusion is not established, given this second sense of absolutism.  
   假设专制主义是一种信仰，即存在一套我们所知道并且可以明确且无例外地应用的价值原则。然而，专制主义很可能是错误的。价值原则通常会有例外和边界情况。但是，这种专制主义是相对主义的唯一替代方案吗？不是。一个人可以相信存在一套大致正确但不是无例外的原则。因此，根据对专制主义的这种解释，再次假设的强烈替代是错误的。再次强调，在这种对专制主义的第二种意义下，结论并未得出。­tion of
3. Lastly, make the supposition that absolutism is the belief that the principles by which we operate are at least for the most part true, and that although there are many borderline cases, there are at least some things that are clearly wrong and some that are clearly right. (I realize that this interpretation is confusing and does violence to what most of us mean by absolutism, but some people, in my experience, do sometimes interpret it this way.) In this case, the assumed strong alternation might in fact be true, but absolutism in this sense has not been shown false. Again, the conclusion is not established, given this third possible sense of absolutism.  
   最后，假设绝对主义是一种相信我们运作的原则至少在很大程度上是真实的信念，尽管存在许多模糊边界的情况，但至少有一些事情是明显错误的，有一些事情是明显正确的。（我意识到这种解释令人困惑，并且对于我们大多数人所理解的绝对主义来说是错误的，但根据我的经验，有些人有时确实会这样解释。）在这种情况下，假设的强烈交替可能实际上是真实的，但在这个意义上的绝对主义尚未被证明是错误的。同样，鉴于绝对主义的这种第三种可能意义，结论尚未得到证实。­

My appraisal of the pro-relativist argument consists of a denial of the assumed strong alternation (either absolutism or relativism) unless absolutism is interpreted in the third way, in which case, absolutism has not been shown false. Thus, the conclusion is not established, whichever way we interpret the argument.  
对于相对主义论点的评价，我否定了所假设的强烈对立（绝对主义或相对主义），除非将绝对主义解释为第三种方式，否则绝对主义并未被证明为假。因此，无论我们如何解释这个论点，都无法得出结论。­sion is not established, whichever way we interpret

Although this presentation is simplified and the points and counterpoints can get much more complex, the basic strategy should be clear. Whether or not you agree with the overall appraisal, I hope that you understand the one-interpretation-at-a- time strategy. Table 11:2 summarizes this use of the strategy.   
尽管这个演示很简化，观点和反驳可以变得更加复杂，但基本策略应该是清晰的。无论您是否同意总体评估，我希望您能理解一次只解释一种解释的策略。表11:2总结了这种策略的使用。

|  |  |
| --- | --- |
| **TABLE 11.2 The One-lnterpretation-at-a-Time Strategy Applied to an Argument that Offers Relativism and Absolutism as Exclusive Alternants** | |
| *Interpretation of Absolutism* | *Appraisal of the Argument* |
| 1. Factual Absolutism: All cultures actually agree on values | 1. The reason “Absolutism is false” is true, but the alleged exclusive alternation is false, so the argument is defective. |
| 2. Value Absolutism: There is one and only one set of justified value principles, and these can be applied clearly and without exception. | 2. The reason “Absolutism is false” is probably true, but the alleged exclusive alternation is false, so the argument is defective. |
| 3. Loose Absolutism (which is probably mislabeled when called absolutism): Many of our principles, though there are borderline cases and exceptions, are at least for the most part true. | 3. The reason “Absolutism is false” is dubious and certainly has not been shown to be true, although the exclusive alternation, under this interpretation of *absolutism,* might well be true or close to it, so the argument is defective. |

In sum, the argument is defective, no matter which of these three senses of absolutism, is chosen. Is there another?  
总之，无论选择这三种绝对主义的哪一种意义，这个论点都是有缺陷的。还有其他吗？

Summary  
摘要

There are two broad types of value-judgment relativism, cultural and personal. Cultural relativism in turn has three primary types: basic cultural relativism, factual relativism, and sophisticated relativism. I could also have broken personal relativism down into three comparable types, but to save time and space, onlv considered the kind of personal relativism that is comparable to basic cultural relativism.  
有两种广义的价值判断相对主义，文化相对主义和个人相对主义。文化相对主义又分为三种主要类型：基本文化相对主义、事实相对主义和复杂相对主义。我也可以将个人相对主义分为三种可比较的类型，但为了节省时间和空间，只考虑了与基本文化相对主义相似的个人相对主义。

­matically condemns all moral reformers and leads to inconsistency or to excessive restraint.Basic cultural relativism is the view that whatever is approved by a culture is right for the people of that culture. It suffers from at least two difficulties: It automatically condemns all moral reformers and leads to inconsistency or to excessive restraint.  
基本的文化相对主义是一种观点，即文化所认可的一切对于该文化的人民来说都是正确的。它至少存在两个困难：它自动谴责所有的道德改革者，并导致不一致或过度克制。

Factual cultural relativism is the view that there are actual disagreements among different cultures about value judgments. This view is probably correct, but it does not thereby establish the two other types of cultural relativism.  
事实文化相对主义是指不同文化之间存在关于价值判断的实际分歧。这个观点可能是正确的，但并不能因此建立其他两种类型的文化相对主义。

­ing one value principle or judgment over another. In my experience, the adherents of this view do not actually accept it when dealing with things that really matter to them.Sophisticated cultural relativism is the view that there is not any wav of establishing one value principle or judgment over another. In my experience, the adherents of this view do not actually accept it when dealing with things that really matter to them.  
复杂的文化相对主义是一种观点，认为没有任何一种方式能够建立一个价值原则或对另一个进行判断。根据我的经验，这种观点的拥护者在处理真正关乎他们的事情时并不真正接受它。

Personal relativism has the problem that either it eliminates value disagreements that we know do exist, or it forces one to say conflicting or insufferably arrogant things.  
个人相对主义存在一个问题，要么它消除了我们知道存在的价值分歧，要么它迫使人们说出相互矛盾或令人无法忍受的傲慢言论。

The argument for relativism that leans on an alternation between absolutism and relativism, and on showing that the first alternant must be wrong, does not work. Depending on the interpretation of absolutism, there is either another alternative to the two suggested, or the defectiveness of absolutism is not shown. There is much more to be said about this argument and about the topic of relativism, but these things should get you started and should dispel some elementary mistakes that some are inclined to make.   
依赖于绝对主义和相对主义之间的交替，并且通过显示第一个替代者必定是错误的来支持相对主义的论证是无效的。根据绝对主义的解释，要么存在另一种替代方案，要么绝对主义的缺陷没有被证明。关于这个论证和相对主义的话题还有很多要说的，但这些内容应该能帮助你入门，并消除一些人们容易犯的初级错误。

In this section on relativism, as well as in the entire value judgment chapter, there has been much emphasis on clarity of meaning, the C in FRISCO. Meaning often assumes great importance when the topic is abstract and difficult.  
在相对主义这一部分，以及整个价值判断章节中，对于意义的清晰度，FRISCO中的C都非常强调。当主题抽象而困难时，意义往往具有重要性。

You have probably noticed that this section on relativism consisted mostly of argument. In Chapter 13 in a section on argument strategy and tactics, I shall use some of these arguments as examples.  
你可能已经注意到，相对主义这一部分主要是关于论证的。在第13章的论证策略和战术部分，我将使用其中一些论证作为例子。

Check-Up 11C

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

11:32 Basic cultural relativism holds that whatever is approved by a culture is right for the people who belong to the culture.  
基本的文化相对主义认为，任何被一种文化认可的事物对于属于该文化的人来说都是正确的。

11:33 Factual relativism is the view that basic cultural relativism is correct.  
11:33 事实相对主义是基本文化相对主义是正确的观点。

11:34 Sophisticated cultural relativism is the view that there is no way of deciding among conflicting values.  
11:34 高级文化相对主义是一种观点，认为在相互冲突的价值观之间没有办法做出决定。

11:35 Personal relativism, as here challenged, holds that whatever is approved by the speaker is right.  
11:35 个人相对主义，如此处所质疑的，认为演讲者认可的任何事情都是正确的。

­tivism is that it leads to inconsistent judgments.11:36 One accusation that cannot fairly be made against basic cultural relativism is that it leads to inconsistent judgments.  
11:36 一个不能公正地对基本文化相对主义提出的指责是它导致了不一致的判断。

11:37 If what the speaker approves is by definition what is right, then (if they are sincere) both sides in an argument about a value judgment are right in this sense of the word right, but that is a contradiction.  
11:37 如果演讲者认可的东西从定义上来说就是正确的，那么（如果他们是真诚的）在关于价值判断的争论中，双方都在这个意义上是正确的，但这是一个矛盾。

Medium Answer  
中等答案

For each of the following, write a one-page essay starting with your conclusion, and then giving reasons for your conclusion. Pay attention to the criteria for a position paper given in Chapter 1. Use examples in giving your reasons.  
对于以下每个问题，请写一篇一页的文章，以你的结论为开头，然后给出支持你结论的理由。注意第一章中给出的立场论文的标准。在给出理由时使用例子。

11:38 Argue in support of the conclusion that value judgments endorsed by different cultures do in fact differ sometimes.  
有时候，不同文化所认可的价值判断确实会有所不同。

11:39 Argue against the view that democratic countries should not attempt to change the totalitarian ways of other countries. Assume that the view you are arguing against is grounded on the basic cultural relativist assumption that whatever is in a culture is right for the people of that culture. Be sure to include a challenge to this basic cultural relativist assumption and give your reasons for this challenge.  
11:39 反驳民主国家不应该试图改变其他国家的极权主义方式的观点。假设你要反驳的观点是基于基本的文化相对主义假设，即文化中的一切都是适合该文化人民的。一定要对这个基本的文化相对主义假设提出质疑，并给出你质疑的理由。

11:40 Refute this argument: It is right for Jones to cheat on a law school aptitude test because whatever a person approves of is right for that person to do, and Jones approves of the cheating. Be sure to show one or more problems with this personal relativist view.  
11:40 反驳这个论点：琼斯在法学能力测试中作弊是正确的，因为一个人认可的事情对于该人来说是正确的，而琼斯认可作弊。请确保展示出这种个人相对主义观点的一个或多个问题。

­ple in a certain group (or population) who accept each of the three kinds of cultural relativism. In your plan, make it clear how you will tell whether someone accepts each of the three types. (For example,11:41 Plan a survey in which you will try to find out the percentages of people in a certain group (or population) who accept each of the three kinds of cultural relativism. In your plan, make it clear how you will tell whether someone accepts each of the three types. (For example, state the question that you will ask and tell how to interpret the possible answers.) Make this easy enough for you actually to do the survey, paying attention to the principles of sampling and generalizing in Chapter 10. Do not expect perfection, but be aware of, and specify, the limitations of your procedures.  
11:41计划进行一项调查，您将尝试找出某个特定群体（或人口）中接受三种文化相对主义的人的百分比。在您的计划中，清楚地说明您将如何判断某人是否接受了这三种类型。（例如，陈述您将要问的问题，并说明如何解释可能的答案。）使这项调查足够简单，以便您能够实际进行，并注意第10章中的抽样和概括原则。不要期望完美，但要意识到并明确指出您的程序的局限性。­ble answers.) Make this easy enough for you actually to do the survey, paying attention to the principles of sampling and generalizing in Chapter 10. Do not expect perfection, but be aware of, and specify,

**11:42 Do the survey you planned in 11:41 and write a report for an audience you specify, or orally present a report to this class.  
11:42按照你在11:41计划的调查进行，并为特定的观众撰写一份报告，或者向本班口头报告。**

Suggested Answers for Chapter 11  
第11章的建议答案

**Check-Up 11A**

11:1 T 11:2 F 11:3 F 11:4 F 11:5 T

**11:2 Change a value, statement to some factual statements.  
11:2 将一个值、语句改为一些事实陈述。**

**11:3 Typically, even the best value principles have exceptions.  
11:3 通常，即使是最好的价值原则也有例外情况。**

**11:4 There can be both true and false factual statements.  
11:4 可以存在真实和虚假的事实陈述。**

**11:6** Value **11:7** Factual **11:8** Factual **11:9** Value

**11:10** Value **11:11** Factual **11:12** Value **11:13** Value

*Note: In discussing Examples 11:14,11:15, and 11:17,1 have used concepts from Chapters 5 and 6. If these concepts bewilder you, then you might find it helpful to reexamine the relevant parts of those chapters.  
注意：在讨论示例11:14、11:15和11:17时，我使用了第5章和第6章的概念。如果这些概念让你感到困惑，那么重新审视这些章节的相关部分可能会对你有帮助。*

**11:14 a. The United States should have stayed out of World War I.  
11:14 a. 美国应该远离第一次世界大战。**

b. It follows, as shown in the following diagram:  
它遵循如下图所示：

,/ wars that the United States should have  
美国应该有的战争

/ stayed out of

wars that did not affect the basic interests of the U.S.  
没有影响美国基本利益的战争。

World War I  
第一次世界大战

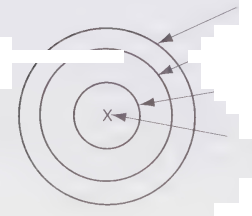
**11:15** Deliberately omitted.

**11:16 a. It would be wrong to tell the teacher about it. b. It follows: the antecedent has been affirmed.  
11:16 a. 不能告诉老师。 b. 接下来是：前项已被确认。**

**11:17** Deliberately omitted.

**11:18 a. Michael’s intercepting and destroying Bill’s love letter to Juanita was not unethical.  
11:18 a. Michaels拦截并销毁Bills给Juanita的情书并不违反道德。**

**b. It follows, assuming that whatever is fair is not unethical, as shown by the following diagram:  
它遵循以下图表所示的假设，即任何公平的事物都不是不道德的。**

/ things that are not unethical  
不道德的事物

things done in love and war

fair things

Michael's intercepting and destroying Bill's love letter to Juanita   
迈克尔拦截并销毁了比尔写给胡安妮塔的情书。

**Check-Up 11B**

11:19 F 11:20 T 11:21 F 11:22 T

**11:19 Change inapplicable to applicable.  
11:19 变更不适用为适用。**

**11:21 Change is more precise to is often more practical or is less precise.  
11:21 更精确的变化通常更实用或不太精确。**

**11:23-11:31 These are up to you. Have you reviewed and revised?  
11:23-11:31 这些由你决定。你已经复查和修订了吗？**

**Check-Up 11C**

**11:32 T 11:33 F 11:34 T 11:35 T 11:36 F**

11:37 F

**11:33 Factual relativism is the view that the value judgments supported by different groups arc often different and conflicting.  
11:33 事实相对主义是一种观点，认为不同群体支持的价值判断通常是不同和相互冲突的。**

**11:36 Change cannot to (an.  
11:36 更改为（an）**

**11:37 Omit the last clause, but that is a contradiction.  
11:37 省略最后一句从句，但这是一个矛盾。**

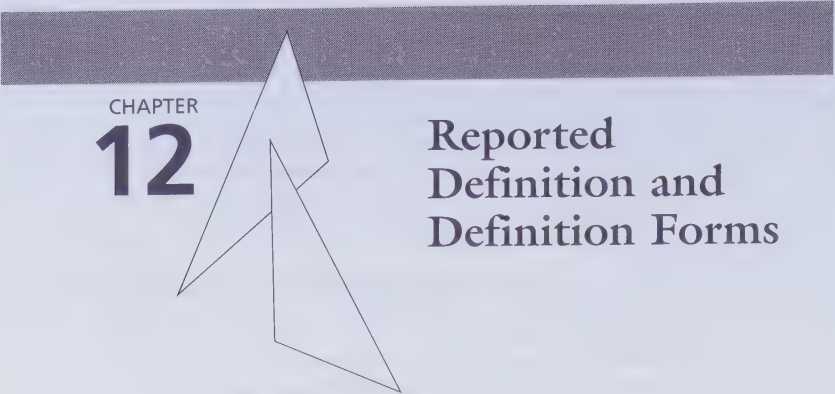
**11:38 An argument of this sort appeared in the discussion of this topic. I hope yours used a different example than the eating of the meat of cattle, and I hope that you stated your conclusion clearly, making apparent that it is your conclusion.  
11:38 这个话题的讨论中出现了这样的争论。我希望你的例子不同于食用牛肉，并且希望你清楚地陈述你的结论，使其显而易见是你的结论。**

**11:39 In your argument you might well have shown how the assumed view leads to contradictory recommendations. You also might well have pointed out some of the incredibly vicious practices of some totalitarian governments, practices that a democratic government is committed to avoiding. Again, I hope that you stated your conclusion clearly and indicated that it is your conclusion.  
11:39 在你的论点中，你很可能展示了假设观点如何导致矛盾的建议。你也很可能指出了一些极其恶劣的某些极权政府的做法，这些做法是一个民主政府致力于避免的。再次，我希望你清楚地表明了你的结论，并指出这是你的结论。**­ian governments, practices that a democratic government is committed to avoiding. Again, I hope that you stated your conclusion clearly and indicated that it is your conclusion.

**11:40 You are on your own on this one.  
11:40 你自己处理吧。**

**11:41 Again you are on your own, but make sure that you have satisfied this question: Do your questions (or other ways of deciding what people think) actually work fairly well?  
11:41 再次你独自一人，但确保你已经满足了这个问题：你的问题（或其他决定人们思考的方式）是否真的运作得相当好？**

**11:42 I hope that you found it interesting, and that your audience did also.  
11:42 我希望你觉得它有趣，也希望你的听众也觉得有趣。**



In the jury room, the phrase proven beyond a reasonable doubt caused great difficulty. In trying to decide whether Arlene was justified in using the force she used, we were concerned with whether Al had hit her and threatened to kill her, as she had claimed. She had been examined the night of the killing and no bruises were found on her. Other evidence was presented to show that she had not been beaten. Furthermore Arlene’s little brother reported that he only heard Al say, “Arlene, I want to talk to you.” The prosecutor held that she was not justified in using the force she used. But had the state proven this beyond a reasonable doubt? Might Al actually have hit her and threatened to kill her?  
在陪审团室里，短语“超出合理怀疑的证明”引起了很大困难。在试图决定Arlene是否有正当理由使用她使用的武力时，我们关心的是Al是否打了她并威胁要杀她，就像她所声称的那样。在杀人案发生的那天晚上，她接受了检查，没有发现她身上有淤伤。还提供了其他证据表明她没有被打过。此外，Arlene的小弟弟报告说，他只听到Al说：“Arlene，我想和你谈谈。”检察官认为她使用的武力是没有正当理由的。但是国家是否已经超出合理怀疑地证明了这一点？Al是否真的打了她并威胁要杀她？

­nition of After much discussion about the issue, some jurors felt that we needed a definition of proven beyond a reasonable doubt. We decided to send to the judge a request for a definition of this set of words. About a half hour later his reply came back: “There is no definition of proven beyond a reasonable doubt. Do the best you can.” This unexpected response threatened to end the deliberation. So I decided to hazard a definition off the top of my head without having had the time to formulate a definition carefully. Something was needed, even though, in a way, we all knew what the phrase means. I thought that the meaning could be stated, albeit vaguelv (because the concept itself is somewhat vague), and made the following hastv suggestion: “To say that something is proven beyond a reasonable doubt is to sav that it would not make good sense to deny that thing.” What I was trying to do was to report a meaning in accord with standard usage of that set of terms, which is what dictionaries try to do.  
经过对这个问题的讨论，一些陪审员认为我们需要一个“超出合理怀疑的证明”的定义。我们决定向法官发送一个关于这组词的定义的请求。大约半小时后，他的回复回来了：没有“超出合理怀疑的证明”的定义。尽力而为吧。这个意外的回答威胁到了我们的商议。所以我决定冒险从脑海中给出一个定义，而没有时间仔细构思一个定义。尽管在某种程度上，我们都知道这个短语的意思，但还是需要一些东西。我认为这个意思可以被陈述出来，尽管有些模糊（因为这个概念本身就有些模糊），于是我提出了以下匆忙的建议：说某事被“超出合理怀疑的证明”意味着否认那件事情将没有意义。我试图做的是根据这组词的标准用法来报告一个意思，这也是字典试图做的事情。­nition carefully. Something was needed, even though, in a way, we all knew what the phrase means. I thought that the meaning could be stated, albeit vaguelv (because the concept itself is somewhat vague), and made the following hastv suggestion: “To say that something is

Thinking about it later, I realized at least one improvement that I could have made in order to make definition a more accurate report of standard usage of the words proven beyond a reasonable doubt. Can you think of anv improvements in my hastily formulated definition?  
思考后，我意识到至少有一个改进，可以使定义更准确地报告单词的标准用法，证明超出合理怀疑。你能想到我匆忙制定的定义中的任何改进吗？

­thing they did not already know. But the situation called for a restatement in other words of the idea of proof beyond a reasonable doubt. The other jurors had a degree of special respect for me because they knew me to be a professor and teacher of logicWhen I was giving that definition in that situation, I was not telling people anything they did not already know. But the situation called for a restatement in other words of the idea of proof beyond a reasonable doubt. The other jurors had a degree of special respect for me because they knew me to be a professor and teacher of logic and critical thinking. Thus, they had an understandable report of the standard usage of the crucial phrase from someone who appeared to satisfy the criteria for credibility. So they took my word.  
当我在那种情况下给出那个定义时，我并没有告诉人们任何他们不知道的东西。但是情况要求用其他话语重新阐述合理怀疑证明的概念。其他陪审员对我有一定特殊的尊重，因为他们知道我是一位逻辑和批判性思维的教授和教师。因此，他们对来自一个看起来符合可信度标准的人对关键短语的标准用法有一个可以理解的报告。所以他们相信我的话。­ity. So they took my word.

We did finally decide that it had been proven beyond a reasonable doubt that she was not justified in using the force she used. The definition I gave, despite its defects, enabled us to discuss the matter. In this situation, I believe that the defects in the definition did not affect the argument.  
我们最终决定，已经证明她使用的武力是毫无理由的。尽管我提供的定义存在缺陷，但它使我们能够讨论这个问题。在这种情况下，我相信定义的缺陷并没有影响到论点。

This chapter and the next are concerned with definition. The Cof FRISCO will thus be emphasized. But other elements will be emphasized also because definitional acts take place in situations in which other things are happening.  
本章和下一章涉及定义。因此，Cof FRISCO将受到强调。但其他元素也将受到强调，因为定义行为发生在其他事情正在发生的情境中。

We shall begin with a look at one very common kind of thing people try to do under the label definition: Report meanings that are in accord with usage. It is what I was trying to do with proven beyond a reasonable doubt.  
我们将从一个非常常见的事情开始，人们试图在定义标签下做的事情：报告与使用相符的意义。这就是我试图用无可置疑地证明来做的事情。

Reported Definition  
报告定义

A reported definition is an attempt to give the meaning of a word as the word was or is used. Usually (as in dictionaries), the attempt is to give standard usage of a term or phrase. That is, the attempt is to give the meaning of the word as the word is conventionally used. I tried to do this with the phrase proven beyond a reasonable doubt. A reported definition is then a factual statement. It can be correct, incorrect, or “roughly speaking” correct, etc. My reported definition of proven beyond a reasonable doubt was, roughly speaking, correct; it was sufficiently correct to get the discussion moving again without confusing anybody in that context.  
报告的定义是试图给出一个词的意义，就像这个词被使用过或正在使用一样。通常（如字典中），这样的尝试是为了给出一个术语或短语的标准用法。也就是说，这样的尝试是为了给出一个词的意义，就像这个词被传统上使用一样。我试图用短语“超出合理怀疑”的报告定义来做到这一点。报告的定义是一个事实陈述。它可以是正确的、不正确的，或者是粗略地正确的等等。我的关于“超出合理怀疑”的报告定义是粗略地正确的；它足够正确，可以在不混淆任何人的情况下重新引发讨论。­

Actually, my use of a reported definition was not typical in that I was telling them something they already knew. Usually, we give a reported definition to tell our audience something that it does not already know. In Chapter 4, I gave the follow­ing reported definition of *hearsay:* “Roughly speaking, *hearsay* is testimony that reports what someone else said with the intention of persuading the listener of the truth of what was said.”

My intention was to inform you in case you did not already know. In the jury room I gave a simpler but similar reported definition of hearsay when a juror wondered what hearsay is. Again, my intention was to inform someone by reporting what I believed to be standard usage.  
实际上，我使用的一种被报道的定义并不典型，因为我告诉他们的是他们已经知道的事情。通常，我们给出一个被报道的定义是为了告诉我们的观众一些他们还不知道的东西。在第四章中，我给出了以下关于传闻的被报道的定义：粗略地说，传闻是报告别人说过的话，目的是说服听众所说的话的真实性。我的意图是在你还不知道的情况下告诉你。在陪审团室里，当一个陪审员想知道什么是传闻时，我给出了一个更简单但类似的被报道的定义。再次，我的意图是通过报告我认为是标准用法的东西来告诉某人。­dered

Sometimes a reported definition is not of standard usage, but only a report of how a particular person used a term on a particular occasion. When one juror asked to be reminded what the pathologist meant by moderate stroke, the response of another juror was a reported definition. It was a report of the pathologist’s usage of that term on that occasion. The other juror did this by repeating the pathologist’s demonstration of the speed of the arm movement that the pathologist called moderate. This was an informal sort of definition, but in that case, as with the pathologist’s original definition, acting it out was the best way to convey meaning in those circumstances. More about the way to present definitions later. The point here is that reported definitions do not always report standard usage. Sometimes they report a special usage of a term.   
有时候，所报道的定义并不是标准用法，而只是某个特定人在某个特定场合使用某个术语的报告。当一个陪审员要求被提醒病理学家所说的"中度中风"是什么意思时，另一个陪审员的回应是一个报道的定义。这是对病理学家在那个场合使用该术语的报告。另一个陪审员通过重复病理学家所称的"中度"的手臂运动速度来做到这一点。这是一种非正式的定义，但在那种情况下，就像病理学家最初的定义一样，通过行动来传达意义是最好的方式。关于如何呈现定义的更多内容稍后再谈。这里的重点是报道的定义并不总是报告标准用法。有时它们报告的是一个术语的特殊用法。*­ate.*­cumstances. More about the way to present definitions later. The point here is that reported definitions do not always report standard usage. Sometimes they report a special usage of a term.

Roughly speaking, a reported definition is satisfactory to the extent that it reflects the usage it is intended to reflect, given the situation, assuming that it is put in a way that the audience can understand it. My definitions of proven beyond a reasonable doubt and hearsay were satisfactory to the extent that they reflected standard legal usage for those phrases and were put in a way that the jurors understood. The juror’s definition of moderate stroke was adequate if it adequately reflected the pathologist’s usage of the term moderate stroke and was understandable.  
大致而言，一个被报道的定义在反映其意图所要反映的用法方面是令人满意的，考虑到情况，假设它以观众能够理解的方式表达。我的对“超出合理怀疑”的定义和“传闻”的定义是令人满意的，因为它们反映了这些短语的标准法律用法，并以陪审团能够理解的方式表达。如果陪审团对“中风”这个术语的定义充分反映了病理学家对“中风”这个术语的用法，并且能够被理解，那么他们对“中风”的定义是合适的。*­sonable doubt*­ogist’s

Testing a Reported Definition  
测试一个报告的定义

To test a reported definition that is intended to reflect standard usage, it is often a good idea to try to think of various examples that come under the term being defined. Then see whether they come under the other part of the definition, and vice versa. For example, consider this reported definition of pencil:  
为了测试一个旨在反映标准用法的报告定义，通常可以尝试思考一些属于被定义术语的各种例子。然后看看它们是否符合定义的另一部分，反之亦然。例如，考虑这个关于铅笔的报告定义：

Example 12:1

A pencil is a writing implement containing graphite.  
铅笔是一种含有石墨的书写工具。

*Pencil* is the term being defined. The rest of the definition (that is, the defining part) is *writing implement containing graphite.* (A definition has two parts: the term being defined, and the part doing the defining.)

­ing part also fits these examples. That is, see whether these examples are writing implements containing graphite. Then do it the other way around. Find examples of writing implements containing graphite. Then see whether they are pencils. By and large, if one part fits, but not the other, then you have found a counterexample to the definition. The ideal is to have no counterexamples. This ideal would be rarely attained if the goal of reported definition were to present universal truths. But pro­ducing universal exceptionless truths should usually not be the goal To apply the test, think of examples of pencils and then see whether the defining part also fits these examples. That is, see whether these examples are writing implements containing graphite. Then do it the other way around. Find examples of writing implements containing graphite. Then see whether they are pencils. By and large, if one part fits, but not the other, then you have found a counterexample to the definition. The ideal is to have no counterexamples. This ideal would be rarely attained if the goal of reported definition were to present universal truths. But producing universal exceptionless truths should usually not be the goal of a reported definition. Rather, the goal should be to produce a definition that is adequate for the situations in which it might be used. For example, we might have a piece of chalk with a piece of graphite jammed into it for some reason. This would not be a pencil, but it would not prove the definition inadequate. The definition is adequate for the situations in which I envision its use. Reported definitions are to be judged according to whether they are good enough for the situation (the S in FRISCO).  
铅笔是被定义的术语。定义的其余部分（即定义部分）是含有石墨的书写工具。（定义有两个部分：被定义的术语和进行定义的部分。）要应用这个测试，想象一些铅笔的例子，然后看看定义部分是否也适用于这些例子。也就是说，看看这些例子是否是含有石墨的书写工具。然后反过来做。找到一些含有石墨的书写工具的例子。然后看看它们是否是铅笔。总的来说，如果一个部分适用，但另一个部分不适用，那么你就找到了一个对定义的反例。理想情况下，不应该有反例。如果报告定义的目标是提出普遍真理，这个理想很少能够实现。但是，通常情况下，制定普遍无例外的真理不应该是报告定义的目标。相反，目标应该是制定一个在可能使用的情况下足够的定义。例如，我们可能有一块粉笔里塞了一块石墨，出于某种原因。这不是一支铅笔，但它并不证明定义是不足的。这个定义对我设想的使用情况是足够的。根据是否足够适用于情况（FRISCO中的S）来评判报告的定义。­inition. Rather, the goal should be to produce a definition ­uations in which it might be used. For example, we might have ­ations in which I envision its use. Reported definitions are to be judged according to

Consider these two definitions of the word triangle:  
考虑以下两个对三角形这个词的定义：

Example 12:2

A triangle is a closed figure consisting of three straight line segments.  
三角形是由三条直线段组成的闭合图形。

Example 12:3

A triangle is a figure with three sides.   
三角形是一个有三条边的图形。

Although Example 12:3 is easier to understand (and thus might be better to use for initial teaching of the idea of a triangle), there are obvious counterexamples to Example 12:3. Imagine a three-sided figure with its sides made up of lines each shaped like an S, as in Diagram 12:1;  
尽管示例12:3更容易理解（因此在最初教授三角形概念时可能更好），但示例12:3存在明显的反例。想象一个三边形，其边由每条线都呈S形状组成，如图12:1所示；

Diagram 12:1

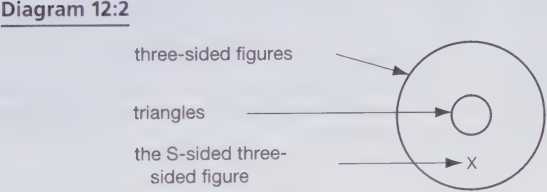


The figure in Diagram 12:1 is not a triangle, although according to Example 12:3, it would be a triangle. Therefore, this figure is a counterexample to Example 12:3. Example 12:2, although more difficult to understand, is less vulnerable to counterexamples. It is a more accurate report of the standard usage of the word triangle.  
图12:1中的图形不是一个三角形，尽管根据例子12:3，它应该是一个三角形。因此，这个图形是例子12:3的反例。例子12:2虽然更难理解，但对反例的容忍度较低。它更准确地报告了三角形这个词的标准用法。

Using Circles to Exhibit Defects and Success in a Definition  
使用圆圈展示定义中的缺陷和成功

Sometimes it helps to draw circles to exhibit the relationship between the two parts of a reported definition. In Example 12:3, the word triangle is the term being defined; the phrase three-sided figure is the defining part. Note that I have omitted the word is, which works like an equals sign (=) in an ideal definition.  
有时候，画圆圈来展示一个定义中两个部分之间的关系是有帮助的。在例子12:3中，三角形是被定义的术语；三边形状是定义的一部分。请注意，我省略了“是”这个词，它在理想的定义中起到等号（=）的作用。

A diagram of the relationship between these two parts of the definition in Example 12:3 show's the circle for the defining part outside the circle for the term being defined.  
这两个定义部分之间关系的图表在示例12:3中显示，定义部分的圆圈在被定义的术语的圆圈外面。



This diagram states that the definition has the defect of having the defining part represent a class that is larger than the other class or, in this case, that there are three- sided figures that are not triangles. (The S-sided three-sided figure is an example.) Circle diagrams are a way of explaining this sort of defectiveness to other people.  
该图表说明了定义的缺陷，即定义部分代表的类别比其他类别更大，或者在这种情况下，存在不是三角形的三边图形（S边三边图形是一个例子）。圆形图表是向他人解释这种缺陷的一种方式。

**Note that in contrast to the use of circles to test the deductive validity of   
请注意，与使用圆圈来测试演绎有效性相反，**

**arguments, these circles all represent actualities, not possibilities. The circle for triangles represents all triangles. The circle for three-sided figures represents all three- sided figures, not just an unruled-out possibility that there are three-sided figures that are not triangles.  
这些圆圈都代表实际情况，而不是可能性。三角形的圆圈代表所有的三角形。三边图形的圆圈代表所有的三边图形，而不仅仅是一个未排除的可能性，即存在着不是三角形的三边图形。**

Example 12:4 is another defective definition, if treated as a reported definition of the term car in its standard meaning.  
Example 12:4是另一个有缺陷的定义，如果将其视为对汽车这个术语在其标准含义上的报告定义。

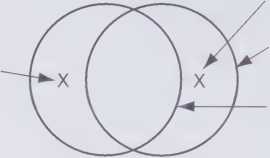
Example 12:4

A car is a four-wheel land motor vehicle mainly for use on public roads.  
汽车是一种四轮陆地机动车辆，主要用于公共道路。

Can you think of any clear and obvious counterexamples to this definition?  
你能想到这个定义的任何明显的反例吗？

One counterexample to this definition of car'∖s my neighbor’s pick-up truck. It is not what I would call a car, yet it fits the defining part. Another counterexample is the car that won last year’s Indy 500. It is a car, yet it does not fit the defining part. It was not designed for use mainly on public roads. Here is a circle diagram of this situation:  
对于这个对汽车的定义来说，有一个反例就是我的邻居的皮卡车。它不是我所称之为的汽车，但它符合定义的一部分。另一个反例是去年赢得印第安纳波利斯500的那辆车。它是一辆汽车，但它不符合定义的一部分。它并不是主要设计用于公共道路上。这是这种情况的一个圆形图表：

Diagram 12:3



my friend's pick-up truck

a racing car

cars

four-wheel land motor vehicles designed mainly for use on public roads

This diagram of two overlapping circles shows that there are cars that do not fit the defining part (racing cars) and that there are things that fit the defining part that are not cars (pick-up trucks). The car definition is both too restrictive and too liberal. (Do not be bothered by the fact that the size of the circles and the overlap are not truly proportional.)

You have seen a definition that was defective because the defining part included too much. You have seen one that was defective because the defining part included too much and also was too restrictive. A third way that a reported definition can be defective is by only being too restrictive:  
这个两个重叠圆的图示表明有些车辆不符合定义的部分（赛车），也有些符合定义的部分却不是车辆（皮卡车）。车辆的定义既过于限制，又过于宽泛。（不要被圆的大小和重叠部分的比例不准确所困扰。）你已经见过一个定义有缺陷，因为定义的部分包含了太多。你也见过一个定义有缺陷，因为定义的部分既包含了太多又过于限制。第三种报告的定义有缺陷的方式是只过于限制。

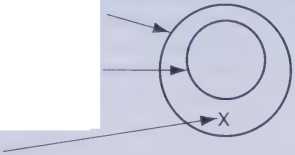
Example 12:5

*Proof beyond a reasonable doubt is proof that is deductively valid and that has true premises.  
超出合理怀疑的证据是具有演绎有效性和真实前提的证据。*

This definition is too restrictive because there arc proofs beyond a reasonable doubt that are not deductively valid. One example is the prosecutor’s proof (in

Chapter 2) of his conclusion that Arlene performed the act that caused Al’s death. This proof, because it is not deductively valid, is a counterexample to the definition, and shows that the defining part is too restrictive. A circle diagram can show this situation:  
这个定义太过严格，因为有些证据是超出合理怀疑范围的，而且并非演绎有效。一个例子是检察官在第二章中对他的结论进行证明，即阿琳造成了艾尔的死亡。这个证据并非演绎有效，因此是对该定义的反例，表明定义的部分过于严格。一个圆形图可以展示这种情况。

Diagram 12:4

proofs beyond a reasonable doubt  
无可置疑的证据

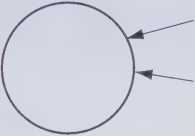
proofs that are deductively valid and have true premises

the prosecutor's proof

In this case, the deviation from standard usage mattered because one of the jurors was using the deductive definition, resulting in his refusing—for a while—to accept any other kind of proof.  
在这种情况下，与标准用法的偏差很重要，因为其中一名陪审员使用了演绎定义，导致他一度拒绝接受任何其他类型的证据。

The ideal for a reported definition is to have the two parts cover exactly the same area, that is, to have coextensive circles (circles that lie on top of each other and appear as only one circle), as in Diagram 12:5, which diagrams Example 12:2:  
一个被报道的定义的理想情况是两个部分完全覆盖相同的区域，也就是说，具有共同的圆（彼此重叠并且只看起来像一个圆），如图12:5所示，它描述了示例12:2的图示：

Diagram 12:5



triangles

closed figures consisting of three straight line segments

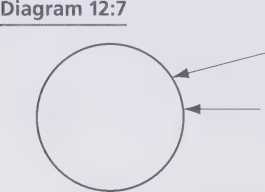
­pret the words Actually, it is difficult to satisfy this ideal completely for terms in everyday use. For example, would you call Diagram 12:6 a triangle? I am reluctant to do so, yet it satisfies the defining part of Example 12:2, according to one way that we might interpret the words closed figure in that definition.  
实际上，对于日常使用的术语来说，完全满足这个理想是困难的。例如，你会称 Diagram 12:6 为三角形吗？我不愿这样称呼，但它满足了 Example 12:2 的定义部分，根据我们可能解释该定义中的闭合图形这一词语的方式。

Diagram 12:6



­I invite you to try to make a true precise reported definition of some term in its standard meaning that has no counterexamples. Then see whether a friend can pro duce a counterexample. It is instructive to do this, both to make the definition and to try to produce a counterexample. Because you have not yet read about different ways of formulating definitions, it might be difficult even to start making such a definition, but give it a try. You already know something about formulating definitions because you have often done it. Furthermore, trying to make some definitions will help you get warmed up for the next part of this chapter.  
我邀请你尝试对某个术语进行真实准确的报告定义，该定义在其标准含义中没有反例。然后看看是否有朋友能提出反例。这样做是有教益的，既可以制定定义，也可以尝试提出反例。由于你还没有阅读过不同制定定义的方法，可能很难开始制定这样的定义，但试试看。你已经对制定定义有一些了解，因为你经常这样做。此外，尝试制定一些定义将帮助你为本章的下一部分做好准备。­inition, but give it a try. You already know something about formulating definitions because you have often done it. Furthermore, trying to make some definitions will help you get warmed up for the next part of this chapter.

When you are offering a reported definition in a discussion, take steps to avoid being sidetracked by challenges that do not bear on your basic points. First of all, try to state the definition correctly, avoiding obvious counterexamples. Second, you might well include loosening qualifiers such as roughly speaking and by and large. Third, it is often wise to admit in advance that there are borderline cases that do not affect your main point, which provides the situation (S) for the definition, but make sure that these borderline cases really do not affect your main point.  
当你在讨论中提供一个报告的定义时，采取措施避免被与你的基本观点无关的挑战所分散注意力。首先，尽量准确陈述定义，避免明显的反例。其次，你可以包含一些宽松的限定词，如粗略地说和总的来说。第三，事先承认存在一些边界情况，这些情况不影响你的主要观点，这为定义提供了情境(S)，但要确保这些边界情况确实不影响你的主要观点。

After thinking more about my definition of *proven beyond a reasonable doubt,* I developed the following definition: “To say that a conclusion is *proven beyond a rea­sonable doubt* is to say that the evidence supports it so strongly that it would not make good sense to deny it.” If I am roughly right about this reported definition, then the diagram looks roughly like this:1

proofs beyond a reasonable doubt  
无可置疑的证据

proofs in which the evidence supports the conclusion so strongly that it would not make good sense to deny the conclusion

Diagram 12:7 represents the ideal in reported definitions of terms in their standard meaning: coextensive circles. Seek this ideal, but do not expect perfection.  
对于我对“超出合理怀疑”一词的定义，我经过更多思考后，得出了以下定义：说一个结论被证明超出合理怀疑，意味着证据对其的支持非常强大，以至于否认它是没有道理的。如果我对这个报道的定义大致正确，那么图表大致如下：1超出合理怀疑的证据证明证据对结论的支持非常强大，以至于否认结论是没有道理的图表12：7代表了报道中对术语的标准含义的理想：相互重叠的圆。追求这个理想，但不要期望完美。­

Reported Definitions as Best-Explanation Hypotheses  
报告的定义作为最佳解释假设

As I indicated earlier, one of the jurors appeared to use *proof beyond α reasonable doubt* in its deductive sense. My belief to this effect was a best-explanation hypothesis, as are most reported definitions. The definition best explains the things that people (or in this case, the person) say and do. In this case, some of the things explained were the juror’s answers to several questions I asked him about whether certain things are proven beyond a reasonable doubt. For example, 1 asked him whether the prosecu­tor had proven beyond a reasonable doubt that Arlene had killed Al, and whether it

J A definition in Black’s Law Dictionary, 6th Edition (Minneapolis: West Publications, 1991), goes roughly as follows: To prove somethιnβ beyond a reasonable doubt means to establish it by virtue of the pro bative force of the facts. It has never been fully clear to me why the judge did not offer us this or some similar definition, but possibly he felt that the words probative force would mystify us. In content, I feel that my definition, as unended, amounts to about the same as that in this dictionary. What do you think?   
正如我之前所指出的，陪审团中的一名陪审员在推理意义上似乎使用了超出合理怀疑的证据。我对此的信念是一个最佳解释假设，正如大多数报道的定义一样。这个定义最好解释了人们（或在这种情况下，这个人）说和做的事情。在这种情况下，解释的一些事情是陪审员对我提出的关于某些事情是否被证明超出合理怀疑的几个问题的回答。例如，我问他检察官是否已经证明阿琳杀死了艾尔，并且是否它...在《黑斯法律词典》第六版（明尼阿波利斯：西方出版社，1991年）中，定义大致如下：超出合理怀疑的证明意味着通过事实的证明力来建立它。我一直不太清楚为什么法官没有给我们提供这个或类似的定义，但可能他觉得这个词组“证明力”会让我们感到困惑。在内容上，我觉得我的定义，作为一个未完结的定义，与这本词典中的定义差不多。你认为呢？

had been proven beyond a reasonable doubt that the moon causes tides. He responded negatively to both questions. He justified his response by noting that it was logically possible for the reasons to be true, but the conclusion false. My hypothesis that he was using the term in the deductive sense explained why he answered in the way that he did. There was more evidence, but that should be enough for you to see the reasoning pattern here. Formulating reported definitions is a creative/critical activity that employs the criteria for best-explanation hypotheses.  
已经被证明月亮引起潮汐是毋庸置疑的。他对这两个问题的回答都是否定的。他通过指出理论上这些原因可能是真实的，但结论是错误的来为自己的回答辩护。我假设他使用了演绎的意义来解释他的回答方式。还有更多的证据，但这应该足以让你看到这里的推理模式。制定报告的定义是一种创造性/批判性的活动，它运用了最佳解释假设的标准。­esis that he was using the term in the deductive sense explained why

­ferent definition of proof from the one that we and the court (even though the judge refused to state the definition) were presuming. Then we were able to point this out to him and It was important in this situation for us to realize that this juror was using a different definition of proof from the one that we and the court (even though the judge refused to state the definition) were presuming. Then we were able to point this out to him and say that in using his definition, he was not responding to the murder criteria as they were intended.  
在这种情况下，我们意识到这个陪审员使用了与我们和法庭（尽管法官拒绝明确定义）所假定的证据定义不同的定义是很重要的。然后我们能够向他指出，并说在使用他的定义时，他并没有按照谋杀标准的本意进行回应。­teria as

Defining Terms Any Way l/Ve Please  
定义术语任何方式l/Ve请

There is a common view that you may define a term any way that you please, as long as you let your audience know the meaning. An extreme form of this view is expressed by Humpty Dumpty in Lewis Carroll’s Through the Looking Glass:  
有一种普遍观点认为，只要你让听众知道意思，你可以任意定义一个术语。这种观点的一个极端形式是在刘易斯·卡罗尔的《爱丽丝镜中奇遇记》中由汉普蒂·韦尔提表达的。

“When I use a word,” Humpty Dumpty said, in rather a scornful tone, “it means just what I choose it to mean—neither more nor less.”  
"当我使用一个词时，汉普蒂·韦尔德说道，语气颇为嘲讽，它的意思就是我选择的意思，既不多也不少。"

There is a germ of truth in this slogan: Every word could actually have meant something different from its actual meaning in our language. But in giving a reported definition, we are obligated to try to provide a true account of usage, and are not free to define a word any way we please.  
这个口号中有一点真理：实际上，每个词在我们的语言中都可能有与其实际意义不同的含义。但是在给出一个报道的定义时，我们有责任尽力提供一个真实的用法描述，而不能随意定义一个词的意思。

This freedom-of-definition view is much more appropriate for a type of definitional act that we shall be considering in the next chapter: arbitrarily stipulating a meaning for a term.  
这种自由定义的观点对于我们将在下一章中考虑的一种定义行为来说更加合适：任意规定一个术语的含义。­

Summary  
摘要

A reported definition is the most common type of definition. Most of the time, when we are puzzled about a word, we merely need to know how it is used. Reported definitions are supposed to provide us with this sort of information. For reports of standard usage, this is something that is often imprecise. We usually cannot expect perfection. But for purposes of communication, knowing roughly how a word is used in our society at this time is very important. Otherwise there is no basis for expecting to understand each other. Furthermore, for purposes of communication and understanding, knowing how a particular person is using a word and how a word is used in some other societies or groups are both very helpful. We use reported definitions to convey this information.  
报告的定义是最常见的定义类型。大多数时候，当我们对一个词感到困惑时，我们只需要知道它的用法。报告的定义应该为我们提供这种信息。对于标准用法的报告，这通常是不精确的。我们通常不能期望完美。但是为了交流的目的，了解一个词在我们社会中的大致用法非常重要。否则，就没有理由期望彼此理解。此外，为了交流和理解的目的，了解一个特定人如何使用一个词以及一个词在其他社会或群体中的用法都非常有帮助。我们使用报告的定义来传达这些信息。­­­­

Because reported definitions are information, it is false that you can define a term any way you please if reported definition is the type of definition you are doing.  
因为报告的定义是信息，所以如果你正在进行的是报告定义类型的定义，那么你可以随意定义一个术语是错误的。

Circles can be helpful in exhibiting defects (or success) in reported definitions that attempt to reflect standard usage.   
圆圈可以帮助展示试图反映标准用法的报告定义中的缺陷（或成功）。

Check-Up 12A

True or False?  
真或假？

If the statement is false, change it to make it true. Try to do so in a way that shows that you understand.  
如果陈述是错误的，请将其更改为使其成为真实的陈述。尝试以一种能够显示你理解的方式进行更改。

**12:1 A reported definition is a factual statement.  
12:1 一个被报道的定义是一个事实陈述。**

**12:2 The intention in a reported definition is to reflect usage; this is usually standard usage, but if not, then the usage of some particular person or group.  
12:2 报道的定义意在反映用法；这通常是标准用法，但如果不是，则是某个特定人或群体的用法。**

**12:3 If a reported definition that is intended to reflect standard usage is successful, then its Euler diagram will consist of two overlapping circles, each with a part outside of the other.  
12:3 如果一个旨在反映标准用法的定义被成功报道，那么它的欧拉图将由两个重叠的圆组成，每个圆都有一部分在另一个圆的外面。**­cles, each with

**12:4 The definitions in dictionaries are reported definitions.  
12:4 字典中的定义是报告的定义。**

**12:5 To be satisfactory, a reported definition must have absolutely no counterexamples.  
为了令人满意，一个被报告的定义必须绝对没有反例。**

**12:6 A counterexample to a reported definition is a case that fits one part of the definition, but not the other.  
12:6 对一个已报告的定义的反例是一个符合定义的一部分，但不符合另一部分的情况。**

Medium Answer  
中等答案

For each of the following reported definitions intended to reflect standard usage, decide whether it is correct. If not, identify a counterexample (be specific), and draw a circle diagram that exhibits the defect in the definition. The term being defined is italicized.  
对于下列旨在反映标准用法的报告定义，请确定其是否正确。如果不正确，请找出一个反例（具体说明），并绘制一个圆形图表来展示定义中的缺陷。被定义的术语以斜体表示。

­nary if you choose. The point here is not to see whether you know the standard meaning of these terms, but rather to give you practice in handling definitions, based on what you believe the standard meaning to be. Use a separate sheet of paper.Do this on the basis of what you believe the term to mean, consulting a dictionary if you choose. The point here is not to see whether you know the standard meaning of these terms, but rather to give you practice in handling definitions, based on what you believe the standard meaning to be. Use a separate sheet of paper.  
根据您认为该术语的含义，进行此操作，如果需要可以查阅字典。这里的重点不是看您是否知道这些术语的标准含义，而是让您练习处理定义，根据您认为的标准含义。请使用一张单独的纸。

**12:7 A circle is a plane curved figure.  
12:7 一个圆是一个平面曲线图形。**

**12:8 A glacier is a large body of ice.  
12:8 冰川是一大片冰。**

**12:9 A sovereign state is one with complete control over all its affairs.  
12:9 主权国家是指对所有事务拥有完全控制权的国家。**

**12:10 A poem is a literary work with meaning beyond the actual literal meaning of its words.  
12:10 一首诗是一种文学作品，其意义超越了其文字的字面意义。**­ing of its words.

**12:11 The scientific method is a method consisting of all of the following activities. (If any one is missing, the method is not scientific. If all are present, the method is scientific):  
12:11 科学方法是由以下所有活动组成的方法。（如果有任何一个缺失，该方法就不是科学的。如果所有活动都存在，该方法就是科学的）：**

1. Stating the problem  
   陈述问题
2. Formulating hypotheses that are possible answers to the problem  
   制定可能是问题答案的假设
3. Observing  
   观察
4. Measuring  
   测量
5. Calculating  
   计算
6. Using instruments  
   使用仪器
7. Experimenting  
   实验
8. Drawing a tentative conclusion  
   得出初步结论
9. Testing the conclusion with further experiments  
   用进一步的实验来测试结论

**12:12 An artery is a muscular tube that carries blood away from the heart.   
12:12 动脉是一种肌肉管道，将血液从心脏运送出去。**

Another Medium Answer  
另一个中等答案

**12:13 Formulate a reported definition that is intended to reflect the standard usage of a term you use in your everyday life. Try to do it in such a way that there are no counterexamples. Be prepared to offer it to others for their scrutiny.  
12:13 制定一个报告的定义，旨在反映你在日常生活中使用的术语的标准用法。尽量以不会有反例的方式来完成。准备好将其提供给他人进行审查。**­ers for their scrutiny.

The Classification Definition Form  
分类定义表

So far, you have been considering one type of activity that goes under the label definition: reported definition. Next, you will examine one form in which definitions, including reported definitions, can be formulated: the classification definition form. Reported definition and classification definition are not mutually exclusive categories. Rather, they exemplify two different dimensions of definition: type of activity and form.  
到目前为止，您一直在考虑一个归类定义的活动类型：报告的定义。接下来，您将研究一种定义的形式，包括报告的定义在内：分类定义形式。报告的定义和分类定义不是互斥的类别。相反，它们展示了定义的两个不同维度：活动类型和形式。*­tion:*­ing reported definitions, can be formulated: the classification definition form. Reported definition and classification definition are not mutually exclusive categories. Rather, they exemplify two different dimensions of definition: type of activity and form.

The most commonly recommended form of definition is the classification form. It is often a very useful form for a definition, though not always so. Basically a classification definition consists of a general class and distinguishing features. In the previous section, the definitions of pencil, triangle, car, hearsay, and one of the definitions of proven beyιnd a reasonable doubt are classification definitions. As a reminder, here they are again (the term being defined is italicized, as is the general class term):  
最常推荐的定义形式是分类形式。尽管并非总是如此，但它通常是一个非常有用的定义形式。基本上，分类定义由一个总类和区分特征组成。在前一节中，铅笔、三角形、汽车、传闻以及一个被证明超出合理怀疑的定义都是分类定义。作为提醒，这里再次列出它们（被定义的术语以及总类术语都以斜体表示）：*­fication* ­ous section, the definitions of

Example 12:1

A pencil is a writing implement containing graphite.  
铅笔是一种含有石墨的书写工具。

Example 12:2

A triangle is a closed figure consisting of three straight line segments.  
三角形是由三条直线段组成的闭合图形。

Example 12:3

A triangle is a figure with three sides.  
三角形是一个有三条边的图形。

Example 12:4

A car is a four-wheel land motor vehicle mainly for use on public roads.  
汽车是一种四轮陆地机动车辆，主要用于公共道路。

Example 12:5

*Proof beyond a reasonable doubt is proof that is deductively valid and that has true premises.  
超出合理怀疑的证据是具有演绎有效性和真实前提的证据。*

Example 12:6

Roughly speaking, hearsay is testimony that reports what someone else said with the intention of persuading the listener of the truth of what was said.   
大致而言，传闻是一种证词，它报告了别人说的话，目的是说服听者相信所说的话的真实性。

In these examples, the words implement, figure, vehicle, proof, and testimony are the general class terms, although it is sometimes an arbitrary matter what is deemed to be the class term. For instance, in Example 12:2 I could have called closed figure the general class term, rather than figure. In any case, when making a classification definition, be sure to include a general class term. Roughly speaking, the general class term refers to a class that includes what is being defined.  
在这些例子中，implement、figure、vehicle、proof和testimony是一般的类别术语，尽管有时候什么被认定为类别术语可能是任意的。例如，在示例12:2中，我本可以将closed figure称为一般的类别术语，而不是figure。无论如何，在进行分类定义时，请确保包括一个一般的类别术语。粗略地说，一般的类别术语指的是包括所定义的内容的类别。

­guish what is being defined from the other members of the class. In Example 12:1, the words The rest of the defining part of a classification definition is supposed to distinguish what is being defined from the other members of the class. In Example 12:1, the words writing and containing graphite distinguish pencils from other implements. The word writing excludes various other kinds of implements, such as farm implements and tools; the words containing graphite distinguish pencils from other writing implements, such as pens. The word is roughly means the same as equals ( = ) and asserts that the term being defined is equal to the defining part (which in turn consists of the general class term and the terms for the distinguishing features).  
分类定义的定义部分的其余部分应该区分被定义的事物与类中的其他成员。在示例12:1中，单词“writing”和“containing graphite”将铅笔与其他工具区分开来。单词“writing”排除了其他各种工具，如农具和工具；而“containing graphite”将铅笔与其他书写工具（如钢笔）区分开来。单词“is roughly”的意思与“equals（=）”相同，并断言被定义的术语等于定义部分（定义部分由一般类术语和区分特征的术语组成）。­ments. The word

Rules for Classification Definition  
分类定义规则

Thus, two basic rules for classification definition are these:  
因此，分类定义的两个基本规则是这些：

1. A classification definition must contain a general class term.  
   分类定义必须包含一个一般类别术语。
2. ­tinguish what is defined from the rest of the general class.A classification definition must contain features that are supposed to distinguish what is defined from the rest of the general class.  
   分类定义必须包含用于区分所定义事物与一般类别中其他事物的特征。

If the general class term and distinguishing features are well-chosen, then the third rule is satisfied:  
如果选择得当的话，一般类别术语和区别特征，那么第三条规则就得到满足。

1. ­age. The defining part should be at least as broad as, but not broader than, the defined term.The defining part and the term being defined should be equal in coverage. The defining part should be at least as broad as, but not broader than, the defined term.  
   定义部分和被定义的术语的范围应该相等。定义部分应该至少与被定义的术语一样广泛，但不应该更广泛。

Rule 3 is the one we were testing with circles earlier in this chapter. If Rule 3 is satisfied, then a circle diagram consists of coextensive circles (the same circle for both the term being defined and the defining part).  
规则3是我们在本章早些时候用圆圈进行测试的规则。如果满足规则3，则圆圈图由共同扩展的圆圈组成（即被定义术语和定义部分使用相同的圆圈）。

Negatives  
否定

­inition. The reason is that negatives usually do not exclude enough. For example, suppose I define pencil as follows:Although sometimes unavoidable, it is usually a mistake to include a negative in a definition. The reason is that negatives usually do not exclude enough. For example, suppose I define pencil as follows:  
虽然有时不可避免，但通常在定义中包含否定是一个错误。原因是否定通常不足以排除所有情况。例如，假设我将铅笔定义如下：

Example 12:7

A pencil is a writing implement that is not a pen.  
铅笔是一种不是钢笔的书写工具。

The negative phrase not α pen fails to rule out some writing implements that are not pencils. For example, it does not rule out a piece of chalk, or a stick used to write in the sand. So we have Rule 4:  
否定词组不是α笔未能排除一些非铅笔的写作工具。例如，它不能排除一块粉笔或者用来在沙子上写字的棍子。因此，我们有第四条规则：

1. Definitions usually should not include negatives.   
   通常情况下，定义不应包含否定词。

The reason for the usually is that some terms express negative ideas and need a negative of some sort in the definition. An example is the term bachelor. A crucial feature of being a bachelor is not being married. The definition of bachelor needs a negative (such as not) in it. Can you think of any other negative concept?  
通常的原因是因为一些术语表达了负面的观念，并且在定义中需要一种否定的形式。一个例子是单身汉这个术语。作为一个单身汉的关键特征就是未婚。单身汉的定义需要一个否定词（比如不）来表达。你能想到其他任何负面概念吗？­ture of being a bachelor is not being married. The definition of ­ative (such as

Circularity  
循环性

A circular definition is one that makes no progress, generally because it uses the term being defined (or something like it) to do the defining. A fifth rule is the noncircularity rule:  
循环定义是一种没有进展的定义，通常是因为它使用被定义的术语（或类似的术语）来进行定义。第五条规则是非循环性规则。­larity rule:

1. Generally, a term should not be used to define itself.  
   通常情况下，一个术语不应该用来定义自己。

The rule is probably violated in Example 12:8:  
在示例12:8中，规则可能被违反了。

Example 12:8

*Marxism is the ideology of Marxists.  
马克思主义是马克思主义者的意识形态。*

If Marxist is then defined as a person whose ideology is Marxism, Example 12:8 seems circular and in violation of Rule 5. If, instead, we know what Marxists believe, but are not sure whether their doctrine is called Marxism, then the definition is not circular. Furthermore, the word ideology adds something to the definition in some situations. To many people, an ideology is a doctrine that is held unthinkingly to some extent. If the point of the definition is make this claim about Marxists, then the definition is not circular. (It would then not be a reported definition, but rather a positional definition, a type to be discussed in the next chapter.) Many Marxists object to having their news labeled ideology, although they often claim that the views of their opponents are ideology'. So, to include Marxism in the general class ideology is in some situations to sav something about the crucial issue. The situation and assumptions are therefore important in making a decision about whether a definition is circular. Circularity is relative to the situation and assumptions (coming under the S and I of FRISCO).  
如果马克思主义者被定义为其意识形态是马克思主义的人，那么例子12:8似乎是循环的，并违反了规则5。如果我们知道马克思主义者相信什么，但不确定他们的教义是否被称为马克思主义，那么这个定义就不是循环的。此外，在某些情况下，"意识形态"这个词在定义中添加了一些内容。对许多人来说，意识形态是一种在某种程度上被盲目坚持的教义。如果定义的目的是对马克思主义者提出这个主张，那么这个定义就不是循环的。（这将不是一个报告性定义，而是一个在下一章中讨论的位置性定义。）许多马克思主义者反对将他们的观点标签化为意识形态，尽管他们经常声称他们的对手的观点是意识形态。因此，在一些情况下，将马克思主义纳入一般的意识形态类别中是在某种程度上对关键问题的表述。因此，情境和假设在决定定义是否循环时非常重要。循环性是相对于情境和假设的（属于FRISCO的S和I）。­cular. Furthermore, the word ­ations. To many people, an ideology is a doctrine that is held unthinkingly to some extent. If the point of the definition is make this claim about Marxists, then the definition is not circular. (It would then not be a reported definition, but rather a positional defi­nition, a type to be discussed in the next chapter.) Many Marxists object to having their news labeled

Summary  
摘要

The classification form of definition is the most popular form of definition. It is brief, precise, and usually convenient. A classification definition is a definition consisting of a general class and distinguishing features (Rules 1 and 2). The term being defined and the defining part are supposed to be equivalent, neither one broader nor narrower than the other (Rule 3). Generally, negatives should be avoided in classification definitions (Rule 4). The use of the term being defined (or terms like it) should be avoided, unless the repetition does not interfere with the purpose of the definition in the situation (S) in which it occurs (Rule 5).  
定义的分类形式是最常见的定义形式。它简洁、精确，通常也很方便。分类定义由一个总类和区分特征（规则1和2）组成。被定义的术语和定义部分应该是等价的，既不更广泛也不更狭窄（规则3）。一般来说，在分类定义中应避免使用否定词（规则4）。除非重复不会干扰定义在特定情况下的目的，否则应避免使用被定义的术语（或类似的术语）（规则5）。­rower

Check-Up 12B

True or False?  
真或假？

If the statement is false, change it to make it true. Try to do so in a way that shows that you understand.   
如果这个陈述是错误的，请将其改为正确的。尽量以一种能展示你理解的方式来做。

12:14 A classification definition mentions a general class and distinguishing features.  
12:14 一个分类定义提到了一个总类和区别特征。

12:15 In a classification definition, the defining part is supposed to be equal in meaning to the term being defined.  
12:15 在一个分类定义中，定义部分应该与被定义的术语在意义上相等。

12:16 An ideal reported classification definition has no counterexamples, but for everyday terms there are few that satisfy this ideal.  
12:16 一个理想的报告分类定义没有反例，但对于日常术语来说，很少有满足这个理想的。

12:17 In a classification definition it is sometimes all right to use a term in the defining part that is similar to the term being defined.  
12:17 在分类定义中，有时可以在定义部分使用与被定义术语类似的术语。

Short Answer  
简答题

For Items 12:18 through 12:22, give the distinguishing features of Examples 12:2 (triangle), 12:3 (triangle), 12:4 (car), 12:5 (proof beyond a reasonable doubt), and 12:6 (hearsay). The first is done as an example:  
对于项目12:18到12:22，请给出示例12:2（三角形），12:3（三角形），12:4（汽车），12:5（合理怀疑以外的证据），和12:6（传闻）的特征。第一个作为示例已经完成：

12:18 (12:2) closed, consisting of three straight line segments.  
12:18 (12:2) 闭合，由三条直线段组成。

More Short Answer  
更多简短回答

­ing your decisions.For each of the following classification definitions, tell which, if any, of the five rules for classification definition it violates. If you think that a definition violates more than one rule, choose the lower-numbered rule. Assume some ordinary situation in making your decisions.  
对于以下每个分类定义，请告诉我它违反了哪一个（如果有的话）五个分类定义规则。如果你认为一个定义违反了多个规则，请选择较低编号的规则。在做决策时，请假设一些普通情况。

­ever you believe to be the standard meaning.Again, the point here is not to see whether you know the standard meaning of these terms, but rather to give you practice in handling definitions, based on whatever you believe to be the standard meaning.  
再次，这里的重点不是要看你是否知道这些术语的标准含义，而是要让你练习处理定义，根据你认为的标准含义。

12:23 A tariff is when you pay extra for something you buy.  
12:23 关税是你购买某物时额外支付的费用。

12:24 Nationalism is where people support their country.  
12:24 国家主义是人们支持自己的国家。

12:25 An ex post facto law is a law that is ex post facto.  
12:25 事后法是一种事后法。

12:26 A circle is a plane closed figure.  
12:26 一个圆是一个平面封闭的图形。

12:27 A glacier is a large body of ice.  
12:27 冰川是一大片冰。

12:28 Snow is precipitation that is not rain.  
12:28 雪是不是雨的降水。

Still More Short Answer  
仍有更多简答题

Make reported classification definitions of each of the terms suggested in Items 12:29-12:35. Try to reflect standard usage, but do not seek perfection. Instead, seek definitions that are adequate for the situation (the S in FRISCO).  
对12:29-12:35中建议的每个术语进行报告分类定义。尽量反映标准用法，但不要追求完美。相反，寻求适合情况（FRISCO中的S）的定义。

12:29 Define argument for a college class in critical thinking.  
12:29 定义批判性思维的大学课程中的论点。

12:30 Define experiment for a high school science class.  
12:30 定义高中科学课的实验。

12:31 Define folk dancing for a close friend.  
12:31 定义民间舞蹈给一个亲密的朋友。

12:32 Define conclusion (as the term is used in this book) for an average college freshman.  
12:32 定义结论（如本书所用）对于一个普通的大一新生。­lege freshman.

­inition is appropriate, and identify the term clearly.12:33 Locate and define a term that is best defined using a negative of some sort. Describe the situation for which you think your classification definition is appropriate, and identify the term clearly.  
12:33 定位并定义一个最好使用某种否定方式来定义的术语。描述适用于您认为分类定义适当的情况，并清楚地标识该术语。

12:34 Choose your own term and situation. Describe the situation for which you think your classification definition is appropriate, and identify the term clearly.   
12:34 选择您自己的术语和情境。描述适合您分类定义的情境，并清楚地标识出该术语。

**12:35 Define validity for a close friend. Describe the features of your friend’s background that make your definition at an appropriate level of sophistication for your friend.  
12:35 为亲密的朋友定义有效性。描述你朋友的背景特点，使你的定义在适当的水平上适合你的朋友。**

Some Alternatives to Classification Definition  
分类定义的一些替代方案

You might have had some difficulty defining validity in Check-Up 12:35 because it is not easy to find a general class term that includes validity. Problems also arise for other sorts of terms. Classification definition cannot directly be used for adjectives and other parts of speech that are not nouns. Furthermore, classification definition gives an appearance of precision that is sometimes unwarranted. That is, some terms are more vague than a classification definition would make them appear.  
在12:35的检查中，你可能会有一些困难来定义有效性，因为很难找到一个包括有效性的一般类别术语。其他类型的术语也会出现问题。分类定义不能直接用于形容词和其他不是名词的词性。此外，分类定义给人一种精确性的外观，有时是不合理的。也就是说，有些术语比分类定义所显示的更模糊。

Consider how you might define the following terms: proof, parallel, if, and scientific method. None is readily amenable to classification definition.  
考虑一下你如何定义以下术语：证明，平行，如果和科学方法。没有一个容易归类定义。*­entific*

Equivalent-Expression Definition  
等价表达式定义

The difficulty I experience in trying to define the words proof and validity is in finding a general class. When you have difficulty finding a general class, one useful strategy is to develop an equivalent-expression definition. My original and amended definitions of proven beyond a reasonable doubt are of this type. The amended one goes as follows:  
我在试图定义证明和有效性这两个词时遇到的困难在于找到一个普遍的类别。当你很难找到一个普遍的类别时，一个有用的策略是制定一个等价表达式的定义。我对超出合理怀疑的证明的原始和修正后的定义都属于这种类型。修正后的定义如下：

Example 12:9

To say that a conclusion is proven beyond a reasonable doubt is to say that the evidence supports it so strongly that it would not make good sense to deny it.  
说一个结论被证明是毋庸置疑的意思是说证据对它的支持非常强烈，否认它将不合理。

In this definition, I put the expression to be defined inside a larger expression and equated the larger expression with another expression. The larger expression (containing the expression to be defined) is as follows:  
在这个定义中，我将要定义的表达式放在一个更大的表达式中，并将这个更大的表达式与另一个表达式相等。包含要定义的表达式的更大表达式如下：

to say that a conclusion is proven beyond a reasonable doubt  
以合理怀疑之外的证据证明一个结论

The other expression is as follows:  
以下是另一种表达方式：

to say that the evidence supports it so strongly that it would not make good sense to deny it  
说证据如此强有力地支持它，以至于否认它是没有道理的

In the definition in Example 12:9, these two expressions are equated. Hence the name equivalent-expression definition. The word is again divides two parts of the definition and serves as an equals sign ( = ). A classification definition of p>w∕might look like this:  
在示例12:9的定义中，这两个表达式被等同起来。因此得名等价表达式定义。这个词再次将定义分为两部分，并作为等号（=）的符号。一个p>w∕的分类定义可能是这样的：­

Example 12:10

A proof is a combination of propositions or evidence that establish a conclusion.  
证明是一系列命题或证据的组合，用以建立一个结论。

Here is an equivalent-expression definition of proof:   
这是一个关于证明的等价表达定义：

Example 12:11

To say that a proposition is proved is to say that it is established by the evidence and other propositions offered in its support.  
说一个命题被证明了，就是说它是通过证据和其他提供支持的命题来确立的。

­standable, but (as is often the case) the equivalent-expression definition was easier to formulate because it did not require finding a general class term. Finding general class terms is often difficult for abstract concepts, and not always necessary, as is shown by Examples 12:10 and 12:11.The two definitions (Examples 12:10 and 12:11) seem about equally understandable, but (as is often the case) the equivalent-expression definition was easier to formulate because it did not require finding a general class term. Finding general class terms is often difficult for abstract concepts, and not always necessary, as is shown by Examples 12:10 and 12:11.  
这两个定义（示例12:10和12:11）似乎同样容易理解，但（通常情况下）等价表达式的定义更容易形成，因为它不需要找到一个普遍的类别术语。对于抽象概念来说，找到普遍的类别术语通常很困难，而且并不总是必要的，正如示例12:10和12:11所示。

An equivalent-expression definition of deductive validity might look like this:  
演绎有效性的等价表达定义可能如下：

Example 12:12

To say that an argument is deductively valid is to say that the conclusion follows necessarily from the premises.  
说一个论证是演绎有效的意思是说结论必然地从前提中得出。

This is smoother than a classification definition, which might go like this:  
这比分类定义更流畅，可能是这样的：

Example 12:13

*Deductive validity is the quality of having the conclusion follow necessarily from the premises.  
演绎有效性是指结论必然地从前提中得出的质量。*

The general class term quality was not easy to think of, and furthermore is not very helpful for understanding the concept.  
一般的类别术语质量很难想到，而且对于理解概念也没有太大帮助。

My definition of reported definition at the beginning of this chapter is an equivalent-expression definition: “To report a meaning is to report how a term is (or was) used.” But note that I changed the words slightly before I put the term to be defined in the larger expression. I used the words report a meaning instead of the words reported definition. In my equivalent-expression definition of deductive validity, I used the words deductively valid instead of deductive validity. Similarlv, in mv discussion of proven beyond a reasonable doubt and proof I shifted back and forth between the words proven and proof [or the sake of convenience. This changing and shifting is allright as long as the definition conveys what needs to be conveyed to the audience. Did my definitions make sense to you?  
在本章开头，我对报告定义的定义是一个等效表达定义：报告一个意义是报告一个术语的使用方式（或曾经的使用方式）。但请注意，在将要定义的术语放入更大的表达式之前，我稍微改变了这些词语。我使用了报告一个意义而不是已报告的定义这些词语。在我对演绎有效性的等效表达定义中，我使用了演绎有效而不是演绎有效性这些词语。同样地，在我对超出合理怀疑的证明和证据的讨论中，我在证明和证据之间来回变换这些词语，为了方便起见。只要定义能够传达给受众所需的内容，这种变换和变化是可以接受的。我的定义对你有意义吗？*­ity,*

One standard way to make an equivalent-expression definition is to start with the words to say that; then to add an expression containing the word to be defined; then to say is to say that; and then add an expression that is equal in meaning to the previous expression. The form looks like this:  
一种标准的等效表达定义方法是以词语“说”开始；然后加上一个包含待定义词语的表达式；接着说“是说”；然后再加上一个与前一个表达式意义相等的表达式。形式如下：

Example 12:14

To say that . . . is to say that. . . .  
说……就是说……

In the first space goes the expression containing the word to be defined. In the second space goes the expression that does the defining work.   
第一个空格填入包含要定义的词的表达式。第二个空格填入进行定义工作的表达式。

Another approach to definition, when the term to be defined is an adjective, is to add a noun of which the meaning is clear and unproblematic, and then to define the combination in classification form. Example 12:15 is such a definition of the word parallel, which is an adjective. When the word lines is added, the combination becomes definable in classification form, even though the original word parallel was not so definable.  
定义时，当要定义的术语是形容词时，另一种方法是添加一个意义明确且无问题的名词，然后以分类形式定义这个组合。例如12:15就是对形容词parallel的定义，当加上名词lines时，即使最初的形容词parallel本身无法被定义，这个组合也可以以分类形式定义。

Example 12:15

*Parallel lines are lines in a plane that do not meet, however far extended.  
平行线是平面上不相交的直线，无论延伸多远。*

Here the word lines is a useful helper. Repeating it in the defining part does not make the definition circular because its meaning is clear and unproblematic.  
这里的lines是一个有用的辅助工具。在定义部分重复它并不会使定义变得循环，因为它的意义是清晰和无问题的。

­ple, to explain the meaning of Still another way of dealing with words that are not nouns is to convert them into nouns, and then give a standard classification definition of the noun. For example, to explain the meaning of free we could define freedom in classification form:  
处理不是名词的词语的另一种方法是将它们转化为名词，然后给予名词一个标准的分类定义。例如，为了解释自由的意义，我们可以用分类形式定义自由。

Example 12:16

*Freedom is lack of restraint.  
自由是缺乏约束。*

For most purposes, this definition conveys the meaning of the word free, as many people use the term. More about this term later.  
对于大多数目的而言，这个定义传达了自由这个词的意思，就像许多人使用的那样。稍后会有更多关于这个词的解释。

But this conversion-to-noun approach does not always work. It does not work well for parallel. The corresponding noun would be parallelism, leading to a stilted definition:  
但是这种转化为名词的方法并不总是有效。对于parallel来说并不适用。相应的名词应该是parallelism，这会导致一种生硬的定义：

Example 12:17

*Parallelism is the quality of being in the same plane but not meeting, however far extended.  
平行性是处于同一平面但不相交的质量，无论延伸多远。*

The approach does not work at all for particles, such as or and if There is no noun conversion available for them. Instead, the standard equivalent-expression form works best:  
这种方法对于诸如或和如果等粒子根本不起作用。它们没有可用的名词转换。相反，标准的等效表达形式效果最好。

Example 12:18

Roughly speaking, to say “Ifp, then qv, is to say that ρ implies q.  
粗略地说，如果p，则q，即表示ρ蕴含q。

The approach to choose depends on the individual term to be defined and the situation.  
选择的方法取决于要定义的个别术语和情况。

Strictly speaking, the standard equivalent-expression form has the limitation of defining a term only as it appears in the given expression. But this form is still very useful for many situations. I often use it when I need a definition quickly, and also use it to avoid awkwardness and other problems.   
严格来说，标准的等效表达形式只能将一个术语定义为其在给定表达式中的出现方式。但是这种形式在许多情况下仍然非常有用。当我需要快速定义时，我经常使用它，并且还用它来避免尴尬和其他问题。

Range Definition  
范围定义

For some terms, the precision of a classification definition is inappropriate. Check-Up 12:11 presents a precise classification definition of scientific method, but the precision is misplaced because the concept has vague boundaries. As a reminder, here is the definition that was presented:  
对于某些术语，分类定义的精确性是不合适的。Check-Up 12:11给出了科学方法的精确分类定义，但是这种精确性是不恰当的，因为这个概念具有模糊的边界。作为提醒，这是之前给出的定义：­inition that was presented:

**12:11 The scientific method is a method consisting of all of the following activities. (If any one is missing, the method is not scientific. If all are present, the method is scientific):  
12:11 科学方法是由以下所有活动组成的方法。（如果有任何一个缺失，该方法就不是科学的。如果所有活动都存在，该方法就是科学的）：**

1. Stating the problem  
   陈述问题
2. Formulating hypotheses that are possible answers to the problem  
   制定可能是问题答案的假设
3. Observing  
   观察
4. Measuring  
   测量
5. Calculating  
   计算
6. Using instruments  
   使用仪器
7. Experimenting  
   实验
8. Drawing a tentative conclusion  
   得出初步结论
9. Testing the conclusion with further experiments  
   用进一步的实验来测试结论

­tific practice, and are often essential. They are part of the fabric of science, although not always is each absolutely necessary for a method to be scientific. The conditions listed, although very important, are not necessary conditions because the concept itself does not have precise boundaries.Any such list of distinguishing features of scientific method is likely to have exceptions. For example, most astronomers do not run experiments, nor do they test their conclusions with further experiments, although their methods are scientific. On the other hand, the nine activities listed are very commonly present in cases of scientific practice, and are often essential. They are part of the fabric of science, although not always is each absolutely necessary for a method to be scientific. The conditions listed, although very important, are not necessary conditions because the concept itself does not have precise boundaries.  
任何对科学方法的区分特征的列表都可能有例外。例如，大多数天文学家不进行实验，也不通过进一步的实验来测试他们的结论，尽管他们的方法是科学的。另一方面，列出的这九种活动在科学实践中非常常见，通常是必不可少的。它们是科学的基础，尽管并非每一种都是科学方法必不可少的。列出的条件虽然非常重要，但并不是必要条件，因为这个概念本身没有明确的界限。

The range form of definition accommodates this sort of vagueness in boundary. It was named by Max Black[footnoteRef:24] after ranges of mountains because of the vagueness of boundaries of mountain ranges. A glance at a map confirms that mountain ranges do not have exact boundaries, yet there is something there to be named. This comparable imprecision in our language is recognized by the range form of definition. A range definition is one consisting of a set of crucial criteria, such that most of these criteria can be expected to hold for any given application of a term (although most or all of them are not necessary conditions). Example 12:19 is a reported range definition of scientific method:  
定义的范围形式容纳了边界的模糊性。它是由马克斯·布莱克（注24）以山脉的边界模糊性命名的。看一张地图就可以确认山脉没有确切的边界，但是有一些东西可以被命名。我们语言中的这种可比较的不精确性被范围形式的定义所认可。范围定义是由一组关键标准组成的定义，这些标准大多数可以预期在任何给定的术语应用中成立（尽管大多数或全部并非必要条件）。例如12:19是科学方法的一个报道的范围定义。[[23]](#footnote-23)­ble imprecision in our language is recognized by the range form of definition. A ­nition of

Example 12:19

*Scientific method is a method of investigation characteristically involving stating a problem, formulating hypotheses that arc possible answers to the problem, observing, measuring, calculating, using instruments, experimenting, drawing tentative conclusions, and testing the conclusions with further experiments.  
科学方法是一种调查方法，其特点是提出问题，制定可能是问题的答案的假设，观察、测量、计算、使用仪器、实验、得出暂时的结论，并通过进一步的实验来测试这些结论。*

The key term in that definition that show's the boundaries to be imprecise is characteristically.  
在该定义中显示边界不精确的关键术语是特征性的。

Note that there is still a general class term used: method of investigation. Thus, this range definition is a modified classification definition, modified to accommodate the loose boundaries of the term. It is a combination of the classification form with the loose spirit ot the range definition. Alternately, the equivalent-expression definition form could have been modified to make a range definition:  
请注意，仍然有一个通用的类别术语被使用：调查方法。因此，这个范围定义是一个修改后的分类定义，以适应术语的宽松边界。它是分类形式与范围定义的宽松精神的结合。或者，等效表达定义形式可以被修改为范围定义。­tion form could have

Example 12:20

To say that the method a person is using is scientific is to say that by and large it consists ot the activities of stating a problem, formulating hypotheses that are possible answers to a problem, observing, measuring, calculating, using instruments, experimenting, drawing a tentative conclusion, and testing a conclusion with further experiments.  
说一个人所使用的方法是科学的，就是说它主要包括陈述问题、提出可能的问题答案的假设、观察、测量、计算、使用仪器、实验、得出初步结论，并通过进一步实验来测试结论的活动。­ments, experimenting, drawing a tentative conclusion, and testing a conclusion

The key phrase in that definition that shows the boundaries to be imprecise is by and large.  
在该定义中显示边界不精确的关键词组是大体上。

Example 12:19, the classification range definition, gives us method of investigation as the general class. Example 12:20, the equivalent-expression range definition, gives us no general class. If the imprecise term to be defined conveniently fits under a general class, the classification range form is better. If not, the equivalent-expression range form is better.  
示例12:19，分类范围定义，将调查方法作为一般类别给出。示例12:20，等效表达范围定义，没有给出一般类别。如果要定义的不精确术语方便地适用于一般类别，那么分类范围形式更好。如果不适用，则等效表达范围形式更好。*­tion*

Actuallv, the precision to give to the boundaries depends to some extent on the level of sophistication of the discussion (the situation again!). For example, at a low level of sophistication, the word democracy might well be defined in standard classification form:  
实际上，给予边界的精确度在很大程度上取决于讨论的复杂程度（又是这种情况！）。例如，在低水平的复杂性下，民主这个词可能会被定义为标准分类形式：­

Example 12:21

*Democracy is a form of government in which the people rule.  
民主是一种人民统治的政府形式。*

At a more sophisticated level, a range definition is appropriate because at that level the boundaries are not precise:  
在更高级的水平上，范围定义是合适的，因为在那个水平上边界不是精确的。

Example 12:22

*Democracy is a form of government characterized by selection of lawmakers by the governed; freedom of speech, press, religion, and other forms of expression; and equality of all of the governed.  
民主是一种政府形式，其特点是由被统治者选择立法者；言论、新闻、宗教和其他形式的表达自由；以及被统治者的平等。*

In this definition, the key words indicating imprecise boundaries are characterized by.   
在这个定义中，表明不精确边界的关键词是被特征化为。*­ized by.*

Example 12:22 does more justice to my concept of democracy than Example 12:21, partly because Example 12:22 is in the range form. My concept of democracy is somewhat vague in boundaries. For example, I do not insist in all cases that all lawmakers be selected by the governed, but by and large expect this. In this case, the level of sophistication of the discussion is a crucial part of the situation. Thus, the situation (S') again plays a role in deciding what sort of definition to use.  
示例12:22对我的民主概念比示例12:21更具公正性，部分原因是示例12:22采用了范围形式。我的民主概念在边界上有些模糊。例如，我并不坚持在所有情况下都由被统治者选择所有立法者，但总体上期望如此。在这种情况下，讨论的复杂程度是情况的关键部分。因此，情况（S'）再次在决定使用何种定义方面起到了作用。­makers be selected by the governed, but by and large expect this. In this case, the level of sophistication of the discussion is a crucial part of the situation. Thus, the sit­uation

Other Forms of Definition  
其他定义形式

The equivalent-expression definitions, range forms of definition, and combinations thereof are the most useful ways to convey at least most of the meaning of a term for most situations. Some other ways of conveying meaning are giving a synonym, using a term in a situation, giving examples and negative examples, and operationally defining a term. Because operational definition is seldom useful for most people, I shall neglect it here. If you are interested, I refer you to an article I wrote on operational definition.3

Synonyms

Giving a synonym is very common, as in Example 12:23.  
等价表达定义、范围定义形式以及它们的组合是传达一个术语的大部分意义的最有用的方式。传达意义的其他方式包括给出同义词、在特定情境中使用术语、给出示例和反例，以及对术语进行操作性定义。因为操作性定义对大多数人来说很少有用，所以我在这里将忽略它。如果您有兴趣，我可以引用我在操作性定义方面撰写的一篇文章。3同义词给出同义词是非常常见的，就像例子12:23中一样。

Example 12:23

*Lugubrious means gloomy.  
忧郁*

Although usually not absolutely identical in meaning, synonyms can be very helpful because they are so quick and convenient.  
虽然通常不完全相同，但同义词非常有帮助，因为它们快速而方便。

Examples and Negative Examples  
示例和负例

In many circumstances, giving an example and a negative example is a very useful way to convey the meaning of a term. (A negative example is a case that is not an example.) Often it helps to give examples and negative examples in conjunction with classification, equivalent-expression, or range definition, but sometimes an example or a negative example by itself will do the job.  
在许多情况下，给出一个例子和一个反例是传达一个术语含义的非常有用的方式。（负例是指不是例子的情况。）通常，结合分类、等价表达或范围定义来给出例子和反例会更有帮助，但有时仅仅一个例子或一个反例就足够了。­ple.) Often it helps to give examples and negative examples in conjunction with clas­sification, equivalent-expression, or range definition, but sometimes an example or a negative example by itself will do the job.

In teaching a child the meaning of the word square, it helps to give examples of squares, but it also helps to show rectangles (negative examples), and to state that they arc not squares. Consider this somewhat abstract definition of irony:  
在教孩子理解方形这个词的意思时，给出方形的例子是有帮助的，但同时展示长方形（负例）并说明它们不是方形也是有帮助的。考虑一下这个有些抽象的讽刺的定义：

Example 12:24

*Irony is a mode of expression in which the implied attitudes are opposed to those literally expressed.  
讽刺是一种表达方式，其中暗示的态度与字面上表达的态度相反。*

This definition might be helped by an example. The use of the word noble in “The noble Brutus has told you that Caesar was ambitious1'’ is an example of irony.  
这个定义可能会通过一个例子得到帮助。在'The noble Brutus has told you that Caesar was ambitious'中使用'贵族'一词是一种讽刺的例子。

3. Robert H. Ennis, “Operationism Can and Should Be Divorced from Covering Law Assumptions,” in Leonard I. Krimernιan (Ed.), The Nature ami Scope of Social Science (New York: Applcton-Ceπtury- Croft, 1969), pp. 431^-44.   
3. 罗伯特·H·恩尼斯，《运算主义可以和应该与覆盖法假设分离》，载于伦纳德·I·克里默尼安（编），社会科学的性质和范围（纽约：Applcton-Ceπtury-Croft，1969年），第431^-44页。

But the example must be familiar to the audience, if it is to help convey meaning. If the audience is not familiar with Shakespeare’s Julius ('aesar, then the example is not much help.  
但是例子必须对观众来说是熟悉的，才能帮助传达意义。如果观众对莎士比亚的《凯撒大帝》不熟悉，那么这个例子就没有太多帮助。

Hamlet’s use of the phrase slings and arrows in his comment about the slings and arrows of outrageous fortune is a negative example of irony, and can be helpful, if the audience is familiar with Hamlet.  
哈姆雷特在关于命运的抨击和困境时使用的“弹弓和箭矢”一词是反讽的负面例子，如果观众熟悉哈姆雷特的话，这可能会有帮助。

When someone uses a word or a definition you do not understand, sometimes all you need is an example. Asking for examples is a good habit to have. Asking for negative examples is also a good habit, though one that is much less common. A negative example helps tell you where the person is drawing the line.  
当有人使用你不理解的词语或定义时，有时你只需要一个例子。要求例子是一个好习惯。要求负面例子也是一个好习惯，尽管这种习惯较为罕见。负面例子有助于告诉你对方在哪里划定了界限。­ative

Using a Word in a Situation  
在某种情况下使用一个词

Although using a word in a situation is sometimes useful for teaching someone, it is often not usefill because you usually want to tell someone what you mean by a word you are using or have used in the situation. Using it was not enough. In the beginning of this book, it would not have been enough for me to have let you figure out what I meant by argument. It was much better for me to tell you. Using it in the situation was not enough.  
虽然在某些情况下使用一个词对于教别人来说有时是有用的，但通常并不实用，因为你通常想要告诉别人你所使用的词的意思，或者你在这个情况中使用或曾经使用过的词的意思。仅仅使用它是不够的。在这本书的开头，如果我让你自己去理解我所指的'argument'是不够的，告诉你会更好。仅仅在情况中使用它是不够的。­ning ­

Summary  
摘要

Although the classification form of definition is understandably the most common form of definition, other forms are better for certain circumstances. The equivalentexpression definition is one of my favorites because it is so easy to formulate and understand. It does not require a search for a sometimes awkward-appearing general class term, it gives the meaning in a context, and it is readily usable with words that are not nouns.  
尽管定义的分类形式是可以理解的最常见的形式，但其他形式更适合某些情况。等效表达定义是我最喜欢的之一，因为它非常容易构思和理解。它不需要寻找有时显得尴尬的一般类别术语，它在一个上下文中给出了意义，并且可以方便地与非名词一起使用。­

The range form of definition is useful in displaying the vagueness many concepts have. The classification form gives an appearance of precision that is sometimes misleading, though perhaps acceptable at a low level of sophistication. The range form can be an adaptation of the classification form or the equivalent-expression form.  
定义的范围形式在展示许多概念的模糊性方面很有用。分类形式给人一种精确的外观，有时会误导，尽管在低级别的复杂性下可能是可接受的。范围形式可以是分类形式或等价表达形式的一种适应。­

Examples and nonexamples help bring abstract concepts down to earth and to mark the boundaries. It is a good idea to learn to ask for them in situations in which the meaning of a word or a definition is murky.  
例子和非例子有助于将抽象概念具体化，并标明界限。在词义或定义模糊的情况下，学会要求例子和非例子是个好主意。

Any attempt to formulate a definition requires close attention to the situation.  
任何试图制定一个定义都需要密切关注情况。

Using Definitions in Your Writing  
在你的写作中使用定义

It generally helps others to grasp your meaning in a position paper if you define your terms. Often, the classification form is the one to use, but do not neglect the other forms, especially for abstract terms and terms that are not nouns. The range form is helpful when the term’s boundaries in the context are not precise and you want to avoid needless quibbling about a term. However, challenges to a definition are often not just quibbling, especially when the definitions embody a point of ∖iew (making them positional definitions, not simple reported definitions). Positional definitions arc discussed in the next chapter.   
如果您在立场文件中定义了术语，通常可以帮助他人理解您的意思。通常，分类形式是最常用的形式，但不要忽视其他形式，尤其是对于抽象术语和非名词术语。当上下文中术语的边界不明确且您想避免对术语的无谓争辩时，范围形式是有帮助的。然而，对定义的挑战通常不仅仅是无谓的争辩，尤其是当定义体现了一种观点时（使它们成为立场定义，而不是简单的报告定义）。立场定义将在下一章中讨论。

In any case, you now have a set of forms from which to draw in explaining to others the meaning of the terms you use. The choice among these forms should depend on your appraisal of which form is likely to communicate the meaning most effectively in the situation. Sometimes a simple example or synonym will do it. But often the more elaborate forms are needed. It depends on the situation, which includes the nature of your audience, the topic under consideration, and the actual content of the definition.  
无论如何，您现在有一套表格，可以用来向他人解释您使用的术语的含义。在选择这些表格之间时，应根据您对情况中哪种形式最有效地传达含义的评估来决定。有时一个简单的例子或同义词就足够了。但通常需要更详细的形式。这取决于情况，包括您的受众的性质、正在考虑的主题和定义的实际内容。

­troversial aspects of your writing and discussion. In the current chapter, the empha­sis is on effective communication.In the next chapter, you will see some of the roles definitions can play in controversial aspects of your writing and discussion. In the current chapter, the emphasis is on effective communication.  
在下一章中，您将看到定义在您的写作和讨论的有争议的方面中所起的一些作用。在当前章节中，重点是有效的沟通。

Check-Up 12C

True or False?  
真或假？

If the statement is false, change it to make it true. Try to do so in a way that shows that you understand.  
如果陈述是错误的，请将其更改为使其成为真实的陈述。尝试以一种能够显示你理解的方式进行更改。

**12:36 An advantage of the classification form of definition is that it can be used for defining words that are not nouns without making any changes in the words.  
12:36 分类定义的一个优点是，它可以用于对非名词进行定义，而不需要对这些词进行任何改变。**

**12:37 An advantage of equivalent-expression definition is that such definitions are easy to formulate.  
等效表达式定义的一个优点是这样的定义很容易制定。**­tions are easy to formulate.

**12:38 An advantage of range definition is its precision.  
12:38 范围定义的优势在于其精确性。**

**12:39 The word characteristically is more likely to be found in a range definition than a pure classification definition.  
12:39 这个词通常更容易在范围定义中找到，而不是纯粹的分类定义。**­nition than a pure classification definition.

**12:40 A negative example can help mark the boundaries of a concept.  
12:40 一个负面的例子可以帮助标明一个概念的边界。**

Med him Answer

­expression definition. In each case, tell which definition you prefer for the situation given and tell why.For each of the following situations, formulate a classification and an equivalentexpression definition. In each case, tell which definition you prefer for the situation given and tell why.  
对于以下每种情况，制定一个分类和一个等价表达定义。在每种情况下，告诉我你更喜欢哪种定义，并解释原因。

**12:41 Explaining to fifteen-year-olds the meaning of self-evident as it appears in the Declaration of Independence.  
12:41 解释给十五岁的孩子们自明的意义，就像它在《独立宣言》中出现的那样。**

**12:42 Explaining the meaning of compatible to a close friend.  
12:42 向亲密的朋友解释兼容的含义。**

**12:43 Explaining to a college class in critical thinking the meaning of necessarily follows.  
12:43 向一堂大学的批判性思维课程解释必然跟随的含义。***­sarily follows.*

**12:44 Explaining to an introductory art class the meaning of symmetric.  
12:44 向一门入门艺术课解释对称的含义。**

**12:45** Explaining the meaning of *eclipse of the moon* (or *lunar eclipse)* to a ten- year-old child. (If you are not familiar with this term, look it up first.)

**12:46 Explaining the meaning of resistance to a group of people. You decide the situation, but describe it.  
12:45 解释月食（或月全食）的含义给一个十岁的孩子。（如果你对这个术语不熟悉，请先查阅。）12:46 向一群人解释电阻的含义。你决定情境，但要描述清楚。**

**12:47 Explaining to a chance adult acquaintance in the supermarket the meaning of implies.  
12:47 在超市向一个偶然的成年熟人解释 implies 的意思。**

More Medium Answer  
更多中等答案

For Items 12:48-12:55, give a reported (standard meaning) range definition of each of the terms, as you understand them. If you think there is more than one standard meaning, choose only one. Consider your audience to be a close friend. Make adjustments for terms that arc not nouns.  
对于12:48-12:55的项目，请给出每个术语的报告（标准含义）范围定义，按照您的理解。如果您认为有多个标准含义，请选择一个。将您的受众视为亲密的朋友。针对不是名词的术语进行调整。­ments for terms that arc not nouns.

**12:48** Home economics

**12:49** Poetry

**12:50** Sophisticated

**12:51** Psychology

**12:52** Music

**12:53** Friendship

**12:54** Language

**12:55** Sovereign

12:56 From your conversations within the past few days, choose a term that needed defining. Describe the situation and underline and define the term as you understand it, explaining why you chose the form you used. Also tell why you used or did not use an example and a n< nexample.  
12:56 从您过去几天的对话中，选择一个需要定义的术语。描述情况，用您理解的方式下划线并定义该术语，解释为什么选择了所使用的形式。还要说明为什么使用或不使用了一个例子和一个非例子。

**12:57 Take out a recent position paper you have written. Select a key term, the definition of which might help your paper. Using each of the forms of definition that have been considered, formulate a definition of this term, if that is possible, and discuss the activity. More specifically:  
12:57 取出你最近写过的一个立场文件。选择一个关键术语，其定义可能有助于你的论文。使用已经考虑过的各种定义形式，如果可能的话，对这个术语进行定义，并讨论这个活动。更具体地说：**­

1. If possible, formulate a definition of the term in accord with each of the following forms:  
   如果可能的话，请根据以下形式之一给出该术语的定义：
2. Synonym  
   同义词
3. Classification  
   分类
4. Equivalent-expression  
   等价表达式
5. Range  
   范围
6. Example and negative example  
   示例和负例
7. Using a term in the situation  
   在情况中使用一个术语
8. Were you unable to make a definition using any of the forms? If so, try to explain why you were unable.  
   你是否无法使用任何形式进行定义？如果是这样，请尝试解释为什么你无法做到。
9. Which of the resulting definitions best suits your circumstances? Why?  
   适合您情况的哪个定义最合适？为什么？

Suggested Answers for Chapter 12  
第12章的建议答案

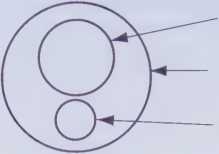
**Check-Up 12A**

12:1 T 12:2 T 12:3 F 12:4 T 12:5 F 12:6 T

**12:3 Replace two overlapping circles, each with a part outside of the other with two coextensive circles.  
12:3 用两个有部分在另一个外面的重叠圆替换为两个共延伸的圆。**

**12:5 Replace have absolutely no counterexamples with be good enough for the situation.   
12:5 用足够适合情况的替代品取代没有任何反例的情况。**

12:7 Incorrect. An ellipse is a plane curved figure, but is not a circle.  
12:7 错误。椭圆是一个平面曲线图形，但不是一个圆。



circles

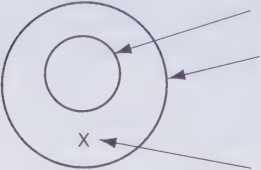
plane curved figures

ellipses

12:8 Incorrect. A frozen lake is a large body of ice. Diagrammed like 12:7.  
12:8 错误。冻结的湖是一大片冰。像12:7那样绘制的图表。

12:9 Deliberately omitted.

12:10 Incorrect. The short story “The Lottery” is a “literary work . . .,” but  
12:10 错误。短篇小说《抽奖》是一部文学作品 . . ., 但



it is not a poem.

poems

literary works with meaning beyond the actual literal meaning of the words

"The Lottery"

12:11 Deliberately omitted.

12:12 This is all right at my (low) level of sophistication.  
12:12 这对我（低）水平来说都没问题。

12:13 This is difficult, but not always impossible. Try it on your friends.  
这很困难，但并非总是不可能的。试试在你的朋友身上。

Check-Up 12B

12:14 T 12:15 T 12:16 T 12:17 T

12:18 Done as an example.  
12:18 完成作为一个例子。

12:19 with three sides  
12:19 with three sides

12:20 four-wheel land motor, mainly for use on public roads  
12:20 四轮陆地汽车，主要用于公共道路上。

12:21 Deliberately omitted.

12:22 that reports what someone else said... what was said  
12:22报告了别人说的话...说了什么

12:23 #1

12:24 #1

12:25 Deliberately omitted.

12:26 #3

12:27 Deliberately omitted.

12:28 #3 (also #4)

12:29 An argument is a set of propositions consisting of a conclusion and one or more reasons offered in support of the conclusion.  
12:29 争论是由结论和一个或多个支持结论的理由组成的命题集合。

12:30 An experiment is an attempt to learn by deliberately changing something and noting what happens.  
12:30 一个实验是有意改变某些事物并记录发生的情况的尝试。­thing and noting what happens.

12:31 Deliberately omitted.

12:32 A conclusion is a proposition that someone is trying to establish in an argument.  
12:32 一个结论是在争论中某人试图建立的命题。

12:33 A bachelor is a man who is not married. Appropriate for young children who are increasing their vocabularies.   
12:33 一个单身汉是一个未婚的男人。适合正在扩大词汇量的年幼儿童。­

12:34 This is up to you.  
12:34 这由你决定。

12:35 Validity is the quality of having the conclusion follow from the evidence. This is a stilted definition, I admit, but my friend is quite literate and good with language.  
12:35 有效性是结论根据证据而得出的质量。我承认这是一个生硬的定义，但我的朋友相当有文化修养，擅长语言。­dence. This is a stilted definition, I admit, but my friend is quite liter­ate and good with language.

Check-Up 12C

12:36 F 12:37 T 12:38 F 12:39 T 12:40 T

12:36 Substitute equivalent-expression ior classification.  
12:36 替代等效表达式或分类。

12:38 Substitute imprecision for precision.  
12:38 替代不精确的地方为精确的地方。

**12:41 Classification: Self-evidence is the quality of being obvious. Equivalent- expressi∣ >n To say that something is self-evident is to say that it is obvious. I prefer the eq u π alent-expression form here because it is less stilted and easier to formulate.  
12:41 分类：自证是显而易见的品质。等效表达-说某事是自证的意思就是说它是显而易见的。我更喜欢这里的等效表达形式，因为它更加流畅且更容易表达。**­ous. I prefer the eq u π alent-expression form here because it is less stilted and easier to formulate.

**12:42 Classification: Compatibility is the quality of being capable of coexisting in harmony. Equivalent-expression: To say that two people are compatible is to say that they can coexist in harmony. I again prefer the equivalent-expression form here because it is less stilted and easier to formulate.  
12:42 分类：兼容性是能够和谐共存的品质。等效表达：说两个人是兼容的意思是说他们能够和谐共存。我在这里再次倾向于使用等效表达形式，因为它更加流畅且更容易表达。**­ing in harmony. Equivalent-expression: To say that two people are

12:43 Deliberately omitted.

**12:44 Symmetry is the quality of being balanced by being the same on both sides. To say that a design is symmetric is to say that it is balanced as a result of being the same on both sides. I again prefer the equivalentexpression form for the same reasons. But even the equivalentexpression definition seems overly abstract and needs supplementation with examples and negative examples.  
12:44 对称是指两侧相同而保持平衡的质量。说一个设计是对称的意思是说它因为两侧相同而保持平衡。出于同样的原因，我再次更喜欢使用等效表达形式。但即使是等效表达的定义似乎过于抽象，还需要通过例子和反例进行补充。**­expression form for the same reasons. But even the equivalent­expression definition seems overly abstract and needs supplementation with examples and negative examples.

12:45 Deliberately omitted.

**12:46 Resistance is the quality of tending to hold something back. To say that I have increased the resistance in an electric circuit is to say that I have increased its tendency to hold back the current. The circumstance is a discussion of an electric iron with a close friend. Again I prefer the equivalent-expression form for the same reasons.  
12:46 抵抗是指倾向于阻止某物的质量。说我增加了电路的抵抗意味着我增加了它阻止电流的倾向。这种情况是与一位亲密的朋友讨论电熨斗的话题。出于同样的原因，我再次更喜欢使用等效表达形式。**

**12:47** Deliberately omitted.

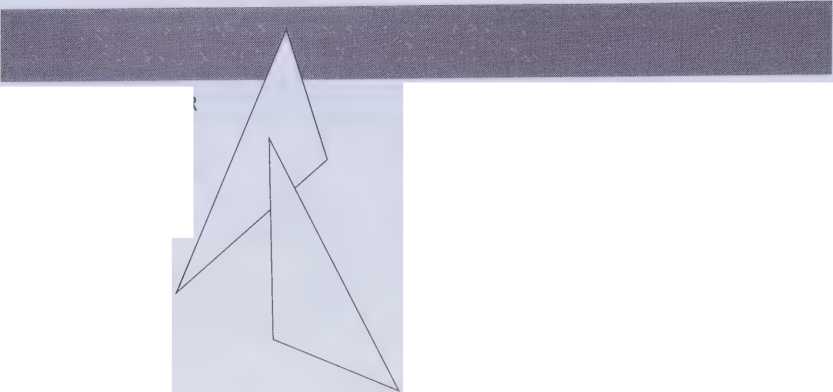
**12:48 Home economics is a field of study characteristically concerned with cooking, sewing, home budgeting, child rearing, decorating and designing home interiors and exteriors, informal education, family life, and the research and disciplinary study underlying these activities.  
12:48 家政是一门研究与烹饪、缝纫、家庭预算、育儿、装饰和设计家居内外、非正式教育、家庭生活以及这些活动的研究和学科研究相关的领域。**

12:49 Deliberately omitted.

**12:50 A sophisticated person is one who is by and large worldly wise, complicated, refined, experienced, and subtle. Note that range form is combined with something that verges on equivalent-expression form here because sophisticated was embedded in a larger expression, which was then equated (using the word is) with another expression.  
12:50 一个复杂的人是一个总体上世故、复杂、精致、经验丰富和微妙的人。请注意，这里将范围形式与接近等效表达形式相结合，因为sophisticated嵌入了一个更大的表达式中，然后使用is这个词将其与另一个表达式等同起来。**­cated, refined, experienced, and subtle. Note that range form is com­bined with something that verges on equivalent-expression form here because

12:51-12:55 Deliberately omitted.

12:56-12:57 These are up to you.  
12:56-12:57 这些由你决定。

Arbitrary Stipulative Definition, Positional Definition, and Definition Strategy  
任意规定性定义，位置性定义和定义策略

**CHAPTER**

Not all definitions are reported definitions. Sometimes, when giving a definition, we are accomplishing (or trying to accomplish) something else. In the following examples, only 13:6a is a pure reported definition:  
并非所有的定义都是报告性的定义。有时候，在给出一个定义时，我们是在完成（或试图完成）其他事情。在下面的例子中，只有13:6a是一个纯粹的报告性定义。­ples, only 13:6a is a pure reported definition:

Example 13:1

Let p = I will miss band practice.  
p = 我会错过乐队练习。

Example 13:2

The C in FRISCO shall stand for clarity (of meaning of words).  
FRISCO中的C代表清晰（词义的清晰）。

Example 13:3

By argument I mean a set of propositions including a conclusion, generally explicitly stated, and one or more reasons, again generally explicitly stated, offered in support of the conclusion.  
通过论证，我指的是一组包括结论的命题，通常是明确陈述的，并且包含一个或多个理由，同样通常是明确陈述的，用来支持结论。

Example 13:4

(In my automobile insurance policy) Car: a four-wheel land motor vehicle designed mainly for use on public roads.  
（在我的汽车保险政策中）汽车：一种主要用于公共道路的四轮陆地机动车辆。

Example 13:5

We define a segregated school as any school in which the percentage enrollment of any minority group varies more than fifteen percentage points from the percentage of that group in the school system as a whole.   
我们将分离学校定义为任何一个少数民族群体的入学百分比与整个学校系统中该群体百分比相差超过15个百分点的学校。­centage of that group in the school system as a whole.

Example 13:6

1. Some people identify freedom with the absence of social direction and physical constraint.  
   一些人将自由与社会指导和身体束缚的缺失联系起来。
2. But rightly conceived, to say that someone is free is to say that the person possesses the power to think reflectively in an intelligent manner (a paraphrase of statements made by John Dewey in How VVt, Think).  
   但是正确地理解，说某人是自由的意思是说这个人具有以智慧的方式进行反思的能力（约翰·杜威在《我们如何思考》中的陈述的释义）­phrase of statements made by John Dewey

Arbitrary Stipulative Definition and Positional Definition  
任意规定的定义和位置定义

­initions are not attempts to In contrast to reported definitions, arbitrary stipulative definitions and positional definitions are not attempts to make factual statements about standard or other usage. Instead, they attempt to give a meaning to a term, phrase, or symbol, or to express a position on an issue. This way of looking at definitions emphasizes what a definer is accomplishing or trying to accomplish, rather than just the content of the definition and the form of the words used. The same words can be used to accomplish different things, just as a tool can be used to do different things. For example, a screwdriver can be used to turn screws, but can also be used to pry things loose, or to serve as a paperweight.  
与报道的定义相反，任意规定性定义和位置性定义并不是试图对标准或其他用法进行事实陈述的尝试。相反，它们试图给一个术语、短语或符号赋予意义，或者表达对一个问题的立场。这种对定义的看法强调定义者所完成或试图完成的事情，而不仅仅是定义的内容和所使用的词语的形式。同样的词语可以用来完成不同的事情，就像工具可以用来做不同的事情一样。例如，螺丝刀可以用来拧螺丝，但也可以用来撬东西，或者用作纸重。­ent things, just as a tool can be used to do different things. For example, a screw­driver can be used to turn screws, but can also be used to pry things loose, or to serve

­tion in the context in which it is offered. Different definitional activities require dif­ferent types of defense.Because most people do not consciously distinguish among these three types of definitional activity (reporting, arbitrarily stipulating, and expressing a position), they do not consciously choose to do one over the other. But these are three identifiable, important, and different definitional activities. You will find it helpful to be able to distinguish among them, so that you can assess the defense available for the definition in the context in which it is offered. Different definitional activities require different types of defense.  
因为大多数人意识不到这三种定义活动（报告、任意规定和表达立场）之间的区别，所以他们并没有有意识地选择其中一种。但这三种定义活动是可以辨认、重要且不同的。你会发现，能够区分它们对你有帮助，这样你就可以评估在提供定义的背景下可用的辩护。不同的定义活动需要不同类型的辩护。

Arbitrary Stipulative Definition

A person giving an *arbitrary stipulative definition* suggests or requests that we, the audience, agree to a meaning for a term for the sake of communication. (Note my use of the equivalent-expression form here.) In effect, an arbitrary stipulative defini­tion provides a communication agreement to which we are invited or requested to assent. Henceforth, for the sake of brevity, I shall just call these definitions *stipula­tive,* leaving out the word *arbitrary,* though keeping it in mind. (This itself is a stip­ulated definition of *stipulation.)*

Examples 13:1 and 13:2 were clear cases of stipulative definition when I offered them earlier in this book. In each case, I was the definer and was inviting you to understand my symbols in the way specified so that you could understand other things that I was saying. If you did not understand what I meant by p or C, then you would not understand what else I was saying. I was asking you to use those symbols in the given way. I needed some symbol or term for the concepts of interest, and selected those.  
一个人给出一个任意的约定性定义，建议或要求我们，听众，为了交流的目的同意一个术语的含义。（注意我在这里使用的等效表达形式。）实际上，任意的约定性定义提供了一个交流协议，我们被邀请或要求同意。从现在开始，为了简洁起见，我将只称这些定义为约定性定义，省略了任意这个词，但仍然记在心里。（这本身就是对约定的定义的一个约定性定义。）在我之前在这本书中提供的例子13:1和13:2是明确的约定性定义的案例。在每个案例中，我是定义者，并邀请你理解我指定的符号的方式，以便你能够理解我说的其他事情。如果你不理解我所说的p或C的含义，那么你就不会理解我所说的其他事情。我要求你按照给定的方式使用这些符号。我需要一些符号或术语来表示感兴趣的概念，并选择了这些符号。

­The primary motivation in a stipulative definition is convenience of communi cation. Only when convenience of communication is an appropriate primary motive is Humpty Dumpty’s freedom-of-definition view fairly close to being valid, and often not even then. (Reminder: He said, “When I use a word, it means just what I choose it to mean—neither more nor less.”) However, a background presupposition in cases of stipulation is that the idea involved is important enough for our attention, so even pure cases of stipulation involve a judgment.  
在规定性定义中，主要的动机是方便沟通。只有在方便沟通是适当的主要动机时，汉普蒂·达姆蒂的自由定义观点才算是相对有效的，而且通常情况下也不是如此。（提醒：他说过，当我使用一个词时，它的意思就是我选择的意思，既不多也不少。）然而，在规定的情况下，一个背景的假设是所涉及的观念足够重要以引起我们的注意，所以即使是纯粹的规定案例也涉及一种判断。

The basis for an apparently stipulative definition can be a reported definition. For example, I did not just invent a wild definition of argument. Based on and to some extent justified by a reported definition of argument in the field of critical thinking, I was both stipulating and (implicitly) reporting it. Similarly, in a class in English literature or a class in physics, the instructor might at one and the same time stipulate and report a meaning for irony or work. Part of an instructor’s job is to teach students the standard meanings of special terms in the field of study. But the definitions are usually presented as requests, suggestions, or commands, as well as reports of usage. Thus, such definitions are usually partly stipulative (backed up by authority) as well as partly reported.  
显然约定性定义的基础可以是一个报告性定义。例如，我并不是随意创造了一个关于争论的荒谬定义。基于批判性思维领域中的一个报告性定义，我既在约定，也在（隐含地）报告它。同样，在英国文学或物理学课上，教师可能同时约定和报告讽刺或工作的含义。教师的一部分工作是教导学生学科领域中特殊术语的标准含义。但这些定义通常被呈现为请求、建议或命令，同时也是对使用情况的报告。因此，这些定义通常既是部分约定性的（以权威支持），也是部分报告性的。­tions are usually presented as requests, suggestions, or commands, as well as reports ­ity) as well as partly reported.

Positional Definition  
位置定义

To give a positional definition is to express a position or point of view on some issue. This is a third kind of definitional activity. The definition of murder that was given to my jury (see Chapter 7, Check-Up Item 7:8) was a positional definition. Roughly speaking, the position expressed by that definition of murder is that an act that fits those criteria is among the most serious of crimes, deserving of serious punishment. Generally, the primary thing to defend in a positional definition is the position expressed by the definition.  
给出一个位置定义是表达对某个问题的立场或观点。这是第三种定义活动。给我的陪审团的谋杀定义（见第7章，检查项目7:8）是一个位置定义。粗略地说，谋杀的这个定义所表达的立场是，符合这些标准的行为是最严重的犯罪之一，应该受到严厉的惩罚。通常，位置定义中需要捍卫的主要是所表达的立场。

Examples 13:5 {segregated) and 13:6b {free) were clearly positional definitions in the context in which they appeared. The goal was not simply convenience in communication. The people giving those two definitions were trying to attach criteria to a term in a way that will have some impact above and beyond the communicative function of a definition. These definitions incorporate a position on an issue. In our culture and social fabric, these two terms already have some kind of positive or negative connotation.  
例子13:5（隔离）和13:6b（自由）在它们出现的上下文中明显是位置性定义。目标不仅仅是方便沟通。给出这两个定义的人试图以某种方式将标准附加到一个术语上，使其在定义的沟通功能之上产生一些影响。这些定义融入了对一个问题的立场。在我们的文化和社会结构中，这两个术语已经具有某种正面或负面的含义。­munication. The people giving those two definitions were trying to attach criteria to ­ative connotation.

*Segregation has a negative connotation. That is, the prevailing feeling in our culture at the time of writing is rejection of segregation, and there are legal objections to segregation. Members of our society generally feel pressure to eliminate whatever is labeled segregation. This has happened in the State of Illinois, where the given definition has been used. The definition incorporated a position by some officials of the State of Illinois against what was defined as segregation in Example 13:5, and people felt pressure to eliminate it.  
隔离具有负面含义。也就是说，在我们撰写时代的文化中，普遍的感觉是对隔离的拒绝，并且对隔离存在法律上的反对意见。我们社会的成员通常感受到消除被标记为隔离的任何事物的压力。这在伊利诺伊州已经发生，给定的定义已被使用。该定义包含了伊利诺伊州一些官员对于在示例13:5中定义的隔离的立场，并且人们感受到了消除它的压力。*­tions to segregation. Members of our society generally feel pressure to eliminate whatever is labeled ­cials of the State of Illinois against what was defined as

It is similar with Dewey’s definition of/h’f, except that free has a positive connotation in our culture. Generally, whatever is labeled as free is lauded by being so labeled, and whatever is labeled as a denial of freedom is condemned by being so labeled. Definition 13:6b is an attempt to get certain things labeled by the word free. For example, some people might judge compulsory education to be an infringement on the freedom of parents and children. According to the definition of freedom that Dewey rejected (13:6a, “absence of social direction and physical constraint”), compulsory education reduces the freedom of the students and their parents. This is so because the students are required to attend school, and the parents are required to see to it that their children attend school. Social direction and physical constraint are not absent under compulsory education, so freedom (in the sense that Dewey reported and rejected) is to that extent diminished. Thus, to say that compulsory education interferes with freedom (as it truly does, in this sense of freedom) is to assert that compulsory education has at least some weakness. This sense of the word freedom (that Dewey rejected) is sometimes called negative freedom. The word negative in negative freedom is not to be confused with the word negative in negative connotations. The same goes for the word positive.  
它与杜威对/hf的定义相似，只是在我们的文化中，自由具有积极的含义。通常，被标记为免费的东西会因此而受到赞扬，而被标记为剥夺自由的东西会因此而受到谴责。13:6b的定义是试图让某些事物被标记为自由。例如，有些人可能认为义务教育侵犯了父母和孩子的自由。根据杜威拒绝的自由定义（13:6a，社会指导和身体限制的缺席），义务教育减少了学生和他们父母的自由。这是因为学生被要求上学，父母被要求确保孩子上学。在义务教育下，社会指导和身体限制并不存在，因此自由（杜威所报道和拒绝的意义上）在某种程度上减少。因此，说义务教育干扰了自由（在这种自由的意义上确实如此）就是在断言义务教育至少有一些弱点。这种自由的意义（杜威所拒绝的）有时被称为负面自由。负面自由中的负面一词不应与负面含义中的负面一词混淆。积极一词也是如此。­notation in our culture. Generally, whatever is labeled as free is lauded by being so labeled, and whatever is labeled as a denial of freedom is condemned by being so labeled. Definition 13:6b is an attempt to get certain things labeled by the word ­pulsory education reduces the freedom of the students and their parents. This is so because the students are required to attend school, and the parents are required to see to it that their children attend school. Social direction and physical constraint are not absent under compulsory education, so freedom (in the sense that Dewey reported and rejected) is to that extent diminished. Thus, to say that compulsory education interferes with freedom (as it truly does, in this sense of *­tive­notations.*

The positional definition of the word∕nτ offered by Dewey in Example 13:6b provides one version of what is sometimes called positive freedom: the power to do. . . . According to the definition in Example 13:6b, compulsory education does not infringe on freedom, but rather promotes it, assuming that compulsory education actually does facilitate the possession by students of the power to think reflectively in an intelligent manner. Compulsory education usually contributes to learning to read and write. The ability to read and write presumably contributes to the power to think reflectively in an intelligent manner (depending on the further positional definition of reflective thinking and intelligence).  
单词∕nτ的位置定义由杜威在例子13:6b中提供，提供了一种被称为积极自由的版本：行动的能力...根据例子13:6b中的定义，义务教育并没有侵犯自由，而是促进了自由，假设义务教育确实有助于学生以智慧的方式进行反思性思考。义务教育通常有助于学习阅读和写作。阅读和写作的能力可能有助于以智慧的方式进行反思性思考（取决于反思性思考和智慧的进一步位置定义）。­tion actually does facilitate the possession by students of ­nition of reflective thinking and intelligence).

One danger in the positive definition of freedom as “the power to do . . .” is that the definition is vague about what comes after the word do. Totalitarians who have no respect for negative freedom can accept a positive definition of freedom, such as “the power to do what one is supposed to do,” with the totalitarian definer specifying what one is supposed to do.  
正面定义自由为做的能力存在一个危险，即对于做之后的内容定义模糊不清。对于不尊重负面自由的极权主义者来说，他们可以接受正面定义的自由，比如做自己应该做的事情的能力，而极权主义者会明确指定应该做什么。­ifying what one is supposed to do.

This problem even arises to some extent with Dewey’s definition, which is con- siderablv more explicit than “the power to do. . . .” The terms *reflective thinking* and *intelligent* are themselves in need of some interpretation. The interpretation provided could radically affect the worth of Dewey’s positive freedom. Suppose that it is assumed that *acting in an intelligent manner* is intended to mean *acting in accord with the will of the leader.* Then the definition could be used in service of totalitarianism. I am not saving that Dewev interprets *intelligence* this way. I am only trying to show that the positive definition of *freedom* can be used to oppose freedom in the standard sense of the term (assuming that the negative definition gives the standard sense of the term). We must beware when people start shifting the meanings of terms in our language. (I am not saying that such shifting is always wrong—just warning you to beware.)

­ing for a term. When positional definitions embody controversial value judgments and are offered without defense, they are often called These positional definitions clearly incorporate a position about some issue or question. Thev are not merely innocent attempts to find a convenient neutral meaning for a term. When positional definitions embody controversial value judgments and are offered without defense, they are often called persuasive definitions.  
这个问题甚至在杜威的定义中也存在一定程度的问题，这个定义比能力更明确... 反思性思维和智能这些术语本身需要一些解释。所提供的解释可能会对杜威的积极自由的价值产生根本性的影响。假设假定智能行为意味着按照领导的意愿行事，那么这个定义可以用来服务于极权主义。我并不是说杜威以这种方式解释智能。我只是试图表明，积极自由的定义可以用来反对标准意义上的自由（假设消极定义给出了标准意义上的自由）。当人们开始改变我们语言中术语的含义时，我们必须小心。（我并不是说这种改变总是错误的-只是警告你要小心。）这些位置定义明显包含了对某个问题或问题的立场。它们不仅仅是为了找到一个方便的中立含义的无辜尝试。当位置定义体现有争议的价值判断，并且没有提供辩护时，它们通常被称为有说服力的定义。

Example 13:4, the definition of car, is from my insurance policy. It is partly stip- ulative and partly positional. A company that sells automobile insurance needs to be quite precise about what sort of thing it is insuring because some vehicles are more risky to insure than others. The definition is not intended to be a reported definition of the word car in its most standard sense because it includes pick-up trucks and vans under the category car, and does not include racing cars. But the company’s purpose in writing the insurance policy was not to report the standard meaning of the word car, but rather to specify one kind of thing that it offers to insure to a certain extent for a stated price. Given the insurance deal the company offers for cars, its definition of car is a positional definition. On the other hand, the company could easily have chosen another word in the place of car (perhaps automobile) and defined and used the word car differently. So, in a way, the definition is stipulative.  
例13:4，汽车的定义，来自我的保险单。它部分是规定性的，部分是位置性的。销售汽车保险的公司需要非常准确地说明他们所保险的是什么样的东西，因为有些车辆比其他车辆更容易出险。这个定义并不意味着是对汽车这个词在其最标准意义上的报道，因为它将皮卡车和货车都归类为汽车，而不包括赛车。但是公司编写保险单的目的并不是为了报告汽车这个词的标准含义，而是为了明确一种他们以一定程度提供保险的东西，并以一定价格进行保险。根据公司为汽车提供的保险交易，它对汽车的定义是一种位置性定义。另一方面，公司也可以轻易地选择另一个词来替代汽车（也许是汽车），并且对汽车进行不同的定义和使用。所以，在某种程度上，这个定义是规定性的。

­inition. Usually no defense at all is needed for a pure stipulative definition. Often, if The line between stipulative and positional definition is not sharp, but, roughly speaking, more defense of the implicit value judgment is needed for a positional definition. Usually no defense at all is needed for a pure stipulative definition. Often, if a person wants to define a term in a particular way for the purpose of communication, then the person has a right to do that. However, one important thing about which we should then be concerned is the convenience of the stipulation. Another concern is the importance of the associated idea.  
规定性定义和位置性定义之间的界限并不明确，但大致上来说，位置性定义需要更多对隐含价值判断的辩护。通常，纯粹的规定性定义不需要任何辩护。通常情况下，如果一个人想要为了交流的目的而以某种方式定义一个术语，那么这个人有权这样做。然而，我们应该关注的一个重要问题是规定的便利性。另一个问题是相关观念的重要性。­tion, then the person has a right to do that. However, one important thing about which we should then be concerned is the convenience of the stipulation. Another concern is the importance of the associated idea.

A third concern can arise from confusion caused by the difference between the stipulated meaning and the standard meaning, depending on the particular term and the situation. For example, in our contemporary society, offering the above definition of segregation (Example 13:5) as a mere stipulative definition would usually be misleading. This is because the word segregation (when applied to schools) already is built into the public mind as referring to something bad. Most of us are not flexible enough to treat Example 13:5 as only a request to understand that the specified kind of situation is what the speaker is referring to when he or she says segregation. Rather, we will feel some pressure to treat whatever is accordingly labeled segregation as wrong.  
第三个问题可能源于特定术语和情境之间规定含义和标准含义的差异所导致的混淆。例如，在我们当代社会中，将隔离（示例13:5）的上述定义仅视为规定性定义通常会产生误导。这是因为当将隔离一词（用于学校）应用于公众心中时，已经被认为是指某种不好的事情。我们大多数人并不足够灵活，无法将示例13:5仅视为要求理解说话者所指的特定情况。相反，我们会感到一些压力，将相应标记为隔离的任何事物视为错误。­leading. This is because the word ­ation is what the speaker is referring to when he or she says

If, on the other hand, we are in a group of flexible people who actually will treat the definition of segregation in Example 13:5 merely as a rule to facilitate communication, then the definition can appropriately be stipulated. But we must be sure that no positive or negative impact accompanies the word in that situation. In most situations, that definition should not be presented as a mere stipulation because people arc not ordinarily that flexible.  
如果，另一方面，我们身处一个灵活的人群中，实际上会将《例13:5中的隔离定义》仅作为促进沟通的规则来对待，那么这个定义可以适当地被规定。但我们必须确保在这种情况下，这个词没有任何积极或消极的影响。在大多数情况下，这个定义不应该被简单地规定，因为人们通常不是那么灵活。­cation, then the definition can appropriately be stipulated. But we must be sure that ­ations, that definition should not be presented as a mere stipulation because people

­ing justification—that segregation (so defined) is wrong. It is a mistake to treat that definition as a stipulative definition (needing little or no defense) because it will prob­ably I am not saying that segregation (so defined) is acceptable or unacceptable. Rather, I am saying that offering that meaning for the term as a mere stipulation might illegitimately have the impact of persuading people—without an accompanying justification—that segregation (so defined) is wrong. It is a mistake to treat that definition as a stipulative definition (needing little or no defense) because it will probably have an impact that needs defense.  
我并不是说隔离（如此定义）是可以接受或不可接受的。相反，我是在说将该含义仅仅作为一种规定可能会不合法地说服人们——在没有附带的理由的情况下——隔离（如此定义）是错误的。将该定义视为规定性定义（需要很少或没有辩护）是错误的，因为它很可能会产生需要辩护的影响。

Unfortunately, there is a possible confusion built into the use of the term *stip­ulate,* as I have stipulated its meaning here. Positional definitions are stipulated in the everyday sense of *stipulate.* For example, John Dewey was, in a way, stipulating his definition of *free.* That is why I started out by talking about arbitrarv stipulation. For these purposes, please accept my stipulation that the word *stipulation* (in the pure case) shall refer only to arbitrary attempts to establish convenience of communication —without implying an answer to basic underlying issues, except the issues regarding whether the idea concerned is important and whether the stipulation is convenient. To say that a decision is *arbitrary,* in the sense in which I am using it here, is to say that it does not matter which way the decision goes. (Note that I have just given an equivalent-expression stipulative/reported definition of *arbitrary.)*

TABLE 13.1 Three Dimensions of Definition: Form, Activity and Content

Activity

Form

*Report a Meaning Arbitrarily Stipulate a Meaning Express a Position  
很不幸，使用"规定"这个词存在一种可能的混淆，就像我在这里规定了它的意思一样。位置定义是根据日常意义上的规定来规定的。例如，约翰·杜威在某种程度上规定了他对"自由"的定义。这就是为什么我一开始就谈到了任意规定。为了这些目的，请接受我对"规定"一词（在纯粹的情况下）的规定，它仅指任意尝试建立方便的沟通方式，而不涉及基本问题的答案，除非涉及到所涉及的观念是否重要以及规定是否方便的问题。在我这里使用的意义上，说一个决定是任意的，意味着决定的结果无关紧要。（请注意，我刚刚给出了一个等价表达的规定/报告的"任意"定义。） 表13.1 定义的三个维度：形式、活动和内容活动报告一个含义任意规定一个含义表达一个立场*



Classification

Equivalent- Expression

Range

Example/Negative

Example

Use in Context

Synonym

13:6a (freedom)

13:3 (argument)\*

13:1 (p), 13:2 (C)

13:4 (car)\*

13:5 (segregated)\*

13:6b (free)

*Note: 1. For purposes of illustration, some cells are filled in with example numbers.  
注意：1. 为了说明，某些单元格填写了示例数字。*

1. Because the existence of the content dimension is obvious (that is, it is obvious that definitions can differ in content) and because this paper is only two-dimensional, the content dimension is shown by an arrow that should be visualized as coming out of the page.  
   因为内容维度的存在是显而易见的（即，定义在内容上可能有所不同），而且本文只有二维，所以内容维度用一个箭头表示，应该被想象成从页面上伸出来。

\*3. Example 13:3, the definition of argument, is borderline between arbitrary stipulative and reported. Example 13:4, the definition of car, is borderline between arbitrary stipulative and positional.  
3. 例子13:3，argument的定义，介于任意规定和报告之间。例子13:4，car的定义，介于任意规定和位置性之间。

Example 13:5. the definition of segregated, is borderline between classification and equivalent expression, although it is closer to being of classification form.  
Example 13:5. 定义分离，介于分类和等效表达之间，尽管更接近分类形式。

At this point, it might be helpful to examine Table 13:1, which depicts the form, activity', and content of a definition as three different dimensions of definition. Every definition given by someone is a composite of these three dimensions. Examples 13:1-13:6 are placed in the table.  
在这一点上，检查表13:1可能会有所帮助，它将定义的形式、活动和内容作为三个不同的维度呈现。每个人给出的定义都是这三个维度的组合。示例13:1-13:6放置在表中。

Summary  
摘要

*Arbitrary stipulative definitions are attempts to specify a meaning for a term for the sake of convenience in communication. Little or no defense is required, but one should be careful to avoid stipulating a meaning for a term with positive or negative connotations in a situation in which the participants will not be flexible enough to leave these connotations out of their thinking. For the sake of brevity, I generally leave out the term arbitrary in labeling these definitions.  
任意的约定性定义是为了方便沟通而试图为一个术语指定意义的尝试。不需要太多辩护，但应当小心避免在参与者无法灵活排除这些内涵的情况下，为一个带有正面或负面内涵的术语规定意义。为了简洁起见，我通常在标记这些定义时省略了“任意”一词。*

*Positional definitions are those that express or incorporate a position on an issue. Often the position is controversial. When this is so, and defense is not provided, they could also be called persuasive definitions. Although defense for positional definitions need not always immediately accompany them, defense should be available, and we should be ready to request a defense for positional definitions when they are offered to us.   
定位定义是表达或包含对一个问题的立场的定义。通常这个立场是有争议的。当情况如此时，如果没有提供辩护，它们也可以被称为有说服力的定义。虽然定位定义的辩护不一定总是立即随之而来，但辩护应该是可用的，当有人向我们提供定位定义时，我们应该准备好要求辩护。*­nitions need not always immediately accompany them, defense should be available, and we should be ready to request a defense for positional definitions when they are offered to us.

Check-Up 13A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**13:1 A positional definition expresses a position on a question or an issue.  
13:1 位置定义表达了对问题或议题的立场。**

**13:2 A stipulative definition has as its primary purpose convenience in communication.  
13:2 一个约定定义的主要目的是为了方便沟通。**

**13:3 Humpty Dumpty’s statement that a word means just what he chooses it to mean is acceptable in situations calling for stipulative definition.  
13:3 汉普蒂·达姆蒂的说法，即一个词的意思就是他选择的意思，在需要规定定义的情况下是可以接受的。**

**13:4 Humpty Dumpty’s statement is acceptable in situations calling for positional definition.  
13:4 Humpty Dumpty的陈述在需要位置定义的情况下是可以接受的。**

**13:5 The following is a positional definition of educated.: “An educated person is one who is a critical thinker and is well-informed about this and other cultures” (offered by a professor in a discussion of the general goals of the University of Illinois).  
13:5 下面是对受过教育的人的位置定义：受过教育的人是一个具有批判性思维并对这个文化和其他文化有很好了解的人（由伊利诺伊大学的一位教授在讨论该大学的总体目标时提供）。**­son is one who is a critical thinker and is well-informed about this and other cultures” (offered by a professor in a discussion of the general goals of the University of Illinois).

Medium Answer (less than one page for each)  
中等答案（每个不超过一页）

**13:6 Choose one of the following often-contested terms. Imagine and describe a situation in which you would offer a positional definition of the term, and state your positional definition of the term for that situation.  
13:6 选择以下常争议的术语之一。想象并描述一个情境，在这个情境中你会提供一个立场性的定义，并陈述该术语的立场性定义。**

|  |  |  |
| --- | --- | --- |
| equality of opportunity | genocide | education |
| science | a responsible person | teaching |
| art | a friend | proof |
| justice | democracy | home economics |
| fascist | healthy | literacy |
| sexual harassment | critical thinking | person |

**13:7 Defend the positional definition you gave in Item 13:6.  
13:7 保持你在项目13:6中给出的位置定义。**

**13:8 Iudge the following (partial) positional definition of love and defend your judgment:  
13:8 请评判以下（部分）关于爱的位置定义，并为你的判断辩护：**

*Love is not having to say that you’re sorry.  
爱就是不需要说对不起。*

**13:9 In a newspaper, magazine, textbook, or lecture, find a definition that is a stipulation offered primarily for the sake of convenience. Quote and cite it. Judge whether the definition provides convenience, given the situation, and defend your judgment.  
13:9 在报纸、杂志、教科书或讲座中，找到一个主要为方便起见提供的规定性定义。引用并引用它。判断该定义是否在给定情况下提供了方便，并为您的判断辩护。**

**13:10 Judge the positional definition of freedom {positive freedom) that I attributed to John Dewey (Example 13:6b). Defend your judgment.  
13:10 判断我所归因于约翰·杜威（示例13:6b）的自由的位置定义（积极自由）。为你的判断辩护。**

+ Definitional Strategy

­inition arc very different things. In discussing issues with others, developing oral andReporting a meaning, stipulating a meaning, and expressing a position through a definition arc very different things. In discussing issues with others, developing oral and written material for presentation to other people, and understanding what others have done, you must make sure that these activities are not confused.  
报告一个含义，规定一个含义，并通过定义来表达一个立场是非常不同的事情。在与他人讨论问题，为其他人开展口头和书面材料的编写，并理解他人的所做所为时，必须确保这些活动不会混淆。

The Need for Defense of Positional Definitions  
位置定义的必要性

­ulations tor convenience and need no defense. The rule that you can define a term any way you please does not apply to positional definitions. These must be justified. For the One principal danger in dealing with positional definitions is acting as if they are stipulations tor convenience and need no defense. The rule that you can define a term any way you please does not apply to positional definitions. These must be justified. For the segregation definition, the wrongness of situations that would thereby be judged segregated needs to be shown. For the positive freedom definition, it must be shown that it is generally more important to help students to think reflectively in an intelligent manner than it is to eliminate school-related constraints on them.  
在处理位置定义时，一个主要的危险是表现得好像它们是为了方便而规定的，不需要辩护。你可以任意定义一个术语的规则不适用于位置定义。这些必须被证明是合理的。对于隔离定义，需要展示出判断为隔离的情况的错误性。对于积极自由定义，必须展示出帮助学生以反思和智慧的方式思考通常比消除与学校相关的限制对他们更重要。

Both of these issues are more complex than I have indicated, but I hope you get the flavor. Problems of definition and meaning like this tend to be the most complex and difficult critical thinking problems.  
这两个问题比我所示意的更加复杂，但我希望你能理解。像这样的定义和意义问题往往是最复杂和困难的批判性思维问题。­plex and difficult critical thinking problems.

­port for a conclusion, we have a right to ask for reasons. The simplest way to handle this problem is to ask “Why?” That is, “Why should that definition be accepted?” The answer “1 have a right to define my terms however I like” is not acceptable for posi­tional definitions. If someone gives you such an answer, then, in reply, you can point out some consequences that w ould arise from accepting the definition and point out different consequences that would arise from accepting a competing definition. Then you can point out that these differences must be defended.Because offering a positional definition often amounts to assuming crucial support for a conclusion, we have a right to ask for reasons. The simplest way to handle this problem is to ask “Why?” That is, “Why should that definition be accepted?” The answer “1 have a right to define my terms however I like” is not acceptable for positional definitions. If someone gives you such an answer, then, in reply, you can point out some consequences that w ould arise from accepting the definition and point out different consequences that would arise from accepting a competing definition. Then you can point out that these differences must be defended.  
因为提供位置定义通常等同于假设对结论的重要支持，所以我们有权要求理由。处理这个问题的最简单方法是问为什么？也就是说，为什么应该接受那个定义？对于位置定义来说，回答“我有权利随意定义我的术语”是不可接受的。如果有人给你这样的回答，那么你可以回应指出接受该定义会导致一些后果，并指出接受竞争定义会导致不同的后果。然后你可以指出这些差异必须被辩护。

Introducing Confusion with a Stipulative Definition  
引入混乱的约定定义

­tive, but in fact are not, and risk throwing a discussion off the track-Another possible danger lies in the use of definitions that are claimed to be stipulative, but in fact are not, and risk throwing a discussion off the track-  
另一个可能的危险在于使用被声称为约定性的定义，但实际上并非如此，并且有可能使讨论偏离轨道

Example 13:7

**J: Please don’t argue with me about this. I want you to meet the Ramirez-Craigs. M: (in a nasty- voice) I don’t want to. (angrily) You’re bothering me. Go away! J: I asked you not to argue.  
J: 请不要和我争论这个。我希望你见见拉米雷斯-克雷格一家。M: （用恶毒的声音）我不想见。 （愤怒地）你在打扰我。走开！J: 我叫你不要争论。**

**M:** T’m not arguing.

**J: What do you think you’re doing, then?  
你觉得你在做什么？**

**M: Just telling you how I feel about it. I haven’t given you any reasons; I’ve just told you how I feel. It’s my intuition. I have no argument. Now leave me alone. You’re making me angry.  
只是告诉你我对此的感受。我还没有给你任何理由；我只是告诉你我是怎么感觉的。这是我的直觉。我没有争论。现在离开我。你让我生气了。**

J: You are arguing. You always argue, it seems for the sake of annoying me.  
你在争论。你总是争论，似乎是为了惹我生气。

**M: Look, this is silly. We are using the word argument in different ways. In order to avoid confusion, let’s define argument as an attempt to prove something by offering reasons in support of it. In that sense of argument, I am not arguing with you.  
看，这很荒谬。我们对于"argument"这个词的使用方式不同。为了避免混淆，让我们将"argument"定义为试图通过提供支持理由来证明某事的尝试。从这个意义上说，我不是在与你争论。**

**J: All right, in that sense of argument you are not arguing with me. Then I wonder why you always disagree with me in that nasty way of yours. And I wonder why you do not want to meet the Ramirez-Craigs.   
好吧，在那种争论的意义上，你并不是在和我争论。那么我想知道为什么你总是以那种讨厌的方式不同意我。我也想知道为什么你不想见面拉米雷斯-克雷格斯夫妇。**

The putative stipulative definition of the word argument offered by M did not solve their basic problem and risked throwing the discussion off the track, even though it in fact is the definition I stipulated earlier in this book. (Note the importance of the situation.) But, given J’s flexibility about the meaning of the word argument (in the last entry), M’s definition did not prevent them from discussing their problem. The dispute about whether M was arguing was a fruidess dispute, introduced by M. It turned out that J was flexible enough, and immediately stated the two issues without using the word argument. If J had not been that flexible, then M’s stipulation might have succeeded in confusing things. You might also look at M’s stipulation as a deliberate device to throw J off the track, but J did not fall into the trap. J stated the two issues without using the word argument.  
由M提供的对词汇"argument"的推定规定性定义并没有解决他们的基本问题，并且有可能使讨论偏离轨道，尽管事实上这是我在本书中先前规定的定义。（注意情况的重要性。）但是，鉴于J对词汇"argument"的含义的灵活性（在上一条目中），M的定义并没有阻止他们讨论问题。关于M是否在争论的争议是一场无果的争议，是M引入的。结果证明，J足够灵活，并立即陈述了两个问题，而没有使用词汇"argument"。如果J没有那么灵活，那么M的规定可能会成功地使事情混淆。你也可以将M的规定视为一种故意的手段来使J偏离轨道，但J并没有落入陷阱。J陈述了两个问题，而没有使用词汇"argument"。­*­*­

One way to handle such attempts to throw a discussion off the track is to be flexible, like J. Express your concerns in ways that adhere to someone’s stipulative definition, as J did.  
处理这种试图偏离讨论轨道的方法之一是像J一样灵活。以符合某人的约定定义的方式表达你的关切，就像J一样。

Another way is to refuse the stipulation. J might have said that M knows very well what J meant, and in that sense of the word argument, M and J were arguing. This strategy is appropriate if you have trouble being that flexible, or if there are other people listening, or somehow involved, who would have trouble being that flexible.  
另一种方法是拒绝这个规定。J可能会说M很清楚J的意思，在那种争论的意义上，M和J正在争论。如果你很难变得那么灵活，或者有其他人在听或以某种方式参与，而这些人也很难变得那么灵活，那么这种策略是合适的。

Using a Positional Definition to Avoid the Issue  
使用位置定义来避免问题

­tion of a term, draw a conclusion using the term in that sense, and then apply the conclusion in a way that actually ignores the real original issue, although the applica­tion may appear to bear on the original issue. This, in effect, is defining the problem Another way of misusing definitions is to argue for (or assume) a positional definition of a term, draw a conclusion using the term in that sense, and then apply the conclusion in a way that actually ignores the real original issue, although the application may appear to bear on the original issue. This, in effect, is defining the problem out of existence. Consider this discussion:  
滥用定义的另一种方式是主张（或假设）一个术语的位置定义，用该意义下的术语得出一个结论，然后以一种实际上忽略了真正的原始问题的方式应用该结论，尽管这种应用可能与原始问题有关。实际上，这是将问题定义为不存在。考虑以下讨论：

Example 13:8

**J: You were selfish in cutting into that lunch line when those people weren’t looking.  
你在那些人不注意的时候插队是自私的。**

**M: So what? I just did what anyone would do.  
那又怎样？我只是做了任何人都会做的事情。**

**J: That’s not true, but it doesn’t matter whether other people would do that. It was selfish.  
J: 这不是真的，但其他人是否会这样做并不重要。这是自私的。**

**M: Let’s define our terms. To be selfish is to act in accord with your very own desires. Right?  
让我们定义一下术语。自私就是按照自己的欲望行事。对吗？**

**J: Hmm. Γm not sure.  
我：嗯。我不确定。**

**M: That’s an enlightened definition of the word selfish. It makes deciding about whether someone is selfish purely a factual matter People have desires. If they act in accord with them, then they are selfish. It’s as simple as that. This definition leaves out the subjective meaning that some people have for the word selfish, so it is a better definition.  
这是对自私一词的开明定义。这使得判断某人是否自私纯粹是一个事实问题。人们有欲望。如果他们按照这些欲望行事，那么他们就是自私的。就是这么简单。这个定义排除了一些人对自私一词的主观意义，所以它是一个更好的定义。**

*J: I follow you so far. Go on.  
我理解你的意思。继续说吧。*

**M: Good. Now you should be able to see that everything everybody does is really selfish. Γhat,s because people really act in accord with their desires all the time. If they did not desire to do what they do, they would not do it.   
好。现在你应该能够看到，每个人所做的一切都是出于自私。这是因为人们一直按照他们的欲望行事。如果他们不渴望做他们所做的事情，他们就不会去做。**

J: So?

**M: Because everything everybody does is selfish, you cannot condemn me for doing something selfish. That wouldn’t be fair.  
因为每个人所做的一切都是自私的，你不能因为我做了一些自私的事情而谴责我。那不公平。**

­tion of What do you think J’s response could be? M has managed to make it appear that cutting in line is no worse than anything else anybody does. Under M’s definition of selfish, (together with M’s assumption that people always act in accord with their desires), being selfish is unavoidable behavior. The position expressed by M’s definition is that there is nothing wrong with what M did.  
你认为Js的回应可能是什么？M设法让插队看起来不比其他人做的任何事情更糟糕。根据M对自私的定义（以及M假设人们总是按照自己的欲望行事），自私是不可避免的行为。M的定义表达的立场是，M所做的事情没有错。

One response could be just to say, ‘■‘'Nonsense.” This might well be appropriate on some occasions, but if M is serious about it, this response does not help.  
一个回应可以只是说，'■'。这在某些情况下可能是合适的，但如果M是认真的，这个回应没有帮助。

Another response could be for J to be flexible and accept M’s definition and argument (which only defends the selfishness of cutting in line). J should then claim that M’s cutting into line was still unfair to the people who were displaced.  
另一种回应可能是J要灵活并接受Ms的定义和论点（只是为了捍卫插队的自私行为）。然后，J应该声称Ms插队对被迫让位的人仍然是不公平的。

Alternately, still accepting M’s definition, J could distinguish among types of selfishness, perhaps praiseworthy selfishness, neutral selfishness, and condemnable selfishness. Then J could make the point that M’s cutting into line was condemnable selfishness. Except for the change in wording, this is the same point ∫ tried to make in the first place. Two difficulties with this strategy are that it requires flexibility on J’s part (and that of M and the audience, if any), and that it takes time. It also requires quick thinking. Producing useful distinctions on the spot is often difficult.  
或者，仍然接受Ms的定义，J可以区分自私的类型，也许是值得称赞的自私、中立的自私和应受谴责的自私。然后J可以指出Ms插队是应受谴责的自私。除了措辞上的变化，这与∫一开始试图表达的观点是相同的。这种策略存在两个困难，一是需要J的灵活性（以及M和听众的灵活性，如果有的话），二是需要时间。这还需要快速思考。在当场提出有用的区别通常是困难的。

A third kind of reply is to refuse to accept the positional definition of selfish. This could involve defending the so-called subjective element in the word selfish. The word selfish in my desk dictionary is defined as “concerned chiefly or only with oneself, without regard for the well-being of others.” ∫ could say that it was easy to see that M’s cutting into line was done without regard for the well-being of others. So it was not difficult to show that the “subjective” element (acting without regard for the wellbeing of others) applies in this case. So the concept indicated by the reported definition in my dictionary is not defective in the way alleged by M. That concept does not need to be replaced, J could conclude. J could also note that not all people are selfish, in this dictionary sense, because many people act out of regard for the well-being of others, thus undercutting M’s claim that everything everybody does is selfish.  
第三种回答是拒绝接受自私的位置定义。这可能涉及捍卫所谓的自私词中的主观因素。我的桌面词典中定义的自私一词是指主要或仅关注自己，不考虑他人的幸福。我可以说，很容易看出Ms插队是不考虑他人幸福而做的。因此，在这种情况下，很容易证明主观因素（不考虑他人幸福而行动）适用。因此，我可以得出结论，我词典中所报告的定义所指示的概念并非M所声称的那样有缺陷。我不需要替换那个概念。J还可以指出，并非所有人都是自私的，按照这本词典的意义，因为许多人出于对他人幸福的关心而行动，从而削弱了Ms关于每个人所做的一切都是自私的主张。­out regard for the well-being of others.” ∫ could say that it was easy to see that M’s cutting into line was done without regard for the well-being of others. So it was not difficult to show that the “subjective” element (acting without regard for the well­being of others) applies in this case. So the concept indicated by the reported defini­tion in my dictionary is not defective in the way alleged by M. That concept does not need to be replaced, J could conclude. J could also note that not all people are self­ish, in this dictionary sense, because many people act out of regard for the well-being of others, thus undercutting M’s claim that everything everybody does is selfish.

Equivocation: Shifting Meaning in Mid-Argument  
模棱两可：辩论中的意义转变

Watch for definitional wizards who develop a stipulative or positional definition, draw a conclusion on the basis of the definition, and then apply the conclusion using the term in its standard sense. Consider this example:  
注意那些制定规定性或定位性定义的定义专家，根据定义得出结论，然后使用该术语的标准意义应用这个结论。考虑以下例子：

Example 13:9

**S: The question is whether the State proved beyond a reasonable doubt that Arlene was not justified in using the force she used.  
问题是国家是否能够以超出合理怀疑的程度证明阿琳没有正当理由使用她所使用的武力。**

**Q: That depends on what you mean by proof beyond α reasonable doubt. The best definition of this phrase is absolutely airtight proof, so that the conclusion could not possibly be mistaken. If the conclusion could possibly be mis taken, then there is room for reasonable doubt. We need high standards like this because we certainly don’t want to convict an innocent person.  
这取决于你对超出合理怀疑的证据的定义。这个短语的最佳定义是绝对无懈可击的证据，以至于结论不可能被错误地理解。如果结论有可能被误解，那么就存在合理怀疑的空间。我们需要这样的高标准，因为我们绝对不希望定罪一个无辜的人。***­sion could not possibly be mistaken.*­

**S:** So?

**Q: So the proof that Arlene was not justified is not so airtight that it could not possibly be mistaken. We can possibly be mistaken about anything, so we can possibly be mistaken about this. Therefore, the State has not proven beyond a reasonable doubt that Arlene was not justified in using the amount of force she did.  
Q: 所以证明阿琳没有理由的证据并不是那么确凿，以至于不可能出错。我们对任何事情都有可能出错，所以我们对这个也有可能出错。因此，国家没有以合理怀疑的标准证明阿琳在使用她所使用的力量时没有理由。**

In applying his final conclusion to the situation (in the last sentence), Q was in effect using the phrase in its standard meaning, because in the question that the court asked the jurors, the court used the phrase in its standard meaning. But the conclusion’s following depends on the term’s being interpreted in accord with the positional definition Q offered and defended.  
在将他的最终结论应用于情况时（在最后一句中），Q实际上是在使用该短语的标准含义，因为在法庭向陪审团提问的问题中，法庭使用了该短语的标准含义。但随后的结论取决于根据Q提供和辩护的位置定义来解释这些术语。­sion’s following depends on the term’s being interpreted in accord with the posi­tional definition Q offered and defended.

Let me elaborate. Q first argued for his positional meaning. According to his positional meaning, the State has *not* proven its case beyond a reasonable doubt. But the court asked the question in the standard meaning of the phrase, so to answer “No” is—in this situation—to make the statement (“It has not been proven beyond a reasonable doubt”) in its standard meaning. If the positional meaning and the stan­dard meaning differ, then Q has committed the fallacy of equivocation. To commit the fallacy of *equivocation* is to exploit a shift in meaning in arguing for a conclusion. (Note the convenience in the immediately preceding sentence of the equivalent­expression form of definition for the word *equivocation.)*

­Something very much like this occurred in my jury room. What is an appropriate response to what Q has done? Stop reading and think about what you might have said if you were in the jury room.  
让我详细解释一下。Q首先提出了他的位置意义。根据他的位置意义，国家没有以合理怀疑的标准证明自己的案件。但是法庭用短语的标准意义提出了问题，所以回答“不”就是在这种情况下以标准意义表达（它没有被证明超出合理怀疑）。如果位置意义和标准意义不同，那么Q就犯了意义模糊的谬误。犯意义模糊的谬误就是在争论结论时利用意义的转变。（请注意，在上一句中，使用了等效表达形式来定义“意义模糊”一词，这是很方便的。）在我的陪审团室里发生了非常类似的事情。对于Q所做的事情，应该作出什么样的回应呢？停下来思考一下，如果你在陪审团室里，你可能会说些什么。

In this case, it was not possible to be flexible and let Q have his way with the phrase proven beyond a reasonable doubt. The phrase is so deeply embedded in our legal system that proof beyond a reasonable doubt is a necessary condition for conviction. When a term is so deeply embedded in our culture that its use is a crucial part of our legal system, flexibility is the wrong stance. We might agree with the definition or we might disagree, but agreement simply to accommodate someone does not make sense. To do that is to settle the issue without thinking about it. One had to argue against Q’s positional definition in that context, if one believed it to be different from the standard meaning.  
在这种情况下，不可能灵活地让Q按照"超出合理怀疑"这个短语的方式行事。这个短语在我们的法律体系中根深蒂固，超出合理怀疑的证明是定罪的必要条件。当一个术语在我们的文化中根深蒂固，它的使用是我们法律体系的重要组成部分时，灵活性是错误的立场。我们可能同意这个定义，也可能不同意，但仅仅为了迁就某人而同意是没有意义的。这样做就是在不经思考地解决问题。在那种情况下，如果我们认为Q的位置定义与标准含义不同，就必须反对它。­viction. When a term is so deeply embedded in our culture that its use is a crucial part ­tion or we might disagree, but agreement simply to accommodate someone does not make sense. To do that is to settle the issue without thinking about it. One had to argue against Q’s positional definition in that context, if one believed it to be differ­ent from the standard meaning.

One thing to have done was to show that elsewhere Q had not done justice to his own concept because by his definition the prosecutor had not even succeeded in proving beyond a reasonable doubt that Arlene performed the act that caused Al’s death. Q himself had agreed earlier that the prosecutor had succeeded in doing this. The basic strategy here would be to secure a counterexample from the things the speaker has done or said (turning a person’s position back on the person).  
"做过的一件事是要表明Q在他自己的概念中并没有做到公正，因为根据他的定义，检察官甚至没有成功地证明阿琳犯下了导致奥尔死亡的行为。Q自己之前同意了检察官已经成功做到了这一点。这里的基本策略将是从演讲者所做或所说的事情中获得一个反例（将一个人的立场反过来用于这个人身上）。”

Another possible move was to show that according to Q’s definition, there should never be any convictions because proof beyond a reasonable doubt would be unobtainable. That would be a totally unacceptable situation, so the phrase could not possibly mean in that courtroom situation what Q claimed it to mean. This sort of move is sometimes called reduction to absurdity (that is, showing an absurd consequence of a position).  
另一个可能的举措是展示根据Q的定义，应该永远不会有任何定罪，因为超出合理怀疑的证据是无法获得的。那将是一个完全不能接受的情况，所以这个短语在法庭上绝对不可能意味着Q声称的那个意思。这种举措有时被称为归谬法（即展示一个立场的荒谬后果）。­quence of a position).

Can you think of anv other possibly appropriate responses to Q?   
你能想到其他可能适当的回答吗？

Impact Equivocation  
影响模棱两可

It is often difficult to establish that the arguer consciously exploited a meaning shift. Therefore, I have invented a name for a fallacy that is like equivocation, because it has the impact of equivocation, even though we are not sure what the arguer is actually doing. This name is impact equivocation. To commit the fallacy of impact equivocation is to use a different meaning for a term than the meaning the audience is likely to understand it to have, xxrith the impact on the audience being the same as if equivocation had been committed.  
往往很难确定辩论者是否有意利用意义转变。因此，我发明了一个类似于模棱两可的谬误的名字，因为它具有模棱两可的影响，尽管我们不确定辩论者实际上在做什么。这个名字叫做影响模棱两可。犯下影响模棱两可的谬误是使用一个术语的不同含义，而听众可能理解它具有的含义与之不同，对听众的影响与犯下模棱两可谬误时的影响相同。*­tion*­ocation had been committed.

­equivocation fallacy was being committed by the juror in the example dealing with Whether or not the juror was consciously equivocating, at least this impactequivocation fallacy was being committed by the juror in the example dealing with proof beyond a reasonable doubt. Regardless of whether he was consciously exploiting a meaning shift, his conclusion (that the case had not been proven beyond a reasonable doubt) was bound to be interpreted by the other jurors, the judge, and all others concerned in accord with the standard meaning of the phrase. Thus, his argument would have had the impact of an equivocal argument.  
无论陪审员是否有意模棱两可，至少在处理超出合理怀疑证明的例子中，该陪审员犯了这种模棱两可谬误。无论他是否有意利用意义转变，他的结论（即案件没有被证明超出合理怀疑）都必定会被其他陪审员、法官和所有其他相关人员按照该短语的标准含义进行解释。因此，他的论点将产生模棱两可的论证效果。­able doubt) was bound to be interpreted by the other jurors, the judge, and all oth­ers concerned in accord with the standard meaning of the phrase. Thus,

This problem holds for the other two examples in this section on definition strategy. In Example 13:7, M (in offering the critical-thinking definition of argument in that situation) was risking (perhaps even inviting) having J interpret M’s conclusion in the sense of argue that J was using. Thus, M’s verbal wizardry risked having the impact of equivocation.  
这个问题适用于本节中关于定义策略的另外两个例子。在例子13:7中，M（在提供批判性思维对于那种情况下的论证定义时）冒着（甚至是邀请）J将Ms的结论解释为J所使用的意义的风险。因此，Ms的口才技巧冒着产生模棱两可效果的风险。­sion in the sense of

­preted as a denial of the charge that M had been selfish (in the standard sense of that term). Thus, again there was the danger of having the impact of equivocation.In Example 13:8, M’s verbal maneuvers invited having the conclusion interpreted as a denial of the charge that M had been selfish (in the standard sense of that term). Thus, again there was the danger of having the impact of equivocation.  
在例子13:8中，Ms的口头操纵引发了将结论解释为否认M曾经以自私的方式行事（按照该术语的标准含义）。因此，再次存在着模棱两可的影响的危险。

The term reliability is an example from the field of psychometrics (testing). As the term is defined by psychometricians, the reliability of a test is, roughly speaking, its consistency in producing the same score for the same individual, regardless of whether the score is a valid indicator of the individual’s accomplishments or prowess in the thing named by the test. For example, a multiple-choice test that measures one’s degree of low-level rote memorization of facts and details in a field, say physics, might be very reliable in the psychometrician’s sense of reliable. But if such a test is called a physics achievement test, then there is danger of impact equivocation, for its reliability might well be interpreted by the non-psychometrician public as indicating that the test can be depended on to give us a good estimate of a person’s understanding of physics. It would probably not be a reliable test of physics achievement in the everyday person’s sense of the term reliable, but could well be a reliable test in the psychometrician’s sense of the term. This sort of problem often arises with technical terms in specialized fields, but can be serious in cases like this, in which the unsuspecting public is often invited to accept a conclusion that is not supported by the data.  
可靠性­standing of physics. It would probably not be a reliable test of physics achievement in the everyday person’s sense of the term ­nical terms in specialized fields, but can be serious in cases like this, in which the unsuspecting public is often invited to accept a conclusion that is not supported by the data.

­quate protection (perhaps because the audience is too inflexible to handle the ambi­guity), then the arguer has a responsibility to avoid the ambiguous use of terms.The extent to which a person has committed the impact equivocation fallacy depends on the audience. That is, it depends on the extent to which the audience is likely to be fooled into accepting the conclusion in one sense of the key term rather than the sense in which the arguer claims to be using. In order to avoid this fallacy, we have a responsibility to try to know the audience and to take steps to wain the audience, if there is danger of their being misled. If a warning will not provide adequate protection (perhaps because the audience is too inflexible to handle the ambiguity), then the arguer has a responsibility to avoid the ambiguous use of terms.   
一个人是否犯了影响模糊论证谬误的程度取决于听众。也就是说，取决于听众在关键术语的某种意义上容易被愚弄而接受结论，而不是演讲者声称的意义。为了避免这种谬误，我们有责任尽力了解听众，并采取措施来警惕听众，如果有误导的危险。如果警告不能提供足够的保护（也许因为听众过于固执无法处理歧义），那么演讲者有责任避免使用含糊不清的术语。

Considering Several Possible Meanings  
考虑几种可能的含义

One basic (though often complex) strategy for dealing with possible equivocation, impact equivocation, and other problems arising from the meaning of terms is that of evaluating the argument several times, each time interpreting the key terms in accord with each of their possible meanings. Then the argument is judged separately for each of its possible interpretations. Roughly the strategy goes as follows: If the meaning is Y, then the judgment is such and such. If the meaning is Z, then the judgment is such and such (and so on, for as many plausible interpretations as exist). Then, if every judgment is that the argument is defective, and if there are no other plausible meanings for the key term (or terms), then the argument is given a final judgment of defective. Simply put, the final judgment would then consist of the following summary statement: “Whatever the interpretation, the argument is defective. Therefore, the argument is defective.” This overall judgment follows from the individual judgments and the assumption that all reasonable interpretations have been included.  
处理可能的模棱两可、影响模棱两可以及其他与术语含义相关的问题的一种基本（尽管通常很复杂）策略是多次评估论证，每次根据各种可能的含义解释关键术语。然后，针对每种可能的解释分别对论证进行评判。大致策略如下：如果含义是Y，则判断是如此。如果含义是Z，则判断是如此（依此类推，针对所有可能的解释）。然后，如果每个判断都是论证有缺陷的，且关键术语（或术语）没有其他合理的含义，那么论证将被最终判定为有缺陷。简而言之，最终判断将包括以下摘要陈述：无论解释如何，论证都有缺陷。因此，论证有缺陷。这个整体判断是基于个别判断和所有合理解释都已包含的假设。­ings for the key term (or terms), then the argument is given a final judgment of defec­tive. Simply put, the final judgment would then consist of the following summary statement: “Whatever the interpretation, the argument is defective. Therefore, the argument is defective.” This overall judgment follows from the individual judgments and the assumption that all reasonable interpretations have been included.

This strategy could be applied to the example dealing with selfishness. Consider the case of M, who was accused of selfishness: On the special interpretation that M gave to the word selfish, it follows that everybody is selfish all the time, but it does not follow that M’s cutting into line was all right because that action was in addition unfair. Therefore, the argument is defective, using M’s special sense of selfish throughout the argument. Furthermore, on the standard interpretation of selfish, it is not true that everybody is selfish all the time, so it does not follow that M’s behavior was all right. In fact, it seems that M’s behavior should be condemned because it was without regard for the well-being of others. Thus, the argument is defective in the other sense of selfish. No matter which sense of the term we use, given that we consistently carry the argument all the way through in each rendition of the argument, the argument is defective.  
这个策略可以应用于处理自私问题的例子。考虑被指控自私的M的情况：根据M对自私这个词的特殊解释，可以得出每个人都一直自私，但这并不意味着M插队是正确的，因为这个行为本身是不公平的。因此，这个论证是有缺陷的，因为在整个论证过程中都使用了M特殊的自私意义。此外，根据自私的标准解释，不是每个人都一直自私，所以M的行为也不是正确的。事实上，M的行为应该受到谴责，因为它没有考虑他人的福祉。因此，这个论证在自私的另一种意义上也是有缺陷的。无论我们使用哪种意义的术语，在每个论证的表述中都要一致，这个论证都是有缺陷的。­ior was all right. In fact, it seems that M’s behavior should be condemned because it was without regard for the well-being of others. Thus, the argument is defective in the other sense of ­ment, the argument is defective.

­tivism. It did not seem possible to report one consistent meaning of the term At the end of Chapter 11, you saw an argument about absolutism and relativism. It did not seem possible to report one consistent meaning of the term absolutism because it was not clear what meaning was in use in that argument. So the strategy I adopted was to identify the most likely and examine the argument from beginning to end for each meaning, making sure that only that one meaning was considered throughout that particular examination of the argument. This strategy requires flexibility on the part of the reasoner and the audience.  
在第11章的结尾，你看到了关于绝对主义和相对主义的争论。似乎无法确定绝对主义这个术语的一致含义，因为在那个争论中并不清楚使用了哪个含义。所以我采取的策略是确定最有可能的含义，并从头到尾审视每个含义下的争论，确保在对该争论的特定审视中只考虑了那一个含义。这个策略要求推理者和观众具备灵活性。*­lutism*­sidered throughout that particular examination of the argument. This strategy requires flexibility on the part of the reasoner and the audience.

A Simpler Strategy  
一个更简单的策略

A simpler (but less thorough) strategy would have been to pick only one meaning for absolutism, defend the choice of that meaning, and then (assuming that meaning) examine the argument. For example, I could have offered the following more simple response:  
一个更简单（但不够全面）的策略是只选择一个意义来解释绝对主义，为选择的意义辩护，然后（基于这个意义）来审视这个论点。例如，我可以提供以下更简单的回应：

Example 13:10

The speaker assumes that we have only two choices, absolutism or relativism. By absolutism, I think the arguer probablv means the view that value principles aιc univeιsal, exceptionless truths. This is what I have found most people to mean who offer arguments like this. If this is what the arguer means, then the arguer s complaint against absolutism is justified. I can think of exceptions to at least most broad value principles. But then we must object to the arguer,s assumption that there are only these two alternatives, absolutism and relativism. There is the additional alternative that value principles can be generally correct. If so, then the conclusion that we should accept relativism does not follow. It has not been proved because it has not been shown to be the only alternative to absolutism.  
演讲者假设我们只有两个选择，绝对主义或相对主义。通过绝对主义，我认为辩论者可能指的是价值原则是普遍的、无例外的真理。这是我发现大多数人提出这样的论点时的意思。如果辩论者的意思是这样的，那么辩论者对绝对主义的抱怨是合理的。我可以想到至少大多数广泛的价值原则的例外。但是我们必须反对辩论者的假设，即只有这两种选择，绝对主义和相对主义。还有另一种选择，即价值原则可以是普遍正确的。如果是这样，那么接受相对主义的结论是不成立的。它还没有被证明，因为还没有被证明是绝对主义的唯一替代方案。

In this simpler strategy, one picks the most likely interpretation and argues against the position, assuming that the position is employing that interpretation. The strategy accomplishes much. If someone wants to push the issue further, it is still possible to become flexible with the meaning of the word absolutism and go back to the more thorough strategy: Consider the argument once for each meaning (or combination of meanings) of the key term (or terms).  
在这种更简单的策略中，人们选择最有可能的解释，并反驳这个立场，假设这个立场正在使用那个解释。这种策略可以达到很多效果。如果有人想进一步推动这个问题，仍然可以对“绝对主义”一词的含义变得灵活，并回到更全面的策略：对关键术语的每个含义（或含义的组合）考虑一次论证。­sible to become flexible with the meaning of the word ­nation of meanings) of the key term (or terms).

­ment would require six (two times three) evaluations of the argument, one for each of the six possible combinations of the meanings of the key terms. For practical rea­sons, this complexin' must sometimes be replaced by the simpler strategy of working initially with the one set of meanings that we think the speaker has probably intended.The strategy of considering several possible meanings could have been even more complicated. Suppose that there are two terms in an argument, one of which could be interpreted in two ways, the other in three ways. Then an exhaustive treatment would require six (two times three) evaluations of the argument, one for each of the six possible combinations of the meanings of the key terms. For practical reasons, this complexin' must sometimes be replaced by the simpler strategy of working initially with the one set of meanings that we think the speaker has probably intended.  
考虑多种可能含义的策略可能会更加复杂。假设一个论点中有两个术语，其中一个可以有两种解释，另一个可以有三种解释。那么，对该论点的详尽处理将需要六次（两次三次）评估，即对关键术语的六种可能组合的每一种含义进行一次评估。出于实际原因，这种复杂性有时必须被更简单的策略所取代，即最初使用我们认为发言者可能打算使用的一组含义进行工作。

Summary  
摘要

­tions, they are very different at their extremes. A pure Although there is no sharp line between arbitrary stipulative and positional definitions, they are very different at their extremes. A pure arbitrary stipulative definition is a suggestion, a request, or a demand that the audience agree to a meaning in order conveniently to conduct the business at hand. We have much freedom in giving arbitrary stipulative definitions, although we are limited by the flexibility of the audience. A standard positional definition, on the other hand, expresses a position or point of view on some issue. In giving positional definitions, we are bound by the limits that the situation sets for the word or phrase in question. Often the word has positive or negative connotations, and the positional definition is an attempt to capture these connotations for things that would then be labeled by the word or phrase.  
尽管任意的规定性定义和位置性定义之间没有明显的界限，但它们在极端情况下是非常不同的。一个纯粹的任意规定性定义是一个建议、一个要求或一个要求，要求听众同意一个含义，以便方便地进行业务。在给出任意规定性定义时，我们在很大程度上有自由，尽管我们受到听众的灵活性的限制。另一方面，一个标准的位置性定义表达了对某个问题的立场或观点。在给出位置性定义时，我们受到情况对所讨论的词语或短语设置的限制。通常，这个词语具有积极或消极的含义，位置性定义试图捕捉这些含义，以便用该词语或短语来标记事物。­trary stipulative definitions, although we are limited by the flexibility of the audience. A standard

Both are quite different from reported definitions, which are factual statements that claim to reflect usage, usually standard usage. The criteria for judging one kind of definitional act are different from those for judging another. You should not per­form one definitional activity and behave as if you have performed a different one. Sometimes a definition is partly one kind and partly another. Then, criteria for each kind apply

For the sake of brevity, I often refer to arbitrary stipulative definitions as stipulative definitions. But to avoid confusion in some situations, the full term, arbitrary stipulative definitions, should be used.  
两者都与报告的定义有很大不同，报告的定义是宣称反映使用情况的事实陈述，通常是标准用法。对于判断一种定义行为的标准与判断另一种行为的标准是不同的。你不应该执行一种定义活动，然后表现得好像你执行了另一种活动。有时，一个定义在某种程度上属于一种类型，又在某种程度上属于另一种类型。然后，每种类型的标准都适用。为了简洁起见，我经常将任意规定性定义称为规定性定义。但为了避免在某些情况下产生混淆，应该使用完整的术语，即任意规定性定义。*­lative definitions.*

­initional activities, it is tempting to confuse them. It is also tempting to change mean­Because all three acts (reporting, stipulating, and expressing a position) are definitional activities, it is tempting to confuse them. It is also tempting to change mean ings and introduce new ones. Often this is all right, but one common error is to act as if positional definitions need little or no defense because stipulative definitions often need little or no defense.  
因为所有三个行为（报告、规定和表达立场）都是定义性活动，所以很容易混淆它们。也很容易改变意义并引入新的意义。通常这样做是可以的，但一个常见的错误是表现得好像位置定义不需要或只需要很少的辩护，因为规定性定义通常不需要或只需要很少的辩护。

­fers from a correct reported definition. This is often done by engaging in a different definitional act than the one that is appropriate (Q, for example offered a positional definition of + It is sometimes dangerous to introduce into a discussion a definition that differs from a correct reported definition. This is often done by engaging in a different definitional act than the one that is appropriate (Q, for example offered a positional definition of proven beyond a reasonable doubt rather than a reported definition; M offered a putative stipulative definition of argument and a positional definition of selfish, rather than reported definitions).  
"有时候在讨论中引入一个与正确的报告定义不同的定义是危险的。这经常是通过进行与适当的定义行为不同的定义行为来实现的（例如，Q提供了一个超出合理怀疑的位置定义，而不是报告定义；M提供了一个假定的规定性定义的论证和一个自私的位置定义，而不是报告定义）。”*­ish,*

­ment is called + Another potential error is to shift meanings of a term in midargument, often by proving a conclusion that incorporates one meaning of a term and then applying the conclusion, using a different meaning. Exploiting a shift in meaning in midargument is called equivocation.  
另一个潜在的错误是在论证过程中改变术语的含义，通常是通过证明一个结论，其中包含了一个术语的某种含义，然后应用这个结论，使用了另一种含义。在论证过程中利用含义的转变被称为歧义。

*+ Impact equivocation is the interpretation of a term in an argument in a special way when there is danger that the audience will take the term in a different way and be misled. The misleading impact is like that of equivocation, but can be unintentional.  
影响模棱两可*­cial way when there is danger that the audience will take the term in a different way and be misled. The misleading impact is like that of equivocation, but can be unintentional.

+ Ways of handling such definitional wizardry include the following:  
处理此类定义上的巫术的方法包括以下：

Making sure that there is a defense of the position expressed in a positional definition. This usually requires at least a defense of the value judgments implicit in the position (using elements of FRISCO). One way to ask for a defense of the position is to say “Why do you define it that way?”

Being flexible (if the situation allows) and reformulating one’s concern in other words.  
确保对位置定义中表达的立场进行辩护。这通常需要至少对立场中隐含的价值判断进行辩护（使用FRISCO的要素）。询问对立场的辩护的一种方式是问为什么你这样定义它？在情况允许的情况下灵活变通，并用其他措辞重新表达自己的关注。

­ence is too inflexible to incorporate the different meaning, or because (if it is a positional definition) there are good reasons not to attach the suggested cri­teria to the term.Rejecting a new definition, perhaps because a true reported definition is called for and there are clear counterexamples to the definition, or because the audience is too inflexible to incorporate the different meaning, or because (if it is a positional definition) there are good reasons not to attach the suggested criteria to the term.  
拒绝新的定义，可能是因为需要一个真实的报告定义，并且对于该定义存在明显的反例，或者因为受众过于固执，无法融入不同的含义，或者（如果是位置定义）有充分的理由不将建议的标准与术语联系起来。

Examining an argument several times, once for each possible meaning (or combination of meanings) of the key term (or terms).  
对于关键术语的每个可能意义（或意义的组合），多次审查一个论点。

Applying a definition to a concern of the definer to check to see whether the definer really wants to live with that definition.  
将一个定义应用于定义者的关注点，以检查定义者是否真的愿意接受该定义。

­quences (reducing to absurdity).Showing that accepting the definition actually has serious unacceptable consequences (reducing to absurdity).  
证明接受这个定义实际上会产生严重的不可接受的后果（归谬）

Showing that a key term is used in one sense in one part of the argument and in another sense in another part of the argument, and that the argument depends on a shift in meaning from one to the other

There are many variations on these basic ideas.  
证明一个关键术语在论证的某一部分以一种意义使用，在论证的另一部分以另一种意义使用，并且论证依赖于从一种意义到另一种意义的转变。这些基本思想有许多变种。

Γhe S and C in FRISCO are especially important when dealing with problems of definition and +equivocation. We must try to be clear, and we must keep the situation in mind, continually asking ourselves to consider the consequences when performing or accepting the verbal maneuver under consideration.   
FRISCO中的S和C在处理定义和歧义问题时尤为重要。我们必须尽力保持清晰，并时刻牢记情况，不断要求自己在执行或接受考虑中的口头操作时考虑后果。­ation in mind, continually asking ourselves to consider the consequences when per­forming or accepting the verbal maneuver under consideration.

+ Check-Up 13B

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**13:11 Positional definitions may not be offered and accepted just as a matter of convenience.  
13:11 位置定义不能仅仅作为方便之事而提供和接受。**

**13:12 Positional definitions, like any position, need defense.  
13:12 位置定义，就像任何位置一样，需要防守。**

**13:13 If a term has a standard usage in a given situation, and if that usage is the one by which people will interpret your use of the term, then it is all right for you to give a positional definition of the term that differs from its standard usage.  
13:13 如果一个术语在特定情况下有一个标准用法，并且如果人们会根据这个用法来解释你对该术语的使用，那么你可以给出一个与其标准用法不同的位置定义。**

**13:14 In the situation described in 13:13, it is all right for you to give a stip- ulative definition of the term that differs from its standard usage.  
13:14 在13:13所描述的情况下，你可以给出一个与标准用法不同的约定性定义。**

**13:15 It is not possible to report a stipulative definition of a term.  
13:15 不可能报告一个规定定义的术语。**

**13:16 It is not possible to report a positional definition of a term.  
13:16 无法报告术语的位置定义。**

**13:17 Although flexibility in accepting others’ definitions is useful, there are times when one should not be flexible in accepting and operating with others’ definitions.  
13:17 虽然接受他人定义的灵活性是有用的，但有时候在接受和运用他人定义时不应该灵活。**

**13:18 We have a right to stipulate any meaning for any term in any situation, and use the term in accord with that meaning, as long as we tell people what we are doing.  
13:18 我们有权在任何情况下为任何术语规定任何含义，并根据该含义使用该术语，只要我们告诉人们我们正在做什么。**­ple what we are doing.

λledium Answer (one page or less)

Comment on each of the following dialogues. Tell whether each participant is doing appropriate things, and defend your judgments.  
对以下对话进行评论。告诉我每个参与者是否在做适当的事情，并为你的判断辩护。

**13:19 Assume that the background issue is λvhether the statue being discussed should remain in its prominent place on campus:  
13:19 假设背景问题是讨论的雕像是否应该保留在校园的显要位置：**­cussed should remain in its prominent place on campus:

**T: Is the new statue Hawks in Repose a fine piece of art? I’ll tell you something. It’s not art at all. It’s just a pile of junk, welded and bolted together. Art may be defined as an attempt to express a thought in an appealing way that is understandable to the everyday common person. Obviously, because we do not understand that statue, it is not art.  
新的雕像《休憩中的鹰》是一件好的艺术品吗？我告诉你，它根本不是艺术。它只是一堆废物，焊接和螺栓在一起。艺术可以被定义为试图以一种吸引人的方式表达思想，使之能够被普通人理解。显然，因为我们不理解那个雕像，所以它不是艺术。**­stand that statue, it is not art.

**P: Just for the sake of discussion, I’ll accept your definition of art. Then I’ll restate my question. Is the new statue good enough to leave out there in the middle of the campus? And why?  
只是为了讨论而言，我会接受你对艺术的定义。然后我会重新陈述我的问题。这座新雕像是否足够好，可以放在校园中央？为什么？**

**13:20 H: I hear that the Jitzy Mitz are coming to town and are going to play their dreadful music at the Roxy.  
13:20 H: 我听说Jitzy Mitz要来镇上，在Roxy演奏他们可怕的音乐。**

**K: They are an offense to the ear. We should do something to stop them from performing.  
K: 他们对耳朵是一种冒犯。我们应该采取措施阻止他们演出。**

**H: Much as I dislike their sounds, and much as I know that there will probably be some trouble at their concert, I don’t think that we should do that. It’s a free country. The people who go know that there might be trouble, and they like that stuff.   
虽然我不喜欢他们的声音，也知道他们的音乐会可能会有些麻烦，但我认为我们不应该这样做。这是一个自由的国家。去的人知道可能会有麻烦，而且他们喜欢那些东西。**

K: Freedom doesn’t mean that people can do anything they want, regardless of the quality of what they do. We have a responsibility to protect society from such trash. True freedom is having the power and opportunity to do what is in accord with the interests of the group. It’s clear that in this city, most people do not like this music, and it is likely to encourage defiance and deviation from our way of life. Permitting it is against the interests of the majority.  
K：自由并不意味着人们可以为所欲为，不论他们所做的事情的质量如何。我们有责任保护社会免受这种垃圾的侵害。真正的自由是拥有能力和机会去做符合群体利益的事情。很明显，在这个城市，大多数人并不喜欢这种音乐，它很可能会鼓励反抗和背离我们的生活方式。允许它存在是违背多数人的利益的。­­ests of the majority.

**13:21 D: Theft may be defined as the act of taking something from someone without that person’s consent. We all know that the Internal Revenue Service takes money from us without our consent. But we are forced to pay, under threat of severe penalty. So, in reality, the Internal Revenue Service consists of a set of bandits stealing what we have toiled so hard to earn.  
13:21 D: 盗窃可以定义为未经某人同意而从某人那里拿走东西的行为。我们都知道国内税务局在未经我们同意的情况下从我们身上收走钱财。但我们被迫支付，以免受到严厉的惩罚。所以，实际上，国内税务局就是一群窃贼，窃取了我们辛辛苦苦赚来的东西。**

G: No, that’s not what *theft* means. There is another important ele­ment: To be a theft the taker must wrongfully take something. The Internal Revenue Service does not take our money wrong­fully—with some exceptions of course. It is to everyone’s advan­tage that the government tax us. How else could we “insure domestic tranquility, provide for the common defense, and pro­mote the general welfare?”

Longer Answer  
更长的答案

For each of the following, reproduce the dialogue, specifying the context, and evaluate each participant’s actions, justifying your evaluations.  
不，那不是偷窃的意思。还有另一个重要因素：作为一个偷窃行为，拿走的东西必须是非法的。国家税务局并没有非法地拿走我们的钱——当然也有一些例外情况。对每个人来说，政府向我们征税是有利的。否则我们怎么能确保国内安宁，提供共同的防御，并促进公共福利呢？更长的回答对于以下每一项，重现对话，指明上下文，并评估每个参与者的行动，为你的评估提供理由。­uate each participant’s actions, justifying your evaluations.

**13:22 A dialogue you have heard or seen in which the positional definition of a term played a key role in producing equivocation or impact equivocation.  
13:22 你听到或看到的对话中，一个术语的位置定义在产生模棱两可或影响模棱两可方面起到了关键作用。**

**13:23 A dialogue or exchange in a newspaper (such as a pair of letters to the editor) or magazine in which a positional definition was misused somehow.  
13:23 报纸或杂志中的对话或交流（例如一对给编辑的信件），其中位置定义被错误使用了。**

Writing That Consciously Takes  
有意识地写作

Account of Definitional Activities  
定义活动账户

In writing a position paper, you often need to make clear just how you are using specific terms. For example, when I write position papers in the area of critical thinking, I need to say what I mean by critical thinking. Otherwise, people wonder. So I start by offering a reported definition of critical thinking: “reasonable and reflective thinking that is focused on deciding what to believe or do.” This is a reported definition because it captures as well as I can the central meaning of this term as used in the English-speaking world. I might be wrong about it, but it is the best I can do, and it does provide a basis for whatever else I want to do in the paper.  
在撰写立场论文时，您经常需要明确说明您如何使用特定术语。例如，当我在批判性思维领域撰写立场论文时，我需要解释我所指的批判性思维是什么。否则，人们会感到困惑。因此，我首先提供了一个关于批判性思维的定义：合理和反思性的思考，其重点是决定要相信或要做什么。这是一个报道的定义，因为它尽可能准确地捕捉了这个术语在英语世界中的核心含义。我可能对此有所误解，但这是我能做到的最好的，它为我在论文中想做的其他事情提供了基础。­cific terms. For example, when I write position papers in the area of critical thinking, ­ing that is focused on deciding what to believe or do.” This is a reported definition because it captures as well as I can the central meaning of this term as used in the English-speaking world. I might be wrong about it, but it is the best I can do, and it does provide a basis for whatever else I want to do in the paper.

­But sometimes a stipulated or positional definition, or some combination, is appropriate. The important things are that you define all terms of which the mean ing might not be clear to your audience, and that you know what you are doing. That is, you should know what sort of act you are performing (reporting, stipulating, or expressing a position, or some combination) so that you know and have available the sort of defense that is needed for that act. For example, I do not expect to defend my definition of critical thinking as convenient, nor do I expect to defend its position on some controversial issue. Rather, I expect to defend it as the best explanation of the varied usage that 1 have found for the term in the English-speaking world.  
但有时候，一个规定的或位置的定义，或者一些组合，是合适的。重要的是，你要定义所有可能不清楚的术语给你的观众，并且你要知道你在做什么。也就是说，你应该知道你正在进行的是什么样的行为（报告、规定或表达一个立场，或者一些组合），以便你知道并且拥有所需的那种行为的辩护。例如，我不指望为我对批判性思维的定义作出辩护，也不指望为它在某些有争议的问题上的立场作出辩护。相反，我期望为它作为我在英语世界中找到的该术语的各种用法的最佳解释作出辩护。

­sial positions, and defend them by saying that they, like Humpty Dumpty, have the right to use terms in any way they please. For example, I have seen someone define Unfortunately, people often offer positional definitions that express controversial positions, and defend them by saying that they, like Humpty Dumpty, have the right to use terms in any way they please. For example, I have seen someone define fetus as a human being from three months after conception to birth. Someone else defined fetus as the organic mass that becomes a human being at normal birth. Each definition expressed a controversial position on the issue “Is a fetus a human being?,” but neither speaker offered a defense or felt one was needed. Each definer felt as if it were his or her right to define a term however he or she chose to define it, as is appropriate with stipulated definitions. But these definitions expressed controversial positions, so the freedom from obligation for a defense does not extend to them.  
不幸的是，人们经常提供表达有争议观点的位置定义，并通过说他们有权利像汉普蒂·韦尔士一样随意使用术语来为其辩护。例如，我曾见过有人将胎儿定义为从受孕后三个月到出生的人类。另一个人将胎儿定义为在正常分娩时成为人类的有机物质。每个定义都表达了对胎儿是否是人类的问题持有有争议的立场，但是两位发言人都没有提供辩护或感到有必要提供辩护。每个定义者都觉得他们有权利以自己选择的方式定义术语，这是与规定定义相适应的。但是这些定义表达了有争议的立场，所以不需要辩护的自由并不适用于它们。

­ing the audience. There is no point in proving something to the converted when time and space are at a premium, as they usually are.When you offer a positional definition, be sure that you do not behave as if it is your right to define terms any way you please, without obligation to provide a defense. You should be able to provide at least some defense, although you are not necessarily obligated to provide it in the paper. That depends on the situation, including the audience. There is no point in proving something to the converted when time and space are at a premium, as they usually are.  
当您提供一个位置定义时，请确保您不要表现得好像您有权利随意定义术语，而不需要提供辩护。您应该能够至少提供一些辩护，尽管您不一定需要在论文中提供它。这取决于情况，包括受众。当时间和空间都很宝贵时，向已经被说服的人证明某事是没有意义的，而这通常是情况。

You need not always provide definitions. If the meaning is clear to the audience, vou are wasting their time with definitions. But often the mistake goes in the other direction, when definitions are needed but not provided. You must decide, based on your appraisal of the situation.  
你不必总是提供定义。如果观众已经清楚意思，你用定义浪费了他们的时间。但是通常错误的方向是相反的，需要定义但没有提供。你必须根据你对情况的评估来决定。

Check-Up 13C

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

13:24 A position paper should always contain definitions of its key terms, if the paper is to be clear.  
13:24 一个立场文件应该始终包含其关键术语的定义，以确保文件的清晰。

13:25 No defense need be available for a reported definition.  
13:25 无需提供对所报告的定义的辩护。

13:26 A defense should be available for a positional definition.  
13:26 一个防御应该为一个位置定义提供。

Longer Answer  
更长的答案

­lems appropriately.13:27 Select and provide a copy of a position paper that you have written in the past year, and see whether you have handled the definitional problems appropriately.  
13:27 选择并提供你在过去一年中写过的一个立场文件的副本，并查看你是否适当地处理了定义问题。

1. If not, revise it, and in a separate paragraph or two, defend your revision.  
   如果不是这样，请修改它，并在一个独立的段落或两个段落中为您的修改进行辩护。
2. If so, defend your handling of the definitional problems.   
   如果是这样，请为你对定义问题的处理进行辩护。

**+ 13:28 Select (and provide, if needed) a classic position paper. Evaluate the handling, or avoidance, of definitions). Justify your evaluation. Here are two possible examples, both of which are available in Richard D. Heffner’s A Documentary History of the United States, as well as many other sources:  
13:28选择（并提供，如果需要的话）一篇经典的立场文件。评估对定义的处理或回避。为您的评估提供理由。这里有两个可能的例子，都可以在理查德·D·赫夫纳的《美国纪实史》以及许多其他来源中找到。**

1. James Madison’s The Federalist #10 (in which Madison defines faction in his defense of the ratification of the United States Constitution).  
   詹姆斯·麦迪逊《联邦党人文集》第10篇（麦迪逊在辩护美国宪法批准过程中对派系进行了定义）。
2. Alexander Hamilton’s letter to George Washington, in which he defends the constitutionality of a national bank and offers the fol­lowing definition of *necessary: “Necessary* often means no more than needful, requisite, incidental, useful, or conducive to.”

**+ 13:29 Do the same for an editorial in a newspaper. Be sure to provide a copy for your instructor to see.  
亚历山大·汉密尔顿致乔治·华盛顿的信中，他为国家银行的合宪性进行辩护，并提供了以下对"必要"的定义：必要通常仅意味着需要的、必需的、附带的、有用的或有助于的。+ 13:29 对于一篇报纸的社论也做同样的事情。请务必提供一份副本供您的导师查看。**

Suggested Answers for Chapter 13  
第13章的建议答案

**Check-Up 13A**

13:1 T 13:2 T 13:3 T 13:4 F 13:5 T

**13:4 Insert definitely not between wand acceptable.  
在魔杖和可接受之间绝对不要插入。**

**13:6 Make sure that your description of the situation makes it clear whether the term has positive or negative connotations in that situation, and makes clear the nature of the attachment.  
确保您对情况的描述清楚地表明该术语在该情况下具有积极或消极的含义，并清楚说明附件的性质。**

**13:7 In effect, you have probably defended a value position here. You might have mentioned prospective consequences of accepting and of not accepting your definition, as well as other important facts. If you drew on general value judgments (and you probably did), you should have made them clear as well. Show your response to a friend before you turn it in.  
实际上，你可能在这里捍卫了一个价值立场。你可能已经提到了接受和不接受你的定义可能带来的潜在后果，以及其他重要事实。如果你引用了一般的价值判断（很可能是这样），你也应该明确表达出来。在提交之前，向朋友展示你的回答。**

**13:8 Same advice as in 13:7.  
与13:7相同的建议。**

**13:9 This is up to you. Deciding about convenience is easier than deciding about a position.  
这取决于你。决定方便比决定位置更容易。**

**13:10 There are many interesting things written on this topic, including John Stuart Mill On Liberty (1859) and R. H. Tawney’s Equality (1929).  
13:10 这个主题上有很多有趣的东西，包括约翰·斯图尔特·密尔的《论自由》（1859年）和R.H.陶尼的《平等》（1929年）**

**Check-Up 13B**

**13:11 T 13:12 T 13:13 F 13:14 F 13:15 F**

13:16 F 13:17 T 13:18 F

**13:13 Insert not before all right, unless you have a defense.  
13:13 在所有权利之前不要插入not，除非你有辩护。**

**13:14 Insert not before all right.  
13:14 在所有正确之前插入不。**

**13:15** Delete *not.*

**13:16** Delete *not.*

**13:18 Add: if the stipulation is convenient and not confusing to the audience.   
13:18 添加：如果规定对观众方便且不会造成困惑。**

**13:19 Γ is offering an undefended positional definition, possibly thinking he has the right to stipulate any meaning he wants for the term art. In this definition, he takes a position that he does not defend. This position is that something must be understandable by the “everyday common person” in order to be art. T thus avoids arguing whether the status is good, but achieves his apparent goal of condemning the statue (without defending this condemnation). He has not defended the value judgment implicit in this condemnation.  
13:19 Γ提供了一个无防守的位置定义，可能认为他有权利规定艺术这个术语的任何含义。在这个定义中，他采取了一个他不为之辩护的立场。这个立场是，为了成为艺术，某物必须能够被日常普通人理解。因此，T避免了争论这个状态是否好，但却实现了他明显的目标，即谴责这座雕像（而不为这种谴责辩护）。他没有为这种谴责中隐含的价值判断辩护。**­tion is that something must be understandable by the “everyday com­mon person” in order to be art. T thus avoids arguing whether the status is good, but achieves his apparent goal of condemning the statue (without defending this condemnation). He has not defended the value judgment implicit in this condemnation.

­son?” How ever, because art generally has positive connotations in situ­ations like dιat, it would often be a mistake for P just to let T have his positional definition of the word unless P agreed with T’s positional definition. Rather, P might well have asked T for a defense of the defi­nition. P might have then said, “Why do you define P’s flexibility is appropriate if the only issue in the situation is whether to leave the statue in the middle of campus. If that is the only issue, then two important questions are: “Is the statue understandable by the common everyday person?” and “Is it important that a statue in the middle of campus be understandable by the common everyday person?” How ever, because art generally has positive connotations in situations like dιat, it would often be a mistake for P just to let T have his positional definition of the word unless P agreed with T’s positional definition. Rather, P might well have asked T for a defense of the definition. P might have then said, “Why do you define art that way?” 13:20 I shall leave the details of this one up to you, and invite you to discuss it with a friend and in a group of people or your class. But be alert to what K is doing with the word interests (as well as the word freedom). It first seems that a group’s interests are whatever is good for the group. But then it seems that a group’s interests are what a majority of the group likes or desires. Does this latter interpretation of interests make K’s position more acceptable in any situations? Also be alert for the value judgments implicit in the situation.  
Ps的灵活性是适当的，如果情况中唯一的问题是是否将雕像留在校园中央。如果这是唯一的问题，那么有两个重要的问题：这个雕像是否能被普通人理解？校园中央的雕像是否需要被普通人理解？然而，由于艺术在像这样的情况中通常具有积极的含义，如果P只是让T按照他的位置定义来解释这个词，那通常会是一个错误。相反，P可能会要求T为这个定义辩护。P可能会问，你为什么这样定义艺术？13:20这个问题的细节我将留给你，邀请你与朋友、一群人或你的班级讨论。但要注意K在利益（以及自由）一词中的用法。起初，似乎一个团体的利益是对团体有益的一切。但后来似乎一个团体的利益是团体中多数人喜欢或渴望的东西。这种对利益的后一种解释是否使K的立场在某些情况下更可接受？还要注意情况中隐含的价值判断。

**13:21** Deliberately omitted.

**13:22 and 13:23 These are up to you. Be sensitive to the elements of FRISCO.  
13:22 和 13:23 这些由你决定。对 FRISCO 的元素要敏感。**

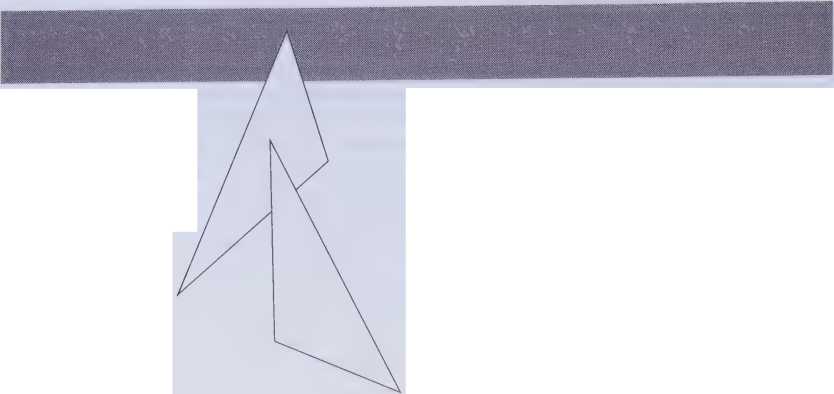
**Check-Up 13C**

13:24 F 13:25 F 13:26 T

**13:24 Change should to need not.  
13:24 改为不需要。**

**13:25 At least some sort of defense should be available for a reported definition.  
13:25 至少应该为一个报告的定义提供某种形式的防御。**

**13:2^-13:29 These are up to you.  
这些由你决定。**

Applying Critical Thinking: FRISCO, Overview, and Critical Thinking in Conversation and Presentation  
应用批判性思维：FRISCO，概述，以及对话和演示中的批判性思维

CHAPTER

14

The chapter organization in this book emphasizes one aspect of critical thinking at a time. But real situations always involve many aspects of critical thinking at the same time—plus other things as well—and you must put them all together. In this, the last chapter, I invite you to join me in putting the pieces together in approaching a decision, considering it, judging it and the support you have for and against it, gathering more evidence, stepping back and reflecting, and applying your insights in oral presentations and discussions. You have, I hope, been continuously trying to apply all aspects of critical thinking in your writing, and in particular to formulating a position, writing a position paper, and evaluating your own and others’ ideas and arguments.  
这本书的章节组织强调了一次只关注一个关键思维方面。但是真实的情况总是同时涉及许多关键思维方面，以及其他方面，你必须将它们整合在一起。在这最后一章中，我邀请你加入我，将这些要素整合起来，以接近一个决策，考虑它，评判它以及你对它的支持和反对意见，收集更多证据，退后一步进行反思，并将你的见解应用于口头演示和讨论中。我希望你一直在努力将关键思维的各个方面应用于写作中，特别是制定立场，写立场论文以及评估自己和他人的观点和论证。­ering more evidence, stepping back and reflecting, and applying your insights in oral

Broad Critical Thinking Elements: FRISCO  
广泛的批判性思维要素：FRISCO

Those of you who have read through this book have now considered in some detail each of the first five elements of FRISCO. In the following brief summary of FRISCO (which was introduced in Chapter 1), it covers both the evaluation and development of positions and arguments.  
那些已经阅读完这本书的人，现在已经详细考虑了FRISCO的前五个要素。在下面对FRISCO的简要总结中（该总结在第一章中介绍），它涵盖了位置和论证的评估和发展。

Those of you who have not read the other chapters of this book w ill find some unfamiliar language here. For the most part it is defined, but some terms describing types of inference, such as deduction, loose derivation, induction, generalization, bestexplanation inference, and value judging might not be clear to vou. There is no simple set of definitions and accompanying strategies. They are developed throughout the book, but be patient. Read the rest of the book. For the time being, the major strategy is to use whichever set of inference standards makes the reasoning look best, if you are only trying to tell whether the conclusion is justified. With a different goal, a different approach could be appropriate.   
那些没有阅读本书其他章节的人会在这里看到一些陌生的语言。大部分都有定义，但是一些描述推理类型的术语，比如演绎、松散推导、归纳、概括、最佳解释推理和价值判断可能对你来说不太清楚。没有简单的定义和相应的策略。它们在整本书中逐渐发展，但请耐心一点。阅读完整本书。目前的主要策略是使用任何一组推理标准，使推理看起来最好，如果你只是想判断结论是否合理。对于不同的目标，可能需要采取不同的方法。*­explanation inference,*­ple set of definitions and accompanying strategies. They are developed throughout the book, but be patient. Read the rest of the book. For the time being, the major strategy is to use whichever set of inference standards makes the reasoning look best,

FRISCO in Making a Decision About What to Believe or Do  
在决定相信或做什么方面，FRISCO

*F: In making a decision about what to believe or what to do, you first must be clear about the question or issue at hand. What are you trying to decide about? What is your question? You should state this question to yourself as clearly and sensitively as possible, because if you do not know what your question is, it is difficult to proceed. Until you have stated your question as clearly as possible, you do not even know how to tell whether you are making progress. Questions can be of all sorts, and can be simply the question of whether a particular hypothesis is justified.  
在做出关于信仰或行动的决定时，你首先必须对问题或议题有清晰的认识。你想要决定什么？你的问题是什么？你应该尽可能清晰和敏感地向自己陈述这个问题，因为如果你不知道自己的问题是什么，那么很难继续进行。在你尽可能清晰地陈述你的问题之前，你甚至不知道自己是否在取得进展。问题可以是各种各样的，可以简单地是关于一个特定假设是否合理的问题。*

Getting clear about the question, conclusion, or hypothesis comes under Focus (the F in FRISCO). The focus can simply be a decision that you or someone else has made or recommended. The question then is, “Is this decision reasonable?” Remember that the decision can be about an action, as well as about what to believe.  
对于问题、结论或假设的明确理解属于焦点（FRISCO中的F）。焦点可以简单地是您或他人所做或推荐的决定。然后问题是，这个决定是否合理？请记住，这个决定可以是关于行动的，也可以是关于信仰的。

*R: You must also familiarize yourself with the situation and the relevant facts, often investigating and gathering more information. A decision should not be made in ignorance, if at all possible. The relevant information provides the Reasons for and against the decision. You must identify and evaluate these reasons.  
R: 你还必须熟悉情况和相关事实，经常进行调查和收集更多信息。如果可能的话，决策不应该在无知中做出。相关信息提供了决策的理由和反对理由。你必须识别和评估这些理由。*

*I: The reasoning step that goes from your information to the decision is the Inference. A good decision requires good information, but the inference step to the decision must be justified as well. You can have fine information, but make a bad decision. Important parts of this inference step are identifying assumptions and searching out and considering alternatives—not only alternative decisions, but also alternative interpretations of the situation and the evidence, and alternative points of view.  
推理是从您的信息到决策的推理步骤。一个好的决策需要良好的信息，但决策的推理步骤也必须得到合理的证明。您可以拥有很好的信息，但做出错误的决策。推理步骤的重要部分包括识别假设，寻找和考虑替代方案——不仅是替代决策，还包括对情况和证据的替代解释以及替代观点。*­sion.

*S: Understanding the Situation helps you be clear about your question (the F), and also helps you to know the meaning of key terms with which you are dealing and to know the often-relevant interests and concerns of various participants. Always keep the situation in mind, even after you have determined your question.  
了解情况有助于你明确你的问题（F），并且帮助你了解你所处理的关键术语的含义，以及了解各参与者的相关利益和关注点。即使在确定了你的问题之后，也要始终牢记情况。*

*C: Clarity' about your own and others’ meanings of the terms you are using is essential. Otherwise, confusion reigns, and you do not know what you are about, nor how to apply your decision.  
对于你自己和他人所使用的术语的'清晰度'是至关重要的。否则，混乱就会主宰，你不知道自己在做什么，也不知道如何应用你的决策。*

*O: At the Overview stage, which you should be doing repeatedly in the decision-making process, you step back and check it all over, reflecting on various alternatives and how well you handled each of the elements of FRISCO. In other words, you go through it all again, making sure that you see the whole picture. The completion of the final overview, however, does not mark the end of critical thinking about a question. Even after you have made the decision, it is important to be open to more information and to other points of view and ideas, and to be willing to change your mind, if warranted.  
O：在概述阶段，你应该在决策过程中反复进行，退后一步，全面检查，反思各种替代方案以及你如何处理FRISCO的每个要素。换句话说，你再次经历整个过程，确保你看到整个画面。然而，最终概述的完成并不意味着对一个问题的批判性思考的结束。即使在你做出决定之后，重要的是要对更多的信息和其他观点和想法持开放态度，并愿意在必要时改变主意。*

The above FRISCO elements might all seem like common sense, and in a way they are. In part, they amount to a person’s being open to new ideas, caring about getting it right and being careful and well informed, trying to be honest and clear about things, and caring about the worth and dignity of others. These are basic critical thinking dispositions (elaborated later in this chapter).  
上述的FRISCO元素可能看起来都是常识，而且在某种程度上确实如此。部分地，它们意味着一个人对新思想持开放态度，关心做对事情并且谨慎而充分了解，努力诚实和清晰地表达事物，并关心他人的价值和尊严。这些是基本的批判性思维倾向（在本章后面详细阐述）。­ical thinking dispositions (elaborated later in this chapter).

Most of these elements of FRISCO receive special emphasis in various parts of the book: Focus receives special emphasis in Chapter 2. Reasons receive special emphasis in Chapters 2-4. Inference is emphasized in Chapters 5-11. Situation is emphasized throughout, as is clarity, although Chapters 12 and 13 emphasize definition and meaning. Overview is emphasized in this chapter.  
FRISCO的这些要素在书的不同部分都受到特别强调：重点在第2章中受到特别强调。原因在第2-4章中受到特别强调。推理在第5-11章中受到强调。情境在整个书中都受到强调，清晰度也是如此，尽管第12章和第13章强调定义和意义。概述在本章中受到强调。­tion and meaning. Overview is emphasized in this chapter.

Inventing, Checking for Quality, Reformulating  
发明，检查质量，改写

­ous evaluative and creative set of interdependent processes. The reason that most of this book is about the quality-checking parts of this activity is that there is much more to be explained about checking for quality. Furthermore, the quality-checking parts continually inform the inventing and reformulating parts and provide the ultimate control of our thought.As you go through this FRISCO-guidcd decision-making process, you are constantly inventing, checking the quality of what you are doing, and reformulating, a continuous evaluative and creative set of interdependent processes. The reason that most of this book is about the quality-checking parts of this activity is that there is much more to be explained about checking for quality. Furthermore, the quality-checking parts continually inform the inventing and reformulating parts and provide the ultimate control of our thought.  
在你进行这个FRISCO-guidcd决策过程时，你不断地进行创造、检查你所做的事情的质量，并且不断地重新制定一套连续的评估和创造性的相互依赖的过程。这本书大部分关于这个活动的质量检查部分，是因为关于质量检查还有很多需要解释的内容。此外，质量检查部分不断地为创造和重新制定部分提供信息，并且对我们的思维提供最终的控制。

Overview  
概述

­rate the So far, you have seen a brief summary of the FRISCO elements. I shall now elaborate the O element, the overview, with emphasis on inference-evaluation procedures and on the interdependence of the elements, as well as openness to revision, even after the decision is made. This strategy is sequential, just to make sure that all aspects are covered, although the original decision-making process skips around a good deal.  
到目前为止，您已经看到了FRISCO元素的简要概述。现在我将详细阐述O元素，即概览，重点介绍推理评估程序以及元素之间的相互依赖性，以及对决策后的修订的开放性。这个策略是顺序的，只是为了确保涵盖所有方面，尽管原始的决策过程在很大程度上是跳跃的。

­making process, from formulating your question—through gathering information— to making your decision, although it can be more detailed at the advanced stages of decision-making. Furthermore, an overview is a necessary final step before provi­sional acceptance of the decision to believe something or to do something. You should do these overviews when you evaluate the arguments of others, as well as when you develop your own. Basically the whole idea is to keep track of what you are doing. Be reflective about it.The overview element should actually be applied at every point in the decisionmaking process, from formulating your question—through gathering information— to making your decision, although it can be more detailed at the advanced stages of decision-making. Furthermore, an overview is a necessary final step before provisional acceptance of the decision to believe something or to do something. You should do these overviews when you evaluate the arguments of others, as well as when you develop your own. Basically the whole idea is to keep track of what you are doing. Be reflective about it.  
概述元素实际上应该在决策过程的每个环节中应用，从制定问题，收集信息，到做出决策，尽管在决策的高级阶段可以更详细。此外，在决定相信或做某事之前，概述是必要的最后一步。当你评估他人的论点时，你应该进行这些概述，同时也要在制定自己的论点时进行。基本上，整个想法是要跟踪你正在做的事情。对此要有反思。

Focus and Reasons  
关注和原因

First of all, try to be clear about the focus (F), the question or conclusion at issue (Chapter 2). In doing so, you will need to take the situation into account. Actually, the selection of the question is sometimes a decision, so it might call for an initial overview by itself. Next, determine what information and reasons (R) are given or available, and get clear about how the reasons join together to provide support for a conclusion. If there is not enough information, get more. Check the information. Is there good reason to believe it? Is it from a credible source (Chapter 3)? Were adequate observation procedures used (Chapter 4)? Answering each question itself calls for some sort of overview (because each question calls for a decision), so repeated overviews are necessary.  
首先，尝试明确关注点（F），问题或结论（第2章）的问题。在这样做时，您需要考虑情况。实际上，问题的选择有时是一个决策，因此可能需要自己进行初步概述。接下来，确定给出或可用的信息和理由（R），并明确这些理由如何相互连接以支持结论。如果信息不足，请获取更多信息。检查信息。有充分的理由相信吗？它来自可信的来源（第3章）吗？是否使用了足够的观察程序（第4章）？回答每个问题本身都需要某种概述（因为每个问题都需要决策），因此需要重复的概述。­quate observation procedures used (Chapter 4)? Answering each question itself calls for some sort of overview (because each question calls for a decision), so repeated overviews are necessary.

Inference  
推理

Look at the inference (7). If the goal is only to tell whether the conclusion or decision is justified, use the following strategy of successful application of different standards. If the goal is otherwise (such as trying to figure out what a particular person is think- i∏g and arguing, and to judge that), then a different strategy might be appropriate.  
看看推理（7）。如果目标只是确定结论或决策是否合理，使用以下成功应用不同标准的策略。如果目标不同（例如试图弄清楚一个特定人在思考和争论什么，并对此进行判断），那么可能需要采用不同的策略。

If the question or conclusion requires a value judgment, then make sure that you consider the consequences of acting on it, and check the factual information, if any, offered in its support. Also check the value principle(s) on which it is based. There usually are one or more value principles in the background. Decide whether, in the given situation, the conclusion at least loosely follows from these principle(s). In doing so, consider whether the argument takes account of all relevant conse­quences and principles. (Value judging is discussed in Chapter 11.)

If the conclusion is an inferred factual conclusion, first check to see whether it is supported by a deductively valid argument with acceptable reasons. (Deductive logic is discussed in Chapters 5 and 6, with applications shown in Chapters 7-9 and 11.) Do the reasons come from credible sources, are they acceptable observation statements, or are they acceptable conclusions that you have previously drawn? Judging the argument might well require you to contribute one or more assumptions that fill, or help fill, the deductive gaps (Chapter 7). When attributing assumptions, do the best you can to help the argument if your ultimate concern is whether to accept the conclusion. It might well be that the best that you can construct is a loosely deductive argument—a loose derivation (Chapters 1 and 11) from acceptable reasons. Then you must make a judgment about whether the argument is good enough, given the situation.  
如果问题或结论需要进行价值判断，请确保考虑采取行动的后果，并检查提供的事实信息（如果有的话）。还要检查其基于的价值原则。通常背后会有一个或多个价值原则。在给定的情况下，决定结论是否至少大致符合这些原则。在这样做时，要考虑论证是否考虑了所有相关的后果和原则。（价值判断在第11章中讨论。）如果结论是推断性的事实结论，请首先检查它是否由具有可接受理由的演绎有效的论证支持。（演绎逻辑在第5章和第6章中讨论，应用在第7-9章和第11章中展示。）这些理由来自可信的来源吗？它们是可接受的观察陈述，还是你之前得出的可接受结论？评判论证可能需要您提供一个或多个假设来填补演绎的空白（第7章）。在归因假设时，尽力帮助论证，如果您的最终关注是是否接受结论。很可能您能构建的最好的是一个松散的演绎论证-一个从可接受理由出发的松散推导（第1章和第11章）。然后，您必须对论证是否足够好做出判断，考虑到情况。

If you cannot construct a satisfactory deductive argument or loose derivation for an inferred factual conclusion, then consider whether a good inductive argument has been, or can be, constructed by adding acceptable assumptions (again assuming that your primary interest is whether to accept the conclusion). Roughly speaking, there are two kinds of inductive arguments, generalization and best-explanation arguments, although some conclusions can be supported by both types—that is, bestexplanations that are also generalizations.  
如果你无法构建一个令人满意的演绎论证或推导出一个推断的事实结论，那么请考虑是否可以通过添加可接受的假设来构建一个良好的归纳论证（再次假设你的主要兴趣是是否接受结论）。粗略地说，有两种类型的归纳论证，即概括和最佳解释论证，尽管有些结论可以由这两种类型支持 - 即既是最佳解释又是概括的解释。­­

If the reasoning generalizes from a series of instances (inductive generalization), are the instances likely to be representative of the population that is the subject of the generalization (Chapter 10)? Consider whether the generalization is consistent with your own experience and whether it is in agreement with the claims of credible sources. Again, pay attention to whether the evidence or reasons are acceptable.  
如果推理从一系列实例中推广（归纳推广），那么这些实例是否可能代表了推广的主题人口（第10章）？请考虑推广是否与您自己的经验一致，以及它是否与可信来源的主张相符。再次注意证据或理由是否可接受。

Suppose instead that the conclusion is a hypothesis that gets its primary support from its ability to explain the facts (best-explanation inference). Are there any facts that appear to be inconsistent with it? Are there any plausible alternative explanations (Chapters 8 and 9)? Have appropriate experiments been done (Chapter 8)? Has a rea­sonable effort been made to uncover alternative explanations? Does the hypothesis fit in with the larger body of knowledge that you accept? Is the hypothesis in agreement with the views of credible sources? (This agreement is not a necessary condition, but it helps to make the hypothesis plausible.)

If the total argument is a combination of smaller arguments, then you must evaluate them one at a time, using the successive evaluation strategy of the previous paragraphs. A total argument is no stronger than its weakest necessary link. However, an argument might be a strong one even if one of the parts is weak, if that part is not a necessary part of the chain or if the other parts do not depend on it for support or help. The other parts might be strong enough by themselves. You must balance and judge.   
假设相反，结论是一个假设，它主要得到支持是因为它能够解释事实（最佳解释推理）。有没有任何与之不一致的事实？有没有任何合理的替代解释（第8章和第9章）？是否进行了适当的实验（第8章）？是否已经做出了合理的努力来揭示替代解释？这个假设是否符合你所接受的更大知识体系？这个假设是否与可信来源的观点一致？（这种一致并非必要条件，但有助于使假设变得可信。）如果总论证是由较小的论证组合而成，那么你必须逐个评估它们，使用前面段落的连续评估策略。一个总论证的强度不会超过其最弱的必要环节。然而，即使其中一部分较弱，如果该部分不是链条的必要部分，或者其他部分不依赖它来支持或帮助，那么论证可能仍然是强的。其他部分本身可能足够强大。你必须权衡和判断。

Situation  
情况

Have you kept in mind the situation (S) as you did these other things? Did you keep in mind the basic concern when you decided about the strength of the inference and the meanings of the terms? Have you successfully looked at things from the point of view of others, and have you attempted to discount any unfairness resulting from your own deeply held assumptions? (These questions represent crucial critical thinking dispositions. Some others are listed below.) Are you well-informed? Check with other people and books (Chapter 3). Do they give you reason to wonder? Investigate (Chapters 4, 8, and 10).  
"你在做这些其他事情的时候，有没有记住情况（S）？在你决定推理的强度和术语的含义时，有没有记住基本关注点？你是否成功地从他人的角度看待事物，并尝试消除因自己深深根深蒂固的假设而导致的不公平？（这些问题代表了关键的批判性思维倾向。下面列出了一些其他问题。）你是否了解情况？与他人和书籍核实（第3章）。他们是否让你产生疑问？调查（第4、8和10章）。”­ing dispositions. Some others are listed below.) Are you well-informed? Check with other people and books (Chapter 3). Do they give you reason to wonder? Investigate (Chapters 4, 8, and 10).

Clarity  
清晰

Make sure that you know the intended meanings of key terms and, if not, try to find out (C). Are the terms clearly defined, if definition is necessary (Chapter 12)? If you cannot ascertain a single intended meaning for each key term, you might need to appraise the argument anew for each meaning, or meanings, of key terms (Chapter 13). If there is even one interpretation that gives you a good argument from the beginning all the way to the application, accept it. The argument is a good one.  
确保您了解关键术语的预期含义，如果不清楚，请尝试找出（C）。这些术语是否有明确定义，如果需要定义的话（第12章）？如果您无法确定每个关键术语的单一预期含义，您可能需要为每个含义或多个含义重新评估论证（第13章）。如果有至少一种解释从一开始到应用都给您一个好的论证，那就接受它。这是一个好的论证。

Finally, you must check your tentative decision. Make sure that it is no stronger than is warranted by the evidence or reasons (evidencing a crucial critical thinking disposition on your part). You should be open to making revisions, especially if new relevant information of ideas develop. Your conclusion should also be clear enough to provide guidance in the situation. Qualify your decision, as appropriate, and always be open to considering new information and points of view (another crucial critical thinking disposition).  
最后，你必须检查你的暂定决定。确保它不要比证据或理由所证明的更加强烈（这表明你具备关键的批判性思维倾向）。你应该对进行修订持开放态度，尤其是如果有新的相关信息或观点出现。你的结论也应该足够清晰，以在情况中提供指导。根据情况对你的决定进行限定，并始终对考虑新的信息和观点持开放态度（另一个关键的批判性思维倾向）。

Critical Thinking Dispositions  
批判性思维倾向

Here is a more complete list of critical thinking dispositions, all of which should be functioning throughout the overview (and of course, all the elements of FRISCO). There is overlap here, even with FRISCO itself, but I hope you will not mind. Read this set slowly, thinking about a particular decision you made, and asking yourself whether you were like this when you made the decision.  
这是更完整的批判性思维倾向列表，所有这些倾向都应该在概述中起作用（当然，还有FRISCO的所有要素）。这里存在重叠，甚至与FRISCO本身也有重叠，但我希望你不介意。慢慢阅读这个列表，思考你做出某个决定时是否符合这些倾向。

Ideal critical thinkers are disposed to do the following:  
理想的批判性思考者倾向于做以下事情：

1. Care that their beliefs are true and that their decisions are justified; that is, care to “get it right” to the extent possible, or at least care to do the best they can. This includes the interrelated dispositions to do the following:  
   关心他们的信仰是否真实，以及他们的决定是否合理；也就是说，尽可能关心做到正确，或者至少关心尽力而为。这包括以下相互关联的倾向：
2. Seek alternatives (hypotheses, explanations, conclusions, plans, sources), and be open to them.  
   寻求替代方案（假设、解释、结论、计划、来源），并对其持开放态度。
3. Endorse a position to the extent that, but only to the extent that, it is justified by the information available.  
   在信息可得之范围内，支持一个立场，但仅限于该立场是合理的。

**C. Be well-informed.  
要了解清楚。**

**D. Seriously consider points of view other than their own.  
认真考虑除自己之外的观点。**

1. Represent a position honestly and clearly (theirs as well as others’). This includes the dispositions to do the following:  
   真实而清晰地表达一个立场（无论是他们自己的还是他人的）。这包括以下倾向：
2. Be clear about the intended meaning of what is said, written, or otherwise communicated, seeking as much precision as the situation requires.  
   对所说、所写或以其他方式传达的意思要明确，根据情况需要追求尽可能准确的表达。­erwise communicated, seeking as much precision
3. Determine, and maintain focus on, the conclusion or question.  
   确定并保持对结论或问题的关注。
4. Seek and offer reasons.  
   寻找并提供理由。
5. Take into account the total situation.  
   考虑整体情况。
6. Be reflectively aware of their own basic beliefs.  
   反思自己的基本信念。
7. ­positions to do the following:Care about the dignity and worth of every person. This includes the dispositions to do the following:  
   关心每个人的尊严和价值。这包括以下行为倾向：
8. Discover and listen to others’ views and reasons.  
   发现并倾听他人的观点和原因。
9. Take into account others’ feelings and level of understanding, avoiding intimidating or confusing others with their critical thinking prowess.  
   考虑他人的感受和理解水平，避免用自己的批判性思维能力来威胁或困惑他人。
10. Be concerned about others’ welfare.[footnoteRef:25]  
    关心他人的福祉。[[24]](#footnote-24)

The elements of FRISCO and these dispositions might seem like a great deal to manage all at once. But with practice, a short review list such as FRISCO in the back of your mind can help you do it without an explicit question about each one.  
FRISCO的要素和这些安排可能一次性看起来很多。但是通过实践，将FRISCO作为一个简短的回顾清单记在脑后，可以帮助您在不对每个要素进行明确问题的情况下完成任务。

Check-Ups  
体检

­ally start with true-false questions that are intended primarily as a review of the main points, and in a way constitute a summary, which is usually also provided. But true- false questions cannot reach deeply enough, so there are more open-ended activities. It is important to do the Check-Ups, at least to the point that you feel confident about the ideas in the relevant, section.Those of you reading this chapter before reading the others should know that there will be periodic Check-Ups that you should use for review and application. They usually start with true-false questions that are intended primarily as a review of the main points, and in a way constitute a summary, which is usually also provided. But true- false questions cannot reach deeply enough, so there are more open-ended activities. It is important to do the Check-Ups, at least to the point that you feel confident about the ideas in the relevant, section.  
在阅读其他章节之前阅读本章的读者应该知道，将会有定期的检查，你应该用来复习和应用。它们通常以判断题开始，主要是为了复习主要观点，并且在某种程度上构成了一个总结，通常也会提供。但是判断题不能深入到足够的程度，所以还有更多开放性的活动。至少在你对相关部分的观点感到自信的程度上，做检查是很重要的。

Check-Up 14A

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**14:1 If an argument is not deductively valid, then it cannot be a good argument.  
14:1 如果一个论证不是演绎有效的，那么它就不能是一个好的论证。**

­ment cannot provide adequate grounds for believing the conclusion.14:2 If an argument includes a reason that is clearly false, then the argument cannot provide adequate grounds for believing the conclusion.  
14:2 如果一个论点包含一个明显错误的理由，那么这个论点不能提供足够的理由来支持结论。

**14:3 If an argument is deductively valid, then if you accept the reasons, you must accept the conclusion  
14:3 如果一个论证是演绎有效的，那么如果你接受了理由，你必须接受结论。**

**14:4 Once the conclusion or question is identified, the situation is no longer of interest in decision-making.  
14:4 一旦确定了结论或问题，情况对决策就不再感兴趣。**

**14:5** If a key term is ambiguous, then showing that the argument is a good argument—in at least one of the senses of the key term—is enough to show that the argument is a good one.'

**14:6 If the conclusion is factual, then if an argument is not deductively valid, there is still the possibility that it is inductively valid.  
14:5 如果一个关键术语是模棱两可的，那么只要能够展示这个论证在关键术语的某个意义上是好的，就足以表明这个论证是好的。'14:6 如果结论是事实性的，那么即使一个论证不是演绎有效的，仍然有可能是归纳有效的。**

**14:7 There are two kinds of inductive arguments or relationships: generalization from particulars and inference to the best explanation.  
14:7 有两种归纳论证或关系：从个别事实推广和推断出最佳解释。**­ization from particulars and

**14:8 Both consequences and principles are relevant to making value judgments.  
14:8 后果和原则都与做出价值判断相关。**

**14:9 The overview process is appropriate only at the end of the decisionmaking process.  
14:9 概述过程仅适用于决策过程的最后阶段。**­

**14:10 The elements of FRISCO are independent of each other when applied to a decision.  
14:10 FRISCO的要素在应用于决策时是相互独立的。**

**14:11 Quality checks on the decision-making process should be made throughout.  
14:11 决策过程中应进行质量检查。**

FRISCO Argument Appraisal

**14:12 Apply FRISCO to the following argument. Do a more thorough job than you did in Item 1:23. You are now much better informed about the reasons and assumptions of this argument than you were at the beginning of the book. Suppose you have overheard the argument offered to someone about to take the same course. Imagine and specify further details of the situation.  
14:12 将FRISCO应用于以下论点。比你在项目1:23中做得更彻底：你现在对这个论点的原因和假设比书的开头时更了解。假设你无意中听到有人对即将上同一门课的人提出的论点。想象并具体说明情况的进一步细节。**­

Argument: You should not bother to do your homework in this course in critical thinking because critical thinking is difficult to learn.  
论点：你不应该在这门批判性思维课程中费心做作业，因为批判性思维很难学习。

**14:13 Apply FRISCO to one of the following arguments (a or b), simpler versions of which appeared earlier as Items 2:51 and 2:52. Imagine that you are thinking of advancing as your own the argument you have selected, and that the first proposition (italicized) is in part based on your own experience, and in part on any other evidence that you might have on the subject. (The italics here do not mean that the italicized proposition is the conclusion.) Imagine and specify further details of the situation as you envision it, including the audience and the probable medium of presentation. Decide whether the argument justifies the conclusion.  
14:13 将FRISCO应用于以下论点之一（a或b），这些论点的简化版本早在Items 2:51和2:52中就出现过。想象一下，你正在考虑将你选择的论点作为自己的观点，并且第一个命题（斜体）部分基于你自己的经验，部分基于你可能对该主题的任何其他证据。（这里的斜体并不意味着斜体命题是结论。）设想并具体说明你设想的情况的进一步细节，包括受众和可能的呈现媒介。决定论点是否证明了结论。**­cized proposition is the conclusion.) Imagine and specify further details of the situation as you envision it, including the audience and

1. *Men generally have difficulty being sensitive to others. If it is desirable for our society to consist of fully developed human beings, then those who are sensitive should make a special effort to help those who are not. Generally, this means that women should make a special effort to help men to be more sensitive, just as the rich should share their wealth with the less fortunate—through a system of income taxes. I say this even though some might feel that it places an unfair burden on women.  
   男性通常很难对他人敏感。如果我们的社会希望由完全发展的人组成，那么那些敏感的人应该特别努力帮助那些不敏感的人。通常，这意味着女性应该特别努力帮助男性变得更加敏感，就像富人应该通过收入税制与不幸的人分享他们的财富一样。尽管有些人可能认为这对女性不公平，但我仍然这样说。*­able for our society to consist of fully developed human beings, then those who are sensitive should make a special effort to help
2. *Women generally do not have confidence in themselves, or they find it difficult to maintain confidence. Therefore, if we are to achieve true equality, hiring preference should be given to women in cases where men outnumber women, just as a painting should be balanced. To some people this might at first appear to be unfair to men, but I think that on reflection they will change their minds.  
   女性通常对自己缺乏信心，或者很难保持信心。因此，如果我们要实现真正的平等，在男性人数超过女性的情况下，应该优先雇佣女性，就像一幅画应该平衡一样。对于一些人来说，这可能一开始对男性不公平，但我认为经过思考，他们会改变想法。*

**+ 14:14 Apply FRISCO to the following argument. Imagine and specify further details of the situation as you envision it, including the audience, facts about the presenter (here called “Chris Individ”), and the medium of presentation.  
14:14应用FRISCO到以下论点。根据您的设想，想象并具体说明情境的进一步细节，包括受众、演讲者（此处称为Chris Individ）的相关事实以及演示的媒介。**­ther details of the situation as you envision it, including the audience, facts about the presenter (here called “Chris Individ”), and the medium of presentation.

­ing wrong with being human. How could it be wrong to do what all people are doing every minute of their waking lives, and to do what all people unavoidably do?Chris Individ argues as follows: “There is absolutely nothing wrong with even the most extreme forms of selfish individualism. All people can be expected to be selfish, that is, to do what is best for themselves, including wasting food and driving expensive sports cars when others are starving and without sanitation. This is because people always do what they really want to do. Otherwise, they would not do it. Because being selfish is doing what you want to do, everybody is selfish all the time. So there is nothing wrong with being selfish, just as there is nothing wrong with being human. How could it be wrong to do what all people are doing every minute of their waking lives, and to do what all people unavoidably do?  
Chris Individ提出如下论点：即使是最极端的自私个人主义形式也没有任何问题。所有人都可以期望自私，也就是说，为了自己的最大利益而行动，包括在其他人挨饿和没有卫生设施的情况下浪费食物和开豪华跑车。这是因为人们总是做他们真正想做的事情。否则，他们就不会去做。因为自私就是做你想做的事情，所以每个人都一直都是自私的。所以自私没有错，就像人类没有错一样。怎么可能做每个人在清醒的时候都在做的事情，以及每个人都不可避免地做的事情是错的呢？

Thinking Critically When  
批判性思考

Discussing Things with Others  
与他人讨论事情

­ical thinking strategies, principles, and insights to a variety of examples that I pro­vided and to some that you have located yourself. But in all cases, you had time to reflect and revise before “going public” with your proposals and judgments.Up to now, we have been considering the practice of critical thinking in situations in which you have as much time to think as you want. You have applied numerous critical thinking strategies, principles, and insights to a variety of examples that I provided and to some that you have located yourself. But in all cases, you had time to reflect and revise before “going public” with your proposals and judgments.  
到目前为止，我们一直在考虑在你有尽可能多的时间来思考的情况下进行批判性思维的实践。你已经运用了许多批判性思维的策略、原则和见解来分析我提供的各种例子，以及你自己找到的一些例子。但在所有情况下，在公开提出你的建议和判断之前，你都有时间进行反思和修订。

­ury of time to reflect and revise before you respond in public. You often think and work things out as you talk. When other people say things, there ordinarily is no chance to have these things recorded and played before you need to respond. So dis­cussion provides a special critical thinking challenge. I shall begin with some general advice, and then give some specific advice, including the suggestion of a wide array of specific strategies, questions, challenges, and responses.However, in discussion with other people, you generally do not have the luxury of time to reflect and revise before you respond in public. You often think and work things out as you talk. When other people say things, there ordinarily is no chance to have these things recorded and played before you need to respond. So discussion provides a special critical thinking challenge. I shall begin with some general advice, and then give some specific advice, including the suggestion of a wide array of specific strategies, questions, challenges, and responses.   
然而，在与他人讨论时，你通常没有足够的时间在公开回应之前进行反思和修订。你常常在说话的过程中思考和解决问题。当别人说话时，通常没有机会将这些内容记录下来并播放，以便你需要回应。因此，讨论提供了一种特殊的批判性思维挑战。我将首先给出一些一般性建议，然后提供一些具体建议，包括广泛的具体策略、问题、挑战和回应的建议。

General Advice  
一般建议

The first piece of general advice is that it takes practice—and more practice—to think critically in discussion. Find nonthreatening situations and try out my suggestions, as well as your own ideas. Think about what happened, and try again in other situations. Then practice some more.  
第一条普遍建议是，在讨论中进行批判性思考需要实践和更多的实践。找到非威胁性的情境，尝试我的建议以及你自己的想法。思考发生了什么，并在其他情境中再次尝试。然后再多练习一些。

A second piece of general advice is that you need to keep track of many things at once. You cannot just focus on one thing and ignore what else is going on. You will need to do the following:  
第二个普遍的建议是你需要同时注意许多事情。你不能只专注于一件事情而忽视其他正在发生的事情。你需要做以下事情：

Keep the situation and the focus in the back of your mind.  
将情况和焦点牢记在心。

Make sure that the focus is agreed on, in case it is not explicitly stated.  
确保焦点达成一致，以防未明确说明。

Make sure that the focus is not changed in mid-discussion, unless there is good reason for changing it.  
确保在讨论过程中不要改变焦点，除非有充分的理由需要改变。

Make sure that the reasons and evidence are out in the open.  
确保原因和证据是公开的。

Judge the reasons and evidence.  
判断原因和证据。

Listen to what the speaker (including yourself) is saying.  
听说话者（包括你自己）说的话。

Note the reactions of other people.  
注意其他人的反应。

Make sure that what is being said is clear enough for the situation.  
确保所说的内容对于情况来说足够清晰。

See how the given reason(s) bears on the general focus in the situation (that is, check the reasoning that is going on).  
看看给定的原因对情况的总体关注点有何影响（即，检查正在进行的推理）。

I x>ok for assumptions.

Be thinking about possible alternative conclusions or explanations that are consistent with the acceptable reasons and evidence.  
考虑与可接受的原因和证据一致的可能的替代结论或解释。

See how it all applies to concrete examples, if the discussion is abstract.  
看看它如何适用于具体的例子，如果讨论是抽象的。

­zation, jury deliberations, small group discussions around a table, talks you give to large groups and to small groups, as well as private discussions with someone to whom you are close. Do not expect to be very good at it at first. But with self­conscious practice, your competence will develop.These are some specific things to do, but the general point here is that you must concurrently do them all, to the extent that you are able. Quite a juggling act! But you need to do it—in committee meetings, open hearings, meetings of your organization, jury deliberations, small group discussions around a table, talks you give to large groups and to small groups, as well as private discussions with someone to whom you are close. Do not expect to be very good at it at first. But with selfconscious practice, your competence will develop.  
这些是一些具体的事情要做，但总的观点是你必须同时做到它们，尽你所能。这是一个相当繁忙的任务！但你需要做到——在委员会会议上，在公开听证会上，在你的组织会议上，在陪审团讨论中，在围坐一桌的小组讨论中，在向大群体和小群体发表的演讲中，以及与你亲近的人进行的私人讨论中。刚开始时不要期望自己做得很好。但通过自我意识的练习，你的能力会逐渐发展。

A third general piece of advice calls for open-mindedness. That is, trv to look at things from others’ points of view, try to be aware of your own deep assumptions, and be open to changing your views. Adopt the other critical thinking dispositions as well.  
第三个一般性建议是保持开放的心态。也就是说，尝试从他人的角度看问题，意识到自己的深层假设，并愿意改变自己的观点。同时，也要采用其他批判性思维的态度。

­pect that you would like something more specific. You shall have it, but remember that any specific suggestion is valuable only to the extent that it fits into the second and third pieces of general advice.I hope that you agree with these three general pieces of advice, but I also suspect that you would like something more specific. You shall have it, but remember that any specific suggestion is valuable only to the extent that it fits into the second and third pieces of general advice.  
我希望你同意这三条一般性的建议，但我也怀疑你想要更具体的东西。你会得到它，但请记住，任何具体的建议只有在符合第二和第三条一般建议的情况下才有价值。

­poses of presentation of my suggestions, but in a real discussion, they usually flowThe rest of the chapter is organized around four discussion activities: seeking clarification, challenging, responding, and presenting. They are distinguished for purposes of presentation of my suggestions, but in a real discussion, they usually flow from one to another and back again. You will find that generally there are threatening and nonthreatening ways to pursue your inquiry, but whether a particular question or challenge is threatening depends not only on its words, but on the tone of voice, on the situation, and on the nature of the person addressed. In almost all cases, I recommend the least threatening way that will get the job done.  
本章的其余部分围绕四个讨论活动展开：寻求澄清、质疑、回应和呈现。它们在我的建议呈现上有所区分，但在真实的讨论中，它们通常会相互衔接。你会发现，一般来说，追问问题或提出挑战有威胁和无威胁的方式，但一个问题或挑战是否威胁取决于其措辞、语气、情境和被提问人的性格。在几乎所有情况下，我建议采用最不具威胁性的方式来完成任务。­ing ­tion or challenge is threatening depends not only on its words, but

Seeking Clarification  
寻求澄清

It is useful to distinguish between seeking clarification of a position and challenging it. But the distinction is sometimes elusive because some clarification efforts are in fact a challenge to a position, some are perceived as a challenge even if not so intended, some challenges result in clarification, and some apparent challenges are actually intended to achieve clarification. However, let us start with questions explicitly seeking clarification. The reason for starting here and for emphasizing clarification is simple: If we are not clear about what is being said, we cannot respond to it reasonably.  
区分寻求阐明立场和质疑立场是有用的。但是这种区分有时很难，因为有些阐明努力实际上是对立场的挑战，有些即使没有这样的意图也被视为挑战，有些挑战会导致阐明，有些表面上的挑战实际上是为了达到阐明的目的。然而，让我们从明确寻求阐明的问题开始。之所以从这里开始并强调阐明，是因为简单：如果我们不清楚对方在说什么，我们就无法合理地回应。­itly seeking clarification. The reason for starting here and for emphasizing clarifica­tion is simple: If we are not clear about what is being said, we cannot respond to it reasonably.

­plify’ shortly) are general clarification questions, those asking for the main Six basic types of questions that we use to clarify a position (which I shall exemplify’ shortly) are general clarification questions, those asking for the main point, those asking for the reasons, those asking for the connection between the reasons and the conclusion, those asking for the meaning of certain words, and those asking for the import or significance. The clarification questions deal with more than the Cfor clarity in FRISCO (which was concerned only with word meaning) because they attend to identifying the focus and reasons, determining the basis for the inference, and determining the situational significance.  
我们用来澄清立场的六种基本问题类型（我将很快举例说明）是一般澄清问题，询问主要观点的问题，询问原因的问题，询问原因和结论之间关系的问题，询问某些词语的含义的问题，以及询问重要性或意义的问题。这些澄清问题处理的范围不仅仅是FRISCO中的C（仅关注词语含义的问题），因为它们还关注于确定焦点和原因，确定推理的基础，并确定情境的重要性。*­ity*

I shall list some illustrative questions, generally arranged in order of decreasing gentleness within each category. One of my purposes in listing these questions is to encourage you to feel comfortable in using them. Another purpose is to give a range that you can use in the coming practice exercises and elsewhere. You should practice using, receiving, and responding to all of them. Try to develop a facility for thinking of them quickly in appropriate circumstances. A third purpose is to encourage you to use the less-threatening ones rather than the more-threatening ones. The less- threatening ones are just as effective logically, and make it easier for your associates to feel comfortable in opening up and revising their views.  
我将列举一些说明性问题，一般按照每个类别内的温和程度递减的顺序排列。列出这些问题的一个目的是鼓励您在使用它们时感到舒适。另一个目的是为您提供一系列可以在即将进行的练习和其他地方使用的问题。您应该练习使用、接受和回答所有这些问题。尽量在适当的情况下迅速想到它们。第三个目的是鼓励您使用较不具威胁性的问题，而不是较具威胁性的问题。从逻辑上讲，较不具威胁性的问题同样有效，并且使您的同事更容易感到舒适，从而敞开心扉并修正他们的观点。

As you read these questions of clarification, read slowly enough to enable you to imagine yourself asking these questions in some discussion you were in during the previous week. Then think about how each question might have worked in that situation. Then practice using them!  
阅读这些澄清问题时，请读得足够慢，以便让自己能够想象在上周的某次讨论中，你自己提出这些问题的情景。然后思考每个问题在那种情况下可能起到的作用。然后练习使用它们！­uation. Then

All of these questions can be asked more informally. I leave it to you to add the slang and short cuts. I present them this way because with just bare print and no body language or facial expressions, they are more clear in this form than in their more informal versions. But many colorful modifications can be made!  
所有这些问题都可以更不正式地提问。我让你来添加俚语和简略方式。我以这种方式呈现它们，是因为只有纯文字而没有肢体语言或面部表情，它们在这种形式下更清晰，比它们更不正式的版本更清晰。但是可以进行许多丰富多彩的修改！

General Clarification Questions  
一般澄清问题

1. Would you say a little more about that?  
   你能再多说一点吗？
2. Why did you say that?  
   你为什么这么说？
3. What do you mean?   
   你是什么意思？

Main Point Questions  
主要问题

1. Let me see if I have it right. Is this your main point? [State what you think is the main point.]  
   让我看看我是否理解正确。这是你的主要观点吗？[陈述你认为的主要观点。]
2. I take it that your main point is this: [state what you think is the main point.]  
   我理解你的主要观点是：[陈述你认为的主要观点。]
3. Γm afraid I don’t quite see what you’re driving at. Could you say a little more about it?  
   很抱歉，我不太明白你的意思。你能再多说一点吗？
4. What is your main point?  
   你的主要观点是什么？
5. Just what exactly is your thesis?  
   你的论文到底是什么？
6. What’s this all about?  
   这是关于什么的？

Reason-Seeking Questions  
寻求原因的问题

1. Could you say a little more about your reasons for saying that?  
   你能再多说一点关于你说这话的原因吗？
2. Perhaps you could elaborate on why you believe that.  
   也许你可以详细说明你为什么这样认为。
3. Why did you say that?  
   你为什么这么说？
4. Why do you believe that?  
   你为什么相信那个？
5. Do you have reasons for that conclusion?  
   你对这个结论有理由吗？

Questions Seeking the Connection Between the Reasons and the Conclusion (Relevance).  
寻求原因与结论之间关联的问题（相关性）

1. I want to understand you. Could you elaborate on the connection between the reason and the conclusion?  
   我想理解你。你能详细说明原因和结论之间的关联吗？
2. Are you assuming that. . .? [Specify a likely assumption.]  
   你是在假设. . .？[指定一个可能的假设。]
3. You are assuming that. . ., are you not? [Specify a likely assumption.]  
   你是这样假设的，是吗？[指出一个可能的假设。]
4. Γm not sure I see the bearing of this point on your conclusion.  
   我不确定我看到这一点对你的结论的影响。
5. Would more evidence help? How would you get it?  
   需要更多证据吗？你会如何获取它？
6. How does that support the conclusion?  
   那如何支持结论？
7. How is that relevant?  
   那与此有何关联？
8. What does that statement [a statement made by the speaker] have to do with your conclusion?  
   那个陈述与你的结论有什么关系？

Questions Seeking Clarification of Word Meaning  
寻求词义澄清的问题

1. Γm not sure how you are using this word.  
   我不确定你如何使用这个词。
2. Could you give an example of. . .?  
   你能给一个例子吗？
3. Could you give a negative example of. . .? [This question is unfortunately rarely used, though it can be very useful and is sometimes devastating to a position that really does not say anything. A *negative example* is a case that is instructively not an example.]
4. Would this be an example . .? [give an instructive possible case.]
5. Perhaps we are talking past each other. Are we using this word the same way? [This question is often asked much later in a discussion than it should be. Consider it when you see people looking at the same facts, yet still disagreeing with each other. Often the disagreement in such cases is merely verbal, though not always.]
6. What do you mean by. . .?  
   你能给一个负面的例子吗？[这个问题很少被使用，尽管它非常有用，有时对于一个真正没有说什么的立场来说是毁灭性的。负面的例子是一个有教育意义的非例子。]这可能是一个例子吗？[给一个有教育意义的可能情况。]也许我们在互相误解。我们使用这个词的方式一样吗？[这个问题通常在讨论的晚期被问到，比它应该被问到的时间晚。当你看到人们看着同样的事实，却仍然互相不同意时，请考虑这个问题。在这种情况下，通常的分歧仅仅是言辞上的，尽管并不总是如此。]你指的是什么意思？
7. By . . ., do you mean. . .?  
   你说的是指……吗？
8. Do you know what. . . means?  
   你知道...是什么意思吗？

Questions Seeking the Import or Significance of the Conclusion  
寻求结论的重要性或意义的问题

1. Could you tell me roughly how your conclusion (or thesis, or view) might apply in this situation: [describe a situation of interest to which there is possible application]?  
   你能大致告诉我你的结论（或论文，或观点）在这种情况下可能如何应用吗？[描述一个可能适用的感兴趣的情况]?
2. Could you comment on the significance of your view for this situation?  
   你能对你的观点在这种情况下的重要性发表评论吗？
3. Suppose you are right in what you say; what should I [or someone else] do differently?  
   假设你说的是对的；我（或其他人）应该怎么做才能有所不同？
4. What difference does it make?  
   有什么区别？
5. Does it make any difference?  
   有任何区别吗？

Summary and Comment So Far  
总结和评论到目前为止

In discussion, you usually have ready access to the other person, and can use this access to clarity what the person is saying. This goes beyond word meanings, the concern under the C in FRISCO.  
在讨论中，你通常可以方便地与对方交流，并可以利用这种交流来澄清对方的意思。这超越了单词的意义，在FRISCO中的C下面的关注点。­

Questions of clarification are not limited to the beginning of a discussion. Often, things that need clarification are not apparent until well into a discussion. So be ready to use these and similar questions at any time. But some of them are almost ahvays appropriate at the beginning of a discussion.  
澄清问题不仅限于讨论的开始阶段。通常，需要澄清的事情直到讨论进行到一定程度才会显现出来。因此，请随时准备使用这些类似的问题。但其中一些问题几乎总是适用于讨论的开始阶段。

Specific questions of clarification can try to get the focus or main point out in the open, can get the reasons out in the open, can try to ascertain the relevance of the reasons, can seek clarification of ambiguous or unfamiliar terms, and can seek the practical significance of the position, among other things.  
澄清的具体问题可以尝试将焦点或主要观点公开，可以将原因公开，可以试图确定原因的相关性，可以澄清模糊或不熟悉的术语，并可以寻求立场的实际意义，等等。

I have suggested a range of questions for each of these activities. The questions range from less threatening to more threatening. I urge you to use the less- threatening ones whenever you can. Any question can be somewhat threatening, especially if the person addressed does not immediately see a good answer.  
我为每个活动提出了一系列问题。这些问题的范围从不那么具威胁性到更具威胁性。我敦促您在可能的情况下使用那些不那么具威胁性的问题。任何问题都可能有一定的威胁性，特别是如果被问到的人不能立即找到一个好的答案。

The three general clarification questions are ones that you should always be ready to ask. Of the three, the second and third questions, “Why did you say that?” and “What do you mean?,” are sometimes more threatening, and are more specific than the first, but usually are good general questions. The first question, “Would you say more about that?,” although vague, is very useful. It often provokes the speaker to see what needs elaboration. Then the speaker can provide the elaboration, if he or she knows it and wants to provide it. Usually people do want to make clear what they are saying. The question “Would you say more about that?” is also useful for the questioner who feels confused and is not sure exactly what is lacking. The question helps to get the dialogue going.  
三个常见的澄清问题是你应该随时准备提出的。在这三个问题中，第二个和第三个问题，你为什么这么说？你的意思是什么？有时候更具威胁性，也更具体，但通常都是很好的常规问题。第一个问题，你能再多说一些吗？虽然含糊不清，但非常有用。它经常引发说话者思考需要详细说明的内容。然后，如果他或她知道并愿意提供，说话者可以提供详细说明。通常人们确实希望表达清楚他们的意思。问题“你能再多说一些吗？”对于感到困惑并不确定缺少什么的提问者也很有用。这个问题有助于开启对话。

Before you go further, you need to practice using all of these questions. It would be best if you could practice with someone else. Find a partner and do one or more ofCheck-Up Items 14:15-14:18 together. Schedule a significant block of time in order to make this activity worthwhile.   
在继续之前，你需要练习使用所有这些问题。最好能找个人一起练习。找一个伙伴，一起完成14:15-14:18的一个或多个检查项目。安排足够的时间来使这个活动有意义。

Check-Up 14B

**14:15-14:18 Find a partner and address one of the arguments in Items 14:12 through 14:14 in Check-Up 14A. For each argument, imagine further details in the situation as necessary. Then one of you play the role of the arguer while the other asks the arguer each of the suggested questions in the first three groups (general clarification, seeking focus, and reasons). The one playing the arguer role should then try to answer the questions. Then switch roles and the former arguer should ask the new arguer each of the questions in each of the last three groups (relevance of reasons, seeking word meaning, and significance). The new arguer should respond to each of the questions. Do this orally. After each question and response, discuss with your partner the quality of the question and response and how each of you felt. Go slowly and plan to spend several hours doing this. Then write out an answer to each of the following questions:  
14:15-14:18 找一个伙伴，针对Check-Up 14A中14:12至14:14的论点之一进行讨论。对于每个论点，根据需要想象更多情境细节。然后，其中一人扮演辩论者的角色，另一人向辩论者提出前三组建议的问题（一般澄清、寻求焦点和原因）。扮演辩论者角色的人应尽力回答这些问题。然后交换角色，之前的辩论者应向新的辩论者提出后三组问题（原因的相关性、寻求词义和重要性）。新的辩论者应回答每个问题。这个过程需要口头进行。在每个问题和回答之后，与伙伴讨论问题和回答的质量以及你们的感受。请慢慢进行，并计划花费几个小时进行。然后书面回答以下每个问题：**­tions in the first three groups (general clarification, ­vance

1. What additional details in the situation did you imagine?  
   你在想象中还有哪些情况下的额外细节？
2. Which questions were most useful in this situation? Why? c. Which questions were least useful in the situation? Why?  
   在这种情况下，哪些问题最有用？为什么？c. 在这种情况下，哪些问题最无用？为什么？

**14:19 Find a partner. Do the same thing as in 14:15-14:18 for an argument that you find in your daily life such as from a newspaper editorial page, a magazine article, a talk show, a debate, a discussion with a friend, or a meeting you attended. The most instructive argument here would be one about an issue on which you and your partner disagree. In your written report, present the total argument and describe the situation in full Also answer questions b and c that appeared under 14:15-14:18.  
14:19 寻找一个伙伴。对于你在日常生活中遇到的争论，例如来自报纸社论版、杂志文章、脱口秀、辩论、与朋友的讨论或你参加的会议，做与14:15-14:18相同的事情。这里最有教育意义的争论应该是你和伙伴在某个问题上存在分歧的争论。在你的书面报告中，呈现完整的争论并描述完整的情况。还要回答14:15-14:18下的问题b和c。**

Challenging a Position  
挑战一个职位

Challenging a position can result in its rejection, but rarely is a position destroyed simply by a challenge. Challenge often results in a clarification or a modification, especially if the challenge is presented gently, in a nonthreatening way. As you read these forms of challenge, imagine yourself trying to apply each to an extended discussion you have had in the past week that included an argument (not necessarily involving a hostile disagreement). Try to see whether the likely reply might have clarified the position, resulted in its modification, or been grounds for rejection. Again, the important thing is to practice asking these questions to yourself and to think about the import of possible responses. Stop now and think over the discussion and argument you select before you proceed.  
挑战一个立场可能导致其被拒绝，但很少有立场仅仅因为挑战而被摧毁。挑战通常会导致澄清或修改，尤其是如果挑战以温和、不具威胁性的方式提出。当你阅读这些挑战形式时，想象一下自己试图将每个挑战应用于你过去一周的一次长时间讨论，其中包括了争论（不一定涉及敌对的分歧）。试着看看可能的回复是否可以澄清立场、导致其修改或成为拒绝的理由。再次强调，重要的是要练习向自己提出这些问题，并思考可能回答的重要性。现在停下来，仔细思考你选择的讨论和争论。­cussion you have ­ified the position, resulted in its modification, or been grounds for rejection. Again,

Possibly not all of the following suggested challenges are applicable. But at least try to see whether each applies in your discussion.  
可能并非所有以下建议的挑战都适用。但至少尝试看看每个是否适用于您的讨论。

Producing an Apparent Counterexample  
生成一个表面上的反例

A counterexample is a case that seems inconsistent with the generalization offered or assumed. (Examples of counterexamples to definitions appear early in Chapter 12. A counterexample to the spontaneous generation hypothesis appears at the beginning of Chapter 8.) Even though you might think that a counterexample you offer will refute a position, often the result is clarification or modification.  
反例是一种似乎与所提供或假设的概括不一致的情况。（对定义的反例示例出现在第12章的早期。对自发生成假设的反例出现在第8章的开头。）即使你认为你提供的反例会驳斥一个立场，通常的结果是澄清或修改。

1. How would your view deal with a case like this: [describe a case that appears inconsistent with the view being presented]?  
   你的观点如何处理这样一个案例：[描述一个与所提出观点不一致的案例]？
2. Here is a situation (or case). It seems inconsistent with what you said. Is it?  
   这是一个情况（或案例）。它似乎与你所说的不一致。是吗？
3. What you said is not consistent with my experience: [describe the experience].  
   你说的与我的经验不一致：[描述经验]。
4. If what you said is true, then we would expect this also to be true: ..., but it is not true.  
   如果你说的是真的，那么我们也会期望这个是真的：...，但事实并非如此。
5. That could not be right because there is this case: . . . [describe it].  
   那不可能是正确的，因为有这个案例：. . . [描述它].

Suggesting a Possible Inconsistency  
建议可能存在的不一致性

The trouble with inconsistency is that no more than one of two inconsistent things can be right. The person who makes two statements that are inconsistent with each other must withdraw' at least one, on pain of having said nothing.

Ralph Waldo Emerson is often quoted as urging that foolish consistency is the hobgoblin of small minds, but he was not talking about straightforward inconsistency between two statements. Rather, he was chiding someone for unwillingness to change his mind in the face of good reason to do so.  
拉尔夫·沃尔多·爱默生经常被引用为敦促人们，愚蠢的一致性是小心灵的妖怪，但他并不是在谈论两个陈述之间的明显不一致。相反，他是在责备某人在面对充分理由时不愿改变主意。

Here are some questions that can be used to challenge a possible inconsistency:  
以下是一些可以用来挑战可能的不一致性的问题：

1. Here you said this, and there you said that. Do they conflict with each other?  
   在这里你说了这个，在那里你说了那个。它们是否相互冲突？
2. These two things you said appear incompatible. Are they?  
   这两件你说的事情似乎不相容。
3. You have contradicted yourself. You said this, and you said that. They can not both be true.  
   你自相矛盾。你说了这个，又说了那个。它们不能同时为真。

Dubious Reasons or Evidence  
可疑的原因或证据

If the explicitly stated reasons or evidence (the R in FRISCO) are dubious or false and if the argument depends on them, then the argument is suspect. But remember, that does not show’ the conclusion to be false.  
如果明确陈述的理由或证据（FRISCO中的R）是可疑或错误的，并且如果论证依赖于它们，那么这个论证是可疑的。但请记住，这并不意味着结论是错误的。

Because you now probably have the idea about the range from less-threatening to more-threatening questions, I shall henceforth only give one or two fairly nonthreatening questions to illustrate the challenge. You can supply others.  
因为你现在可能对从不那么具威胁性到更具威胁性的问题范围有了一个概念，所以从现在开始，我只会给出一两个相对不具威胁性的问题来说明这个挑战。你可以提供其他问题。­threatening

Sample Challenge: “You stated that . . . [give the stated reason], I wonder about that because the college newspaper reported otherwise.”  
样例挑战：你说过. . . [给出陈述的原因]，我对此感到好奇，因为大学报纸报道的情况恰恰相反。

Weak Source  
弱源

Often the credibility of a source is suspect. A challenge to the credibility of this source is then appropriate, and should probably refer to one or more of the criteria for credibility listed in Chapter 3.  
经常情况下，信息来源的可信度值得怀疑。对该信息来源的可信度提出质疑是合适的，可能应参考第三章列出的一个或多个可信度标准。­ibility listed

Sample Challenge: “That source has a conflict of interest, because. . . .” Another: “Why should we take that person’s word?”   
样本挑战：那个来源存在利益冲突，因为…… 另一个：为什么我们要相信那个人的话？

False or Dubious Assumption  
错误或可疑的假设

A position is no stronger than its assumptions. A standard challenge technique is to claim that the position assumes a proposition and that the proposition is false or dubious.  
一个立场的强度不超过其假设。一个常见的挑战技巧是声称该立场假设了一个命题，并且该命题是错误或可疑的。

Here is a sample challenge:  
这是一个示例挑战：

“Aren’t you assuming that . . . [give a dubious proposition that you think the argument needs in order to be the best argument that it can be] ?”  
"你难道不是假设……[给出一个你认为这个论点需要的可疑命题，以使其成为最好的论证]吗？"

­ment for This technique is more speculative than the dubious-explicit-reason technique because it is difficult to be sure that one has actually identified an assumption on which the argument or the position depends. (See Chapter 7.) Unfortunately, people often claim to identify an assumption when the assumption is not needed by the argument for the argument to be a good one.  
这种技术比可疑明确原因技术更具推测性，因为很难确定是否确实已经找到了论证或立场所依赖的假设。（见第7章。）不幸的是，人们经常声称找到了一个假设，而实际上论证并不需要这个假设才能成立。

­ing that the defense attorney made the following assumption: “A person who kills in defense against a threatened attack should be judged innocent of murder as well as voluntary manslaughter.” (The defense had argued, you probably remember, “My client is innocent because she was defending herself against attack.”) The juror then proceeded to reveal that he interpreted the word An example of the identification of an unneeded assumption was a juror’s claiming that the defense attorney made the following assumption: “A person who kills in defense against a threatened attack should be judged innocent of murder as well as voluntary manslaughter.” (The defense had argued, you probably remember, “My client is innocent because she was defending herself against attack.”) The juror then proceeded to reveal that he interpreted the word attack very broadly (including verbal attacks) and argued that the assumption was false because we did not think that defending yourself against the threat of insults generally justifies killing someone. But this was not relevant because the defense attorney did not need such a broad assumption and is unfairly burdened with such a sweeping assumption. Real physical attack was enough for his assumption to be about. So it is important to make sure that the assumption is needed by the position or argument, if refuting it is to count heavily against the position or argument. But despite the danger of misattribution of assumptions, attempted identification of a false assumption is useful at least in probing a position, and often in challenging it.  
一个不必要假设的识别示例是陪审团声称辩护律师做出了以下假设：在自卫的情况下杀人的人应该被判无罪，无论是谋杀还是自愿杀人。 （辩护律师曾辩称，你可能还记得，我的客户是无辜的，因为她是在自卫。）然后，陪审团成员继续透露，他广泛解释了“攻击”一词（包括口头攻击），并辩称这个假设是错误的，因为我们不认为为了对抗侮辱的威胁而自卫通常能够合理地证明杀人的行为。但这并不重要，因为辩护律师并不需要如此广泛的假设，并且被不公平地负担了如此广泛的假设。对他来说，真正的身体攻击就足够成立他的假设。因此，确保假设被立场或论点所需要是很重要的，如果反驳它会对立场或论点产生重大影响。但尽管存在错误归因假设的危险，试图识别错误假设至少在探究一个立场时是有用的，并且经常用于质疑它。­bal attacks) and argued that the assumption was false because ­tion and is unfairly burdened with such a sweeping assumption. Real physical attack was enough for his assumption to be about. So it is important ­tions, attempted identification of

Circular Argument  
循环论证

Sometimes an argument does not make any progress because it starts by explicitly assuming what it tries ultimately to prove. Usually, because of verbosity, this is less obvious than in the following example: “Our industry remains volatile. Therefore it is subject to change.”

Sample Challenge: “Your argument seems circular.”

Another: You seem to begin your argument by assuming your conclusion, though in different words.  
有时候，一个论点之所以没有任何进展，是因为它从一开始就明确地假设了它试图最终证明的内容。通常，由于冗长而不太明显，就像以下例子中所示：我们的行业仍然不稳定。因此，它是可以变化的。 挑战：你的论点似乎是循环论证的。 另一个观点：你似乎在你的论证中以不同的措辞假设了你的结论。

Changing the Subject  
改变主题

Often, in discussion, one person argues for something that is unrelated to the question at hand. Sometimes the shift is subtle, as occurred in the argument regarding selfishness (Item 14:14). Sometimes the shift is not subtle, as when the other person attacks you personally for your ignorance (or bad memory) about something that is not part of the issue. In the language of logical fallacies, such a personal attack is sometimes called argumentum ad hominem. I mention this label because having heard of the label might help you avoid being intimidated by someone’s using it. I do not recommend that you use it. I prefer the equivalent label personal attack argument. I used that label in Chapter 3, when I noted that some personal attack arguments (ad hominem arguments) are relevant. In any case, it is often easy to be distracted by changes in the subject, whether they are subtle or not.  
通常，在讨论中，有人会为与问题无关的事情辩论。有时转变是微妙的，就像在关于自私的争论中发生的那样（项目14:14）。有时转变并不微妙，就像对你个人的无知（或记忆不好）进行攻击，而这与问题无关。在逻辑谬误的语言中，这样的个人攻击有时被称为人身攻击论证。我提到这个标签是因为听说过这个标签可能会帮助你避免被某人使用它所恐吓。我不建议你使用它。我更喜欢等效的标签个人攻击论证。在第三章中，我使用了这个标签，当我指出一些个人攻击论证（人身攻击论证）是相关的。无论如何，往往很容易被主题的变化分散注意力，无论它们是微妙的还是不微妙的。­tion at hand. *­ment.*­ments ­tracted by changes in the subject, whether they are subtle or not.

Sample Challenge: “Have you changed the subject? I thought that we were talking about. ...”  
样例挑战：你改变了话题吗？我以为我们在谈论的是...

Another: “What does that personal attack have to do with the issue we are discussing?”  
另一个：那个人身攻击与我们讨论的问题有什么关系？

These challenges are much easier to see when you are not involved in a heated discussion and when you are not the butt of the personal attack, so you need to keep them in the back of your mind at all times.  
这些挑战在你不参与激烈讨论且不成为个人攻击的对象时更容易看到，因此你需要时刻将它们牢记在心。

Insufficient Reason or Evidence  
不充分的理由或证据

There are a variety of ways that the reasons and evidence offered can be insufficient. I shall mention a few:  
有各种各样的方式，可以使提供的理由和证据不足够。我将提及一些：

*Other plausible explanations. Sometimes a hypothesis does explain the evidence, but the evidence is not sufficient to rule out alternative hypotheses. See Chapters 8 and 9. To assert the hypothesis that one thing caused another, simply on the ground that the first preceded the second, has a special fallacy label: post hoc reasoning. Again I do not recommend that you use this label, but that you be familiar enough with it to avoid being intimidated when someone else uses it.  
其他合理的解释。有时候一个假设确实能解释证据，但是证据不足以排除其他假设。请参阅第8章和第9章。仅仅因为第一件事在第二件事之前发生，就断言第一件事导致了第二件事，这是一种特殊的谬误，被称为事后推理。再次强调，我不建议您使用这个标签，但是您应该对它足够熟悉，以避免在别人使用时感到被吓到。*

Sample Challenge: “Here’s another plausible explanation of that evidence: . . .” [Challenger offers the other plausible explanation.]  
样本挑战：这是另一种对证据的合理解释：... [挑战者提供另一种合理解释。]

*An undefended positional definition. Sometimes an undefended proposed definition embodies a position, and has value consequences, if it is accepted. (For example, “I define freedom as the power to do the right thing.”) Such a definition needs defense. See Chapter 13.  
一个没有防御的位置定义。有时，一个没有防御的提议性定义体现了一个立场，并且如果被接受，会产生价值后果。（例如，我将自由定义为做正确事情的能力。）这样的定义需要辩护。请参阅第13章。*­­ple, “I define freedom as the power to do the right thing.”) Such

Sample Challenge: “Why should we accept that definition?”  
为什么我们应该接受那个定义？

*Overgeneralization. Often, people draw general conclusions that apply to things or populations of which the evidence is not representative. See Chapter 10.  
过度概括。通常，人们会得出适用于事物或群体的一般性结论，而这些结论并不代表证据的真实情况。请参阅第10章。*

Sample Challenge: “Have you overgeneralized?”  
样例挑战：你是否过度概括了？

*Oversimplification. It is often tempting to oversimplify complicated situations by stating one or two simple principles and deriving a conclusion from them. Then one might neglect the fact that most acceptable value principles, and many others as well, have exceptions. See Chapter 11. Another standard kind of oversimplification is the assumption that there are only two alternatives, when in fact there are others (sometimes called the either-or fallacy).   
过度简化。往往会诱使人们通过陈述一两个简单原则并从中得出结论来过度简化复杂的情况。然后可能忽略了大多数可接受的价值原则以及许多其他原则都有例外的事实。请参阅第11章。另一种常见的过度简化是假设只有两种选择，而实际上还有其他选择（有时被称为非此即彼的谬误）。*

Sample Challenge: “But there are exceptions to that rule (or generalization). Here’s one: . . .” [Challenger describes an exception.]  
样例挑战：但是这个规则（或概括）有例外。这里是一个例外：... [挑战者描述了一个例外。]

Another: “There are other alternatives. It’s not just either this or that. It might be both, or it might be this other possibility: ...” [Challenger offers another alternative.]

*Emotional language without sufficient substance. People often appeal to slogans or use words (including glittering generalities and name-calling—some popular fallacy labels that are self-explanatory) that set off emotional reactions in many of us but do not offer substantial reasons.  
另外：还有其他选择。不仅仅是这个或那个。可能是两者兼有，或者可能是另一种可能性：... [挑战者提供了另一种选择。]情感化语言缺乏充分的实质内容。人们经常诉诸口号或使用词语（包括虚幻的普遍性和指责—一些常见的谬误标签，这些标签不言自明），这些词语在我们中的许多人中引起情绪反应，但并未提供充分的理由。*­lacy labels that are self-explanatory) that set off emotional reactions in many of us but do not offer substantial reasons.

Sample Challenge: “These are high-sounding phrases (or bad names), but now tell us your reasons.”  
示例挑战：这些是华而不实的词语（或糟糕的名字），但现在告诉我们你的理由。

Another: “That’s good rhetoric. Now let’s get down to substance.”  
另一个：那是很好的修辞。现在让我们来谈谈实质问题。

*Faulty analogy. An analogical argument (discussed in Chapter 11) proceeds by showing that two things are alike in some respects, and concludes that they are therefore alike in some other respect. Some analogical arguments are strong; some are faulty. Their potential weakness lies in the respects in which the two things are different, and there are always differences. For example, one might argue that all the nations of the world could successfully join together because they are like the thirteen states that joined together to form the United States. A challenger could note that the cases are different because the United States had external enemies against which the states needed to protect themselves, whereas the world has no such external enemies. As you can see, the argument could go on and on, possibly acquiring validity as it approximates one of our standard forms: deduction, loose derivation, induction (generalization or best-explanation), or value judging.  
错误的类比。类比论证（在第11章中讨论）通过展示两个事物在某些方面的相似之处，得出它们在其他方面也相似的结论。有些类比论证是强有力的，有些是错误的。它们的潜在弱点在于这两个事物之间的差异，而且总是存在差异。例如，有人可能会争论说世界上所有的国家可以成功地联合起来，因为它们就像曾经联合起来组成美国的十三个州一样。挑战者可能会指出，这两种情况是不同的，因为美国有外部敌人需要各州保护自己，而世界上没有这样的外部敌人。正如你所看到的，这个论点可能会继续下去，可能在逼近我们的标准形式之一时变得有效：演绎、松散推导、归纳（概括或最佳解释）或价值判断。*­fore alike in some other respect. Some analogical arguments are strong; some are faulty. Their potential weakness lies in the respects in which the two things are dif­ferent, and there are always differences. For example, one might argue that all the nations of the world could successfully join together because they are like the thir­teen states that joined together to form the United States. A challenger could note that the cases are different because the United States had external enemies against which the states needed to protect themselves, whereas the world has no such exter­nal enemies. As you can see, the argument could go on and on, possibly acquiring validity as it approximates one of our standard forms: deduction, loose derivation, induction (generalization or best-explanation), or value judging.

Sample challenge: “There’s a significant relevant difference between these two cases: . . .” [Challenger describes the difference.]  
样例挑战：这两种情况之间存在着一个显著的相关差异：... [挑战者描述了这个差异。]

*Neglect of a point of view. Often, a conclusion depends on the point of view of the arguer. It sometimes helps to show that from another point of view, the evidence is insufficient.  
忽视一个观点。通常，结论取决于辩论者的观点。有时候，从另一个角度来看，证据是不足够的。*

Our point of view, as jurors in judging Arlene guilty of voluntary manslaughter, was nonconfrontational. That is, we assumed that if a person is threatened and there is an easy way to escape, that person should take that way of escape. From the point of view that women should fight back and confront threatened violence with violence, our evidence was insufficient to show that she was not justified in using the force she used.  
我们作为陪审团对阿琳被判故意杀人罪的观点是非对抗性的。也就是说，我们假设如果一个人受到威胁并且有一种容易逃脱的方式，那个人应该选择逃脱。从女性应该反击并以暴力对抗威胁暴力的观点来看，我们的证据不足以证明她在使用所用的武力时没有正当理由。

Sample Challenge: “But look at it from this point of view: ...” [Challenger describes it.]  
样例挑战：但从这个角度来看：... [挑战者描述它。]

*General failure to follow. Sometimes, we feel bewildered by the claim that a conclusion follows from the reason(s) or evidence because we cannot see how anyone could have thought it did, or we just do not understand the alleged connection. In that case, a general challenge is appropriate.  
一般性的不遵循。有时候，我们对于一个结论是如何从原因或证据中得出的感到困惑，因为我们无法理解任何人是如何认为它是这样的，或者我们只是不理解所谓的联系。在这种情况下，适当的是提出一般性的质疑。*­clusion follows from the reason(s) or evidence because we cannot see how anyone could have thought it did, or we just do not understand the alleged connection. In that case, a general challenge is appropriate.

Sample Challenge: “I do not see the connection between the reason(s) and your conclusion.”  
示例挑战：我看不到原因和你的结论之间的联系。

Another: “Could you explain how this is relevant to your conclusion?”   
另一个：你能解释一下这与你的结论有什么关联吗？

(There is a special term used for a general-type failure of a conclusion to follow from its support: *non sequitur.* I mention this term so that you will not be intimidated by its use, though again I do not recommend that you use it. To say that something is a *non sequitur* is to say only that the conclusion does not follow. I was disappointed when I learned that this impressive phrase meant only that. I had expected the term to have a more specific meaning. How about you? Anyway, now you know.)

That completes this suggested set of ways that the sufficiency of the evidence or reason(s) could be challenged. You might think of others, but these are enough for now. You might even want to put the next item, equivocation, in this group. But elegant categorization of ways of going wrong is not our concern here.  
有一个特殊术语用于描述结论与其支持之间的一般性失败：非因果关系。我提到这个术语是为了让你不被它的使用所吓到，尽管我不建议你使用它。说某个东西是非因果关系只是说结论不成立。当我得知这个令人印象深刻的短语只有这个意思时，我感到失望。我原本以为这个术语有更具体的含义。你呢？无论如何，现在你知道了。" "这就完成了对证据或理由的充分性可能受到质疑的建议性方式的介绍。你可能会想到其他的方式，但现在这些已经足够了。你甚至可能想把下一个项目，即模棱两可，放在这个组里。但是，对错误方式的优雅分类并不是我们关心的问题。

Equivocation  
模棱两可

­ing of meaning of Sometimes an argument can look good, but not be so because it depends on the shifting of meaning of a key term during the course of the argument (see Chapter 13).  
有时候一个论点看起来很有道理，但实际上并非如此，因为它依赖于在论证过程中关键术语的意义转变（见第13章）。

Sample Challenge: “Have you changed the meaning of [state term] in drawing your conclusion?”  
样本挑战：在得出结论时，您是否改变了[状态术语]的含义？

Another: “No matter which interpretation of [state term] we use, your argu­ment is defective. Look. On this meaning, there is a problem here. On that meaning, there is a problem there. There do not seem to be any other plausi­ble interpretations.”

Fallacy Labels  
谬误标签

As you may have noted, I have tried to work a definition and brief discussion of some of the major fallacy labels into this discussion of challenge questions. To apply a fallacy' label to someone’s thinking is in effect to raise a challenge question.  
另一个：无论我们使用哪种对[国家术语]的解释，你的论点都是有缺陷的。看。在这个意义上，这里有一个问题。在那个意义上，那里有一个问题。似乎没有其他合理的解释。谬误标签正如你可能已经注意到的，我试图在对挑战性问题的讨论中，加入了一些主要谬误标签的定义和简要讨论。将一个谬误标签应用于某人的思维，实际上是提出了一个挑战性问题。­lacy'

The danger with fallacy labels is that for many of them, activities that they fit are often not fallacious; that is, they are often not mistaken. For example, appeal to authority is a fallacy label (presented in Chapter 3), but many instances of appeal to authority are perfectly all right. We do it when we provide citations to support a reason we are using, and often this is perfectly legitimate.  
谬误标签的危险在于，对于其中许多标签来说，它们所适用的活动通常并非谬误；也就是说，它们通常并非错误的。例如，权威诉诸是一个谬误标签（在第3章中介绍），但是许多权威诉诸的实例是完全正确的。当我们提供引用来支持我们所使用的理由时，我们就在使用权威诉诸，而且通常这是完全合理的。­

On the other hand, some fallacy labels, such as circularity and non sequitur, if applied correctly, label only mistakes. In any case, it is helpful to be familiar with the most common fallacy labels, in part because they sensitize us to common sources of error, and in part because they provide an efficient way to communicate complaints (to those who understand their meaning). You will find definitions of a number of popular fallacy labels in the Glossary.  
另一方面，一些谬误标签，比如循环论证和非因果关系，如果正确应用，只标记错误。无论如何，熟悉最常见的谬误标签是有帮助的，部分原因是它们使我们对错误的常见来源敏感，部分原因是它们提供了一种有效的方式来传达投诉（对于那些了解它们含义的人）。您将在词汇表中找到一些流行的谬误标签的定义。

Summary and Comment  
摘要和评论

Although I could have categorized these kinds of problems and challenges differently, no one listing being perfect, I hope I have conveyed a number of different kinds of challenges that might be used in a discussion. These include claiming that:  
尽管我可以将这些问题和挑战进行不同的分类，但没有一个分类是完美的，我希望我传达了许多不同种类的挑战，可以在讨论中使用。这些包括声称：

There are possible counterexamples.  
可能存在反例。

There is an inconsistency.  
有一个不一致。

The evidence or reasons are false or at least dubious.   
证据或理由是虚假的，或者至少是可疑的。

The source is not credible.  
来源不可靠。

An assumption is false or dubious.  
假设是错误或可疑的。

The argument is circular.  
这个论点是循环的。

The subject has been changed.  
主题已更改。

The evidence or reasons are insufficient because  
证据或理由不足

There is another possible explanation.  
另外还有一个可能的解释。

A positional definition is undefended.  
位置定义未被防守。

There is overgeneralization.  
存在过度概括。

There is oversimplification, including using exceptionless principles and the either-or fallacy.  
存在过度简化，包括使用无例外原则和非此即彼的谬误。

There is emotional language without sufficient substance.  
有情感色彩但缺乏充实内容。

The analogy is faulty.  
类比是错误的。

A legitimate point of view has been neglected.  
被忽视了一个合理的观点。

There is some general failure to follow.  
有一些普遍的不遵循。

Equivocation occurred.  
发生了模棱两可。

­tions. You might not always be justified in your use of these challenges, but—with people of goodwill and understanding—challenges like these can at least help clarify.For each of these defects, I have suggested one or more possible challenge questions. You might not always be justified in your use of these challenges, but—with people of goodwill and understanding—challenges like these can at least help clarify.  
对于这些缺陷，我提出了一个或多个可能的挑战性问题。你可能并不总是有理由使用这些挑战，但是在善意和理解的人们面前，这些挑战至少可以帮助澄清。

­duced in various other parts of the book. These labels can be useful because they warn of standard places where people go wrong and because they provide an efficient way to communicate a complaint—if the person being addressed knows the mean­ing. They are dangerous because they often intimidate people who do not know the meaning of these labels and because they seem to invite being applied simplistically. Beware.Many fallacy labels were used in this section, and some others have been introduced in various other parts of the book. These labels can be useful because they warn of standard places where people go wrong and because they provide an efficient way to communicate a complaint—if the person being addressed knows the meaning. They are dangerous because they often intimidate people who do not know the meaning of these labels and because they seem to invite being applied simplistically. Beware.  
在本节中使用了许多谬误标签，并且在本书的其他各个部分中也引入了一些其他的标签。这些标签是有用的，因为它们警示人们常犯错误的标准位置，并且它们提供了一种有效的方式来表达抱怨 - 如果被称呼的人知道其含义的话。它们是危险的，因为它们经常使不了解这些标签含义的人感到恐惧，并且它们似乎邀请人们以简单化的方式应用。请小心。

Before proceeding to look at ways of responding to challenges directed at you in the next section, please practice using the above challenges and similar ones that you develop for yourself, as in Check-Up Items 14:25 and 14:26.  
在继续查看下一节中针对您提出的挑战的应对方式之前，请练习使用上述挑战和您自己开发的类似挑战，例如检查项目14:25和14:26。

Check-Up 14C

True or False?  
真或假？

If false, change it to make it true. Try to do so in a wav that shows that you understand.  
如果为假，请将其更改为真。尝试以一种能够显示您理解的方式来做到这一点。

14:20 Challenging a position is dangerous because it will not result in clarification.  
14:20 挑战一个立场是危险的，因为它不会导致澄清。

­tion or a definition.14:21 A counterexample is an example that appears to count against a position or a definition.  
14:21 反例是指看似反对某个立场或定义的例子。

14:22 A circular argument is one that starts by explicitly assuming what it ends up trying to prove.   
14:22 循环论证是一种从明确假设最终试图证明的论点开始的。

**14:23 Post hoc reasoning is reasoning that concludes that one thing caused another simply because it preceded the other.  
事后推理是一种推理，它得出一个事物导致另一个事物的结论，仅仅因为前者在后者之前。**

**14:24 Anything accurately labeled by one of the fallacy labels is a mistake.  
14:24 任何被逻辑谬误标签准确标记的都是错误。**

Application of Challenge Questions  
挑战问题的应用

**14:25 Find a partner. Each of you choose and adopt one of the arguments in Items 14:12-14:14 on which you have not yet practiced, or find another argument in this book. Imagine a context for the argument(s) chosen. Then one of you should try to formulate a challenge of each of the types listed above (in the immediately preceding section Summary and Comment). The challenge should apply to the argument that your partne r has chosen. The partner should try to respond. Next, reverse roles and select another argument. The previous challenger should become an arguer, and the previous arguer should become the challenger, again trying to frame each of the types of challenge listed above. Then write out answers to the following questions:  
14:25 寻找一个伙伴。你们中的每个人选择并采纳你们尚未练习过的14:12-14:14项中的一个论点，或者在本书中找到另一个论点。为所选择的论点设想一个背景。然后，你们中的一人应尝试对上一节“总结与评论”中列出的每种类型的挑战进行表述。挑战应该适用于你的伙伴选择的论点。伙伴应该尝试回应。接下来，交换角色并选择另一个论点。之前的挑战者应成为辩论者，之前的辩论者应成为挑战者，再次尝试对上述每种类型的挑战进行构思。然后回答以下问题：**­lenger should become an arguer, and the previous arguer should become the challenger, again trying to frame each of the types of chal­lenge listed above. Then write out answers to

1. Which arguments did you choose? Describe the situations you have imagined.  
   你选择了哪些论点？描述一下你所想象的情景。
2. Wluch of the challenges seemed most useful? How so? c. Which of the challenges seemed least useful? How so?  
   哪些挑战似乎最有用？为什么？c. 哪些挑战似乎最无用？为什么？

**14:26 Find a partner. Select an argument that you find in your daily life, such as from a newspaper editorial page, a magazine article, a talk show, a debate, a discussion with a friend, or a meeting you attended. It can be the same one you selected for Check-Up Item 14:19, but you might find it more interesting to find another. Join together to try to formulate a challenge of each of the types listed above (in the immediately preceding section Summary and Comment). If you have ready access to the arguer, deliver the challenge and record the response. If you do not have ready access to the arguer, imagine what the response might be (if you can) and record that. Then:  
14:26 寻找一个伙伴。选择一个你在日常生活中遇到的论点，比如来自报纸社论版、杂志文章、脱口秀、辩论、与朋友的讨论或者你参加的会议。可以选择与14:19检查项目中相同的论点，但你可能会发现选择另一个更有趣。合作尝试制定出上述类型中的每一种的挑战（在前一节摘要和评论中列出）。如果你可以轻松接触到争论者，提出挑战并记录回应。如果你无法轻松接触到争论者，可以想象一下可能的回应（如果你能够）并记录下来。然后：**­ately

1. Provide a copy of the argument.  
   提供一个论据的副本。
2. Specify important features of the situation, c. Provide a copy of the (possible) responses, d. State which of the challenges seemed most useful, and why. e. State which of the challenges seemed least useful, and why.  
   指定情况的重要特征，c. 提供（可能的）回应的副本，d. 指出哪些挑战似乎最有用，以及为什么。e. 指出哪些挑战似乎最无用，以及为什么。

Responding  
回应

­fication and challenges that I have presented. You have, I hope, practiced asking them and have offered some responses to them. Next I shall present some overall strategies for responding to these straightforward questions and challenges, and then some strategies for responding when things seem to be going wrong.By now, you should have a fairly good idea of the straightforward questions of clarification and challenges that I have presented. You have, I hope, practiced asking them and have offered some responses to them. Next I shall present some overall strategies for responding to these straightforward questions and challenges, and then some strategies for responding when things seem to be going wrong.   
到目前为止，你应该对我提出的明确问题和挑战有了相当清晰的理解。我希望你已经练习了提问并对其做出了一些回答。接下来，我将介绍一些应对这些明确问题和挑战的整体策略，然后是一些在事情似乎出错时的应对策略。

Responding to Straightforward Questions of Clarification and to Challenges  
回答明确的澄清问题和挑战

­est, helpful answer. But beyond this, the following strategies for dealing with straight­forward questions of clarification and challenge can be helpful:Knowing what to expect is half the battle. However, that is not all there is to it. You still need to be alert and well-informed, and of course you should try to give an honest, helpful answer. But beyond this, the following strategies for dealing with straightforward questions of clarification and challenge can be helpful:  
知道可以期待什么是战斗的一半。然而，这还不是全部。你仍然需要保持警惕和了解情况，当然你应该尽力给出诚实、有帮助的答案。但除此之外，以下处理明确问题和挑战的策略可能会有所帮助：

*Restate the question. It often helps to rephrase the question and reflect it back to the questioner. (“Is this what you are asking. . . ?” or “This is what I think you are asking. . . .” [restate the question, using other words].) Doing this not only ensures that you are communicating with the person, but gives you time to think and ensures that everyone else has heard and understands the question. This strategy is especially valuable when the question is vague.  
重述问题。重新表达问题并将其反馈给提问者通常会有所帮助。（这是你在问的吗？或者我认为你在问的是……[用其他词重新表述问题]）。这样做不仅确保你正在与对方进行沟通，还给了你思考的时间，确保其他人都听到并理解了问题。当问题模糊不清时，这种策略尤为有价值。*

*If there are several questions from one person, deal with them one at a time. Sometimes in large groups, a questioner will try to ask a number of questions in a row. Often it is a good idea to interrupt after the first question and try to answer it, saying that if the questioner goes on, you will forget the question and your prospective response.  
如果一个人有几个问题，请逐个解答。有时在大团体中，提问者会试图连续提出多个问题。通常最好在第一个问题之后打断并尝试回答，告诉提问者如果继续提问，你会忘记问题和你的预期回答。*­tive response.

Actually, a trick that veteran presenters sometimes use to fend off challenges is to allow the challenger to offer several challenges, and then to respond only to one, the weakest of the lot. This is sometimes effective persuasive strategy on the part of the presenter. In order to avoid its being used on you when you are raising challenges in a large group setting (and you are not a designated respondent), it is usually best to offer the strongest one first, and then seek full discussion of it. Then, if there is more opportunity after it is discussed fully, you might try to offer another.  
实际上，有时候经验丰富的演讲者会使用一个技巧来抵御挑战，那就是允许挑战者提出几个挑战，然后只回应其中最弱的一个。这对演讲者来说有时是一种有效的说服策略。为了避免在你在一个大型团体环境中提出挑战时（而你不是指定的回应者），这种策略被用在你身上，通常最好先提出最强的挑战，然后寻求对它进行充分讨论。然后，如果在充分讨论之后还有机会，你可以尝试提出另一个挑战。

*Summarize your answer when you are finished. Unless the question is a simple “Yes” or “No” question, it usually helps to summarize your answer. Then you and the other(s) know what the central features of your answer are.  
完成后，请总结您的答案。除非问题是一个简单的是或否的问题，总结您的答案通常有助于您和其他人了解您答案的核心特点。*

*Admit the weaknesses of your memory, but compensate. Often, when asked how you know something, you cannot remember your exact source. Sav so, but offer to try to find it and supply it later, if the person so desires. Then do try to find it and supply it to the person at some later time. Another response is to ask others in the discussion whether they also believe the reason, and whether thev know a source. Sometimes, if your claim is commonly accepted knowledge, just say so. But be careful. Perhaps your reason really is dubious.  
承认你的记忆力的弱点，但要进行补偿。经常情况下，当被问及你是如何知道某件事的时候，你可能无法记起确切的来源。这样的话，可以表示愿意尝试找到并在稍后提供给对方。然后确实尝试找到并在稍后的时间提供给对方。另一种回应是询问其他参与讨论的人是否也相信这个理由，以及他们是否知道来源。有时，如果你的主张是被广泛接受的知识，可以直接说出来。但要小心。也许你的理由确实是可疑的。*­ful. Perhaps your reason really is dubious.

­dence. Just show good faith in responding and take your time.Do not feel embarrassed by not being able to remember all your sources of evidence. Just show good faith in responding and take your time.  
不要因为记不住所有证据来源而感到尴尬。只需展示诚意回应，并且慢慢来即可。

*Admit possible problems with your position when they are pointed out. If someone has offered what looks like a good challenge and you cannot think of an answer, admit it. There are often possible answers that you are not able to think of on the spot. Tell the person that you will think more about it and, if this is feasible, let the person know the result. On the other hand, if you are wrong and realize it on the spot, admit it.  
当别人指出你的立场可能存在问题时，请承认。如果有人提出了一个看起来很有挑战性的问题，而你又无法想出答案，就承认吧。通常情况下，你可能无法立即想到所有可能的答案。告诉对方你会再考虑一下，并且如果可能的话，告诉对方结果。另一方面，如果你发现自己错了，并且立即意识到了，就承认吧。*

If there are weaknesses in your position that you know about in advance, it is often a good idea to admit them in advance and say that you are working on them. Then your presentation is stronger.   
如果你事先知道你的立场存在弱点，通常最好事先承认并表示你正在努力改进。这样你的陈述就更有说服力。

*Define your terms. When requested to define your terms (and when not requested, if you have reason to think that the others might otherwise be confused), do so. Your terminology might be different from that of other people. If someone requests a definition, it is often easiest to produce an equivalent-expression definition (Chapter 12), starting with the expression in which the term was embedded in your presentation. Because your definition, whatever its form, is likely to be one you have to formulate on the spot, and because definition hawks can often find fault with definitions presented in universal terms, it might help to add the phrase roughly speaking to introduce your definition. Ordinarily, the goal is to give sufficient meaning to facilitate communication rather than to give a universally applicable definition. Classification definitions (as contrasted with equivalent-expression and range definitions—Chapter 12) without the phrase roughly speaking are especially dangerous in difficult situations because it is usually possible to defeat them and divert attention from the important things at hand.  
明确你的术语。当被要求定义你的术语时（即使没有被要求，如果你有理由认为其他人可能会感到困惑），请这样做。你的术语可能与其他人不同。如果有人要求定义，通常最容易的方法是提供一个等效表达的定义（第12章），从术语嵌入在你的演示中的表达式开始。因为你的定义，无论其形式如何，往往是即兴构思的，而且因为定义鹰常常能够找出以普遍术语呈现的定义的缺点，所以在你的定义中加入“粗略地说”这个短语可能会有所帮助。通常，目标是给予足够的意义以促进沟通，而不是给出一个普遍适用的定义。分类定义（与等效表达和范围定义相对比—第12章）如果没有“粗略地说”这个短语，在困难情况下尤其危险，因为通常可以击败它们并将注意力从重要的事情上转移。*­initions presented in universal terms, it might help to add the phrase ­itate communication rather than to give a universally applicable definition. Classification definitions (as contrasted with equivalent-expression and range defini­tions—Chapter 12) without the phrase

*Respond appropriately to a challenge to your analogy. Suppose someone challenges your analog)' by saying that the cases are different and then states what appears to be a difference. Of course, every analogy' includes a difference in at least some respect, so the crucial issue here is whether the difference is relevant. If so, is it a significant relevant difference in the situation?  
对于对你的类比的质疑，要适当地回应。假设有人质疑你的类比，并指出了一个看似不同的地方。当然，每个类比都至少在某些方面存在差异，所以关键问题在于这个差异是否相关。如果是的话，那么这个差异在情况中是否是一个重要的相关差异？*­lenges your analog)' by saying that the cases are different and then states what appears to be ­nificant relevant

Suppose you have argued that the world of today is like eighteenth-century central North America, so the countries of the world would be better off united under one central government, just as the thirteen colonies were better off united under one central government. Suppose further that someone in response points out that the world has no outside enemies, whereas the colonies did, so the cases are different. What do you do? You have several choices.  
假设你已经争论过今天的世界就像十八世纪的北美中部一样，所以世界各国在一个中央政府的领导下会更好，就像十三个殖民地在一个中央政府的领导下会更好。进一步假设有人回应说，世界没有外部敌人，而殖民地有，所以情况不同。你会怎么做？你有几个选择。­tral North America, so the countries of the world would be better off united under one ­

First, you can say that you are just using the analogy to make your point more clear. Second, you can deny that the alleged difference is a difference. In this case, vou might say that there is an outside enemy (such as large-scale violence, slavery, or environmental disaster). Third, you can try to show that the difference is insignificant. This last is often difficult to achieve. To avoid a shouting match (“Yes it is!” “No it isn’t!” “Yes it is!”) you might need to resort to a more straightforward value argument (Chapter 11), deductive or loose derivation argument (Chapters 5-7), or inductive argument (Chapters 8-10).  
"首先，你可以说你只是用类比来更清楚地表达你的观点。其次，你可以否认所谓的差异是一个差异。在这种情况下，你可以说存在一个外部敌人（如大规模暴力、奴隶制或环境灾难）。第三，你可以试图证明这种差异是微不足道的。最后一点通常很难实现。为了避免争吵（是的，它是！不，它不是！是的，它是！），你可能需要诉诸于更直接的价值论证（第11章），演绎或宽泛推导论证（第5-7章），或归纳论证（第8-10章）。”­

Sometimes, however, analogies are used like counterexamples to arguments, that is, to show that someone else’s argument is defective by offering a similar argument that is obviously defective. Suppose someone had claimed that there is no such tiling as general critical thinking ability, using as a reason the fact that all instances of critical thinking are thinking about a specific topic or thing. Suppose you responded by showing an analogous argument to be fallacious and claiming that therefore the original argument is fallacious. The analogous fallacious argument could be that because all instances of reading are reading of a particular set of words and are about some particular topic, there could then be no such thing as general reading ability[footnoteRef:26] (and, it is assumed, there is such a thing as general reading ability).  
有时候，然而，类比被用作反例来反驳论点，也就是说，通过提出一个明显有缺陷的类似论证来表明别人的论证是有问题的。假设有人声称通用的批判性思维能力不存在，并以所有批判性思维实例都是关于特定主题或事物为理由。假设你回应道，通过展示一个类似的错误论证来证明原始论证也是错误的。这个类比的错误论证可能是因为所有阅读实例都是阅读一组特定的单词并且是关于某个特定主题，所以通用的阅读能力就不存在[26]（并且，据假设，通用的阅读能力是存在的）。­ment [[25]](#footnote-25)

If the original arguer then pointed out that reading and critical thinking are dif ferent, what should you do? Here you are in a stronger position than with the previous analogical argument. You can say that your analogy shows that a particular generalization is false (a generalization that the original argument appeared to be assuming), and then you can ask the original arguer to produce an alternative generalization or some other assumption that would justify the original argument. Here is the generalization that the analogous argument showed to be false: “If a series of activities with the same name focuses on different things, then there is no general ability to do those things.” You can ask for an alternative and, if it is provided, check to see whether it will do the job for the original argument, and whether it is immune to your counterexample or some other counterexample.  
如果原始辩论者指出阅读和批判性思维是不同的，你应该怎么做？在这里，你比之前的类比论证更有优势。你可以说你的类比表明了一个特定的概括是错误的（原始论证似乎是基于这个概括），然后你可以要求原始辩论者提出一个替代的概括或其他假设，来证明原始论证的合理性。这是类比论证所显示出的错误概括：如果一系列同名的活动关注不同的事物，那么就没有一般能力来做这些事情。你可以要求一个替代方案，并且如果提供了，检查它是否能够满足原始论证的要求，并且是否能够免受你的反例或其他反例的影响。­­ous analogical argument. You can say that your analogy shows that a particular gen­eralization is false (a generalization that the original argument appeared to be assum­ing), and then you can ask the original arguer to produce an alternative generalization or some other assumption that would justify the original argument. Here is the gen­eralization that the analogous argument showed to be false: “If a series of activities with the same name focuses on different things, then there is no general ability to do those things.” You can ask for an alternative and, if it is provided, check to see whether it will do the job for the original argument, and whether it is immune to your counterexample or some other counterexample.

­ful in clarifying your position or point of view.In sum, defending analogical arguments is sometimes tricky because so much is left unsaid in analogical arguments. But you are likely to be in a stronger position if your analogy is used to counter another argument than if yours is used directly to buttress your own position. Furthermore, your analogies will probably be quite helpful in clarifying your position or point of view.  
总之，辩护类比论证有时会很棘手，因为在类比论证中有很多未说的内容。但是，如果你的类比被用来反驳另一个论点，那么你很可能处于更有利的位置，而不是直接用来支持自己的立场。此外，你的类比可能会对澄清你的立场或观点非常有帮助。

Responding When Things Seem to Be Going Wrong  
当事情似乎出错时作出回应

Although not totally different from the response strategies just presented, these strategies express more suspicion of the motives or strategy of the challenger. They are appropriate when something seems awry.  
虽然与刚刚提到的应对策略并没有完全不同，但这些策略更多地表达了对挑战者动机或策略的怀疑。当事情似乎不对劲时，它们是合适的。

*The challenge or question presupposes a proposition that actually is at issue in the situation, or is false. An example that illustrates the problem is, “Have you stopped beating your child?” This question presupposes that you have been beating your child —and that you have a child. Instead of answering the question “Yes” or “No,” you should reject the question (assuming that you have not been beating your child or have no child).  
挑战或问题预设了一个在情况中实际上存在争议的命题，或者是错误的。一个说明这个问题的例子是，你已经停止打你的孩子了吗？这个问题预设了你一直在打你的孩子，而且你有一个孩子。你不应该回答是或否，而是应该拒绝这个问题（假设你没有打你的孩子或者没有孩子）。*

­sion about who was responsible for the missile gap (the superiority of the Soviet Union in missiles). It has since turned out that the discussion falsely presupposed that there was a missile gap. The argument about responsibility inevitably made the incumbent administration look bad because it was fairly directly involved in day-to­day military activities.Another example: In the presidential election of 1960, there was much discussion about who was responsible for the missile gap (the superiority of the Soviet Union in missiles). It has since turned out that the discussion falsely presupposed that there was a missile gap. The argument about responsibility inevitably made the incumbent administration look bad because it was fairly directly involved in day-today military activities.  
另一个例子：在1960年的总统选举中，关于谁对导弹差距（苏联在导弹方面的优势）负责的讨论很多。事实后来证明，这个讨论错误地假设存在导弹差距。关于责任的争论不可避免地使现任政府看起来很糟糕，因为它与日常军事活动有相当直接的关系。

­ficult thing in dealing with them is noticing them in the first place.Response strategy: Challenge the question, if it has a false presupposition. Even more important, be on the alert for false or dubious presuppositions. The most difficult thing in dealing with them is noticing them in the first place.  
应对策略：如果问题有错误的预设，就质疑它。更重要的是，要警惕错误或可疑的预设。处理这些预设最困难的地方在于首先注意到它们。

*The questioner attributes a false assumption to your position, an assumption to which your position is not committed. Although your position might depend on false assumptions, it is well to be wary of this move. Your position might not depend on the alleged assumption.  
提问者将一个错误的假设归因于你的立场，而你的立场并没有承诺这个假设。虽然你的立场可能依赖于错误的假设，但对这种做法要保持警惕。你的立场可能并不依赖于所谓的假设。*

Strategy: If you are confident that you do not need the assumption, then just say so, and show how your position can be defended, even though the proposed assumption is false. If you are in doubt, then you might ask why the questioner thinks that your position needs that assumption.  
策略：如果你确信不需要这个假设，那就直接说出来，并展示出你的立场如何能够被捍卫，即使所提出的假设是错误的。如果你有疑问，那么你可以问问提问者为什么认为你的立场需要那个假设。

*The questioner seems to assume implicitly a misdescription of your position. This problem shows itself when the other person starts to attack a position that is not yours but acts as if it is yours. Realizing that this has happened is often difficult.   
提问者似乎在暗示你的立场被错误描述了。当对方开始攻击一个并非你的立场，却表现得好像是你的立场时，这个问题就会显现出来。意识到这一点往往很困难。*

­tion, not some other position.Strategy: Be on the alert to make sure that the challenge applies to your position, not some other position.  
策略：保持警惕，确保挑战适用于你的职位，而不是其他职位。

*Someone explicitly misdescribes your position (or someone’s position that you are defending or investigating). Strategy: When it happens to you, just restate your position. If the difference is complicated, then you might also restate the misdescription and point out the difference.  
当有人明确错误描述你的立场（或你所捍卫或调查的某人的立场）时。策略：当这种情况发生时，只需重新表述你的立场。如果差异很复杂，你还可以重新表述错误描述并指出差异。*­tion. If the difference is complicated, then you might also restate the misdescription and point out the difference.

­merly called the Note: These first four problems are examples of the straw-person fallacy (formerly called the straw-man fallacy). To commit the straw-person fallacy is to misinterpret or misdescribe a person’s position and attack the resulting easy target. The fourth way of committing the straw-person fallacy (the direct misstatement) is the easiest to detect, but is still not easy because so much is going on at once.  
注意：这前四个问题是稻草人谬误的例子（以前被称为稻草人谬误）。犯稻草人谬误是错误解释或描述一个人的立场，并攻击由此产生的易于攻击的目标。犯稻草人谬误的第四种方式（直接错误陈述）是最容易被发现的，但仍然不容易，因为同时发生了很多事情。­terpret or misdescribe a person’s position and attack the resulting easy target. The fourth way of committing the straw-person fallacy (the direct misstatement) is the easiest to detect, but is still not easy because so much is going on at once.

*The person changes the subject. Sometimes the person starts addressing a different point. The difficult thing to do here is to realize that the subject has been changed Be on the alert.  
这个人改变了话题。有时候这个人开始谈论不同的观点。在这里要做的困难之处是意识到话题已经改变了。保持警惕。*­ent point. The difficult thing to do here is to realize that the subject has been changed Be

Sometimes the subject is changed by someone’s making a personal attack on you. This is difficult to handle because you feel obliged to defend yourself rather than the point you are making. The attack on you might even cause you to forget the point. But beware. Some personal attacks are relevant, including any that impugn your credibility as a source (see Chapter 3) or the dependability of your observation (see Chapter 4). Then you must deal with the attack, and consider whether your credibility or dependability are justifiably impugned. If not, defend them.  
有时候，当有人对你进行人身攻击时，主题会发生改变。这很难处理，因为你会感到有义务为自己辩护，而不是为你所表达的观点辩护。对你的攻击甚至可能导致你忘记了观点。但要小心。有些人身攻击是相关的，包括任何对你作为信息来源的可信度（见第3章）或你观察的可靠性（见第4章）的诋毁。那么你必须处理这种攻击，并考虑你的可信度或可靠性是否受到合理的诋毁。如果没有，就要为它们辩护。

It is often difficult to detect the change of subject that shifts the meaning of the words of the conclusion, but uses the same words. This is one way of interpreting what happened in Check-Up Item 14:14.  
往往很难察觉到主题的变化，它改变了结论的意思，但使用了相同的词语。这是解释在检查项目14:14中发生了什么的一种方式。

General strategy: Ask for the relevance of the challenge, given the real issue at hand. (See Chapter 13 for further advice.)  
一般策略：根据实际问题询问挑战的相关性。（更多建议请参见第13章。）

*The questioner provides an abstract question or point, the import of which you do not see. Strategy: When this happens, ask for an example—or ask for an example of the application of this question or point in some practical context that present company agrees is important.  
提问者提供了一个抽象的问题或观点，你没有看到其重要性。策略：当发生这种情况时，要求提供一个例子，或者要求在某个实际环境中应用这个问题或观点的例子，该环境被现有人员认为是重要的。*­

*The questioner asks for an unneeded definition. It is difficult to respond to a request for a definition of a basic term, the meaning of which is implicitly known by all concerned, but which is very difficult to state. Here is an example: “You just said that it is true that the same side of the moon always faces the earth. What do you mean by true?’ Another: “You just said that the short circuit caused the fire. What do you mean by caused?’ Any attempt to define precisely the terms true and caused in contexts like those is very likely to founder. It will probably be open to counterexamples.  
提问者要求一个不必要的定义。对于一个基本术语的定义的请求，其含义被所有相关人士隐含地知道，但很难明确表述，这是很难回答的。这里有一个例子：你刚才说，月球的同一面总是面向地球，你所说的真实是什么意思？另一个例子：你刚才说，短路引起了火灾，你所说的引起是什么意思？在这些情境中精确定义真实和引起这些术语很可能会失败。它很可能会有反例。*

Strategy: One thing to do is to give a brief equivalent-expression definition (Chapter 12) that is fairly uninformative, but that is good enough for the situation: “When I said that it is true that the same side of the moon always faces the earth, I only meant that, roughly speaking, there can be no doubt about that.” When your subject is astronomy, you do not need to argue the philosophical problem of the meaning of truth. It is similar with cause. If your subject is the burning of the house, you can say, “When I said that the short circuit caused the fire, I only meant that the short circuit produced the fire.” If the discussant wants to pursue the philosophical question of the meaning of truth or of cause, and if the primary concerns, for example, are astronomy or the house fire, then ask the discussant to postpone that discussion.  
策略：其中一件事情是给出一个简短的等效表达定义（第12章），这个定义相对不具有信息性，但对于这种情况来说已经足够了：当我说月球的同一面总是面向地球是真实的时候，我只是指的大致上，毫无疑问。当你的主题是天文学时，你不需要讨论真理的哲学问题。与原因类似。如果你的主题是房屋的着火，你可以说，当我说短路导致了火灾时，我只是指短路引起了火灾。如果讨论者想要追究真理或原因的哲学问题，并且如果主要关注点，例如天文学或房屋火灾，那么请讨论者推迟那个讨论。

On the other hand, if someone requests a definition of a term that is crucial to your argument (for example, faces the earth and short circuit), then you should proceed to be as clear about it as you can. See Chapters 12 and 13.  
另一方面，如果有人要求对你的论点至关重要的术语进行定义（例如，面对地球和短路），那么你应该尽可能清楚地阐述。请参阅第12章和第13章。­ceed to be as clear about it as you can. See Chapters 12 and 13.

*The other person offers a definition embodying a position, sometimes undefended, and acceptance of the positional definition hurts your position. Strategy: The thing to do here is to ask why we should accept that definition (as with the freedom definition given earlier). Perhaps you might also offer an alternative definition—and defend it. See Chapter 13.  
另一个人提出了一个包含一个立场的定义，有时是没有辩护的，而接受这个立场的定义会损害你的立场。策略：在这种情况下，要问为什么我们应该接受那个定义（就像之前给出的自由的定义一样）。也许你还可以提供一个替代的定义，并为它辩护。参见第13章。*

*Tou are asked a hypothetical question: “What would you do if. . . It is often dangerous to give an answer to hypothetical questions because there are so many details about the hypothesized situation that you do not know. You have experienced that problem in doing some of the practice items in this book.  
你被问到一个假设性问题：如果……你会怎么做。回答假设性问题往往是危险的，因为关于假设情况的许多细节你并不了解。你在做这本书中的一些练习题时也遇到了这个问题。*­gerous to give an answer to hypothetical questions because there are so many details about the hypothesized situation that you do not know. You have experienced that problem in doing some of the practice items in this book.

Strategy: One way to answer the question is to point out that many things could be different, so you cannot be sure, but that you might do such and such. Another way is to clarify the question by asking for more details about the situation. A third way that is sometimes used is flatiy to refuse to answer the question, saying “That’s a hypothetical question.” This last strategy could work well with experienced people well-versed in the political process (such as newspaper reporters and judges), but some people will think that you are hiding something. So you must judge how to respond on the basis of your appraisal of the situation.  
策略：回答这个问题的一种方法是指出许多事情可能会不同，所以你不能确定，但你可能会这样做。另一种方法是通过询问更多关于情况的细节来澄清问题。有时候会使用的第三种方法是坚决拒绝回答问题，说这是一个假设性的问题。这种最后的策略在经验丰富的人士（如报纸记者和法官）中可能会很有效，但有些人会认为你在隐瞒某些东西。所以你必须根据对情况的评估来判断如何回应。

Presenting Your Own Position  
呈现您自己的立场

­sideration in presenting your own position is the avoidance of the problems men­tioned earlier. Now that you know them, I can give the general advice: Try to pre­sent your view in a way that minimizes the likelihood of legitimate challenges and questions. That is, try to be clear in your statement, giving definitions and examples where necessary, usually stating your thesis, your main point, at the beginning and at the end of your presentation. Define your terms, if necessary. Give your reasons, and avoid claiming more strength for your argument than it has. However, not all legiti­mate challenges and clarification questions can be avoided. Be resigned to that. It is often a good idea to admit difficulties in advance.I have postponed the discussion of presenting your own position because a main consideration in presenting your own position is the avoidance of the problems mentioned earlier. Now that you know them, I can give the general advice: Try to present your view in a way that minimizes the likelihood of legitimate challenges and questions. That is, try to be clear in your statement, giving definitions and examples where necessary, usually stating your thesis, your main point, at the beginning and at the end of your presentation. Define your terms, if necessary. Give your reasons, and avoid claiming more strength for your argument than it has. However, not all legitimate challenges and clarification questions can be avoided. Be resigned to that. It is often a good idea to admit difficulties in advance.  
我已经推迟了讨论提出自己的立场的问题，因为在提出自己的立场时，一个主要的考虑因素是避免之前提到的问题。现在你知道了这些问题，我可以给出一般的建议：尽量以一种减少合理质疑和问题可能性的方式来表达你的观点。也就是说，在陈述中要清晰明了，必要时给出定义和例子，通常在陈述的开始和结束处陈述你的论点，你的主要观点。如果需要的话，明确你的术语。给出你的理由，并避免夸大你的论证的力度。然而，并不是所有合理的质疑和澄清问题都能避免。要对此有所准备。提前承认困难通常是一个好主意。

­eral for making an oral presentation, although they must be adjusted for the situation (the amount of time available, the interests and background of your audience, etc.). However, giving concrete examples is almost always helpful.Chapters 1, 7-9 and 11-13 contain sections devoted to organizing and writing a position paper. These suggestions, together with those in this chapter, hold in general for making an oral presentation, although they must be adjusted for the situation (the amount of time available, the interests and background of your audience, etc.). However, giving concrete examples is almost always helpful.  
第1章、第7-9章和第11-13章包含了专门讨论组织和撰写立场论文的部分。这些建议与本章的建议一起，通常适用于进行口头演示，尽管它们必须根据情况进行调整（可用时间、受众的兴趣和背景等）。然而，提供具体的例子几乎总是有帮助的。

­ments from notes or comments on something everyone can see or hear. On the other hand, reading a paper enables you to say more in a specific period of time and to say exactly what you mean, so reading of papers is common in academic settings.Usually an oral presentation must be simpler than a written presentation, and most audiences (and speakers) do not understand, relate, or communicate well when a paper is read. Communication and rapport arc usually better when the speaker comments from notes or comments on something everyone can see or hear. On the other hand, reading a paper enables you to say more in a specific period of time and to say exactly what you mean, so reading of papers is common in academic settings.   
通常口头演讲必须比书面演讲简单，大多数听众（和演讲者）在读论文时无法理解、联系或进行良好的沟通。当演讲者从笔记中评论或评论每个人都能看到或听到的内容时，沟通和融洽通常会更好。另一方面，读论文使您能够在特定时间内说更多，并准确表达您的意思，因此在学术环境中很常见。

Large-Group Presentations  
大型团体演讲

­ple are around. If you are the principal presenter for A major difference among presentation situations is to be found in your role in the situation, which is related to how much time you have and to how many other people are around. If you are the principal presenter for a large audience, then you can make a major point and buttress it with assorted reasons, examples, perhaps graphics, and responses in advance to major challenges to your view. Try to satisfy the position-paper criteria listed in Chapter 1 (except possibly the one about headings).  
在演讲场合中，一个重要的区别在于你在场合中的角色，这与你拥有多少时间以及周围有多少其他人有关。如果你是一个大型观众的主要演讲者，那么你可以提出一个重要观点，并用各种理由、例子、可能的图形以及对你观点的主要挑战提前做出回应来支持它。尽量满足第1章列出的立场文件标准（可能除了标题方面的要求）。­ics, and responses

At the other extreme, if you are one member of a large audience making a point, you should probably try to limit yourself to one clear point. Give one or a few supporting reasons, repeating your point at the end of your presentation.  
在另一个极端，如果你是一个庞大观众中的一员，你应该尽量限制自己只提出一个明确的观点。给出一个或几个支持理由，在演讲结束时重复你的观点。

A danger in both situations is to wander around and introduce irrelevant ideas or ideas that are not clearly relevant to the audience. Ask yourself about each thing you say: “Is this relevant to the main point?” and “Am I showing how this is relevant to the main point?” To avoid wandering around, try to make your one point very simple, especially when you are in a large audience. It is amazing how often an audience participant fails to make clear the point he or she is trying to convey. When you are the presenter, start by making an assortment of notes to yourself, but then organize them into a coherent whole so that each part leads to the next. In either case, make sure that you summarize at the end.  
在这两种情况下，一个危险是四处闲逛并介绍与观众无关或不明确与观众相关的想法。问问自己每一句话：这与主要观点相关吗？我是否展示了这与主要观点的相关性？为了避免闲逛，尤其是在大型观众面前，尽量让你的一个观点非常简单。令人惊讶的是，观众参与者经常无法清楚地表达他或她试图传达的观点。当你是演讲者时，首先做一些笔记，然后将它们组织成一个连贯的整体，使每个部分都能引导到下一个部分。无论哪种情况，都要确保在最后进行总结。­­

Small-Group Presentations  
小组展示

On the other hand, in a small group (especially a group of two—you and one other), there is much more back-and-forth discussion, so you often do not need to summa­rize your point unless it is complicated. You can usually tell right away whether your point has been understood. Try to present things so that challenges and questions are avoided in advance, but again, you cannot avoid them all. There will always be legit­imate challenges and questions that can be offered. Respond to them in the ways I have suggested under “Responding.”

In a small group, there is more chance that the discussion will stray off the point. Be sure to keep the main point in mind, and do not be fooled into thinking that the main point has been proved—or disproved—just because some irrelevant point has been proved or disproved. All of the other advice given earlier in this chapter—for seeking clarification, challenging, and responding—hold in the small group situation.  
另一方面，在一个小组中（尤其是两个人的小组——你和另一个人），会有更多的来回讨论，所以除非问题很复杂，你通常不需要总结你的观点。你通常可以立刻知道你的观点是否被理解。尽量以一种避免提前出现挑战和问题的方式呈现事物，但是你无法完全避免它们。总会有一些合理的挑战和问题可以提出。根据我在回应部分提出的建议来回应它们。在一个小组中，讨论会更容易偏离主题。请务必记住主要观点，并不要被误导以为主要观点已经被证明或被证伪，只因为一些无关的观点已经被证明或被证伪。本章前面给出的所有其他建议——寻求澄清、提出挑战和回应——在小组情况下同样适用。­

Discussion in a small group is good practice for discussion in a larger group. Take advantage of your opportunities for such practice, and think about the process.  
在小组讨论中进行讨论是在大组中进行讨论的良好实践。利用你的机会进行这样的实践，并思考这个过程。

Check-Up 14D

True or False?  
真或假？

If false, change it to make it true. Try to do so in a way that shows that you understand.  
如果为假，则将其改为真。尝试以一种能显示你理解的方式来做。

**14:27 Only rarely should you restate another person’s question because it is the other person’s responsibility to state it clearly in the first place.   
14:27 只有在极少数情况下，您应该重述另一个人的问题，因为首先应该由对方清楚地陈述。**

**14:28 When offering a challenge in a large group, it is usually best to offer as many as you can think of at the same time because you might not get another chance.  
14:28 当在一个大群体中提出挑战时，通常最好一次性提供尽可能多的挑战，因为你可能不会再有机会。**

**14:29 If you cannot remember the source of your information when asked, it is usually best to withdraw your claim.  
14:29 如果被问到时无法记起信息的来源，通常最好撤回你的声明。**

**14:30 When giving a definition on demand, the equivalent-expression form accompanied by roughly spea-king is usually safer than the classification form.  
14:30 当按要求给出定义时，伴随着大致说法的等价表达形式通常比分类形式更安全。**

**14:31 In dealing with a question with a false presupposition, it is better to reject the presupposition rather than give a negative answer to the question.  
在处理一个带有错误前提的问题时，最好是拒绝这个前提，而不是对问题给出否定的答案。**

**14:32 A person committing the straw-person fallacy misrepresents a position in a way that makes it appear weaker and more vulnerable to attack.  
14:32 一个犯了草人谬误的人以一种使其看起来更加脆弱易攻击的方式歪曲了一个立场。**

**14:33 Attributing an unneeded false assumption to a position is an example of the straw-person fallacy.  
14:33 将一个不必要的错误假设归因于一个立场是稻草人谬误的一个例子。**

**14:34 Personal-attack arguments are sometimes appropriate and sometimes inappropriate.  
14:34 人身攻击的论点有时是适当的，有时是不适当的。**

**14:35 Circular arguments are fallacious.  
14:35 循环论证是谬误。**

**14:36 Analogical arguments tend to be stronger if they are used to refute a position than if used to support one.  
14:36 类比论证如果用于反驳一个立场，往往比用于支持一个立场更有说服力。**

**14:37 Because hypothetical questions are usually so simple, it is usually best to give a quick straightforward answer to them.  
14:37 因为假设性问题通常很简单，所以最好给出一个快速直接的答案。**

**14:38 When making a presentation, it is generally a good idea to summarize.  
14:38 在进行演讲时，总的来说，总结是一个好主意。**

Discussion Practice  
讨论实践

**14:39 Find a partner. Select one of the arguments in Items 14:12-14:14, or somewhere else in this book, that you have not yet used for practice. One of you adopt the argument first. The other should then offer challenges one by one that invite each of the sixteen types of responses discussed in this section. Give the appropriate response. Exchange roles after the first eight. Do them one at a time, and discuss each before going on to the next. Write out answers to the following questions:  
14:39 寻找一个伙伴。选择14:12-14:14中的一个论点，或者本书其他地方的一个你还没有用于练习的论点。其中一个人先采纳这个论点。然后另一个人应该逐个提出挑战，邀请这节中讨论的十六种回应类型的每一种。给出适当的回应。在前八个之后交换角色。一次只做一个，然后讨论每个问题，再继续下一个。写出以下问题的答案：**­lenges one by one that invite each of the sixteen types of responses dis­cussed in this section. Give the appropriate response. Exchange roles after the first eight. Do them one at a time, and discuss each before going on to the next. Write out answers to the following questions:

1. Which argument(s) did you choose? Describe the situations you have imagined.  
   你选择了哪个（些）论点？描述一下你所想象的情境。
2. What response types seemed most useful? Why?  
   什么类型的回应似乎最有用？为什么？
3. What response types seemed least useful? Why?  
   哪种响应类型似乎最没有用？为什么？

**14:40 Do the same thing for a new argument from a newspaper editorial page, a magazine article, a talk show, a debate, a discussion with a friend, or a meeting you attended. Try to find an argument about an issue about which you and your partner disagree.  
14:40 对于一篇来自报纸社论页面、杂志文章、脱口秀、辩论、与朋友的讨论或你参加的会议的新论点，做同样的事情。试着找到一个你和你的伙伴意见不一致的问题的论点。**

Summary  
摘要

1 his chapter began with advice for conducting the overview in FRISCO. It empha­sized the interdependence of the parts and suggested the successive application of

standards for credibility, observation, value judging, deduction, loose derivation, and induction (both generalization and best-explanation). It suggested caution, looking at things from others’ points of view, and awareness of one’s own deep assumptions.  
本章以在FRISCO中进行概述的建议开始。它强调了各个部分之间的相互依赖，并建议按照可信度、观察、价值判断、演绎、松散推导和归纳（包括概括和最佳解释）的标准进行连续应用。它建议谨慎行事，从他人的角度看问题，并意识到自己的深层假设。

­wise disposed as suggested in the list of critical thinking dispositions.In the section on discussion strategies, you received three general pieces of advice: Practice, keep track of many things at once, and be open-minded and otherwise disposed as suggested in the list of critical thinking dispositions.  
在讨论策略部分，你得到了三个一般性的建议：练习，同时注意多个事物，以及保持开放的心态和其他在批判性思维倾向列表中建议的态度。

You saw examples of the following specific kinds of questions of clarification: main point, reason-seeking, connection-seeking, word-meaning-seeking, and significance-seeking. You also saw three general types of clarification questions: “Why?,” “What do you mean?,” and “Would you say more about that?”

­terexample, inconsistency, dubious reasons or evidence, weak source, false or dubious assumption, Iou saw a number of types of challenges to a position, including these: counterexample, inconsistency, dubious reasons or evidence, weak source, false or dubious assumption, circular argument, change in the subject, insufficient reason (for a variety of possible reasons: plausible alternative explanation, undefended positional definition, overgeneralization, oversimplification, emotional language without sufficient reason, faulty analogy, neglect of a point of view, and an apparent failure to follow), and equivocation.  
您看到了以下几种澄清问题的示例：主要观点、寻求原因、寻求联系、寻求词义和寻求重要性。您还看到了三种常见的澄清问题类型：为什么？你是什么意思？你能多说一些吗？您看到了对一个立场的多种挑战类型，包括：反例、不一致、可疑的理由或证据、来源薄弱、虚假或可疑的假设、循环论证、主题变化、不充分的理由（可能有多种原因：合理的替代解释、未经辩护的立场定义、过度概括、过度简化、情感语言缺乏充分理由、错误类比、忽视某种观点和明显的违背），以及模棱两可。­ety of ­nition,

You saw numerous strategies for responding to challenges, including restating the question, dealing with questions one at a time, summarizing your answer, admitting weaknesses in your memory but promising to try to supply the requested information, defining your terms, dealing with analogical arguments, denying false presuppositions embedded in the challenge, challenging the claim that the alleged assumption is needed, rejecting false descriptions of your position, keeping the discussion on the subject, asking for the relevance of a point, requesting an example, responding to a request for an unneeded definition, challenging undefended positional definitions, and rejecting hypothetical questions sometimes. You can add more, if vou like, but these cover most of the common situations arising where the assumed standard is rational discussion, and where the major concern is whether the conclusion is justified.  
你看到了许多应对挑战的策略，包括重述问题，逐个回答问题，总结你的答案，承认记忆中的弱点但承诺尽力提供所需信息，定义术语，处理类比论证，否认挑战中嵌入的错误前提，质疑所谓的假设是必需的，拒绝对你立场的错误描述，将讨论保持在主题上，要求一个观点的相关性，请求一个例子，回应对不需要的定义的要求，质疑未被辩护的立场定义，并有时拒绝假设性问题。如果你愿意，你可以添加更多，但这些涵盖了大部分常见情况，其中假定的标准是理性讨论，主要关注的是结论是否合理。­ting ­­­­­

Presenting your own position was discussed last because so much of it depends on foreseeing the kinds of challenges and questions of clarification presented earlier. Planning the presentation of your position can involve the quick scribbling down of some ideas, organizing them, and cutting them down to fit the situation. If there is a large group meeting in which you have no special place in the discussion, and others are anxious to join the discussion, it is often wise to limit yourself to one well- developed point. In any case, it is usually a good idea to state your thesis at both the beginning and end of your argument.  
将自己的立场呈现出来是最后讨论的，因为很大程度上它取决于预见到先前提出的挑战和澄清问题的种类。规划你的立场陈述可以包括快速写下一些想法，组织它们，并将它们简化以适应情况。如果有一个大型团体会议，你在讨论中没有特殊的地位，而其他人急于加入讨论，通常明智的做法是限制自己只提出一个充分发展的观点。无论如何，通常在你的论证开始和结束时都明确陈述你的论点是一个好主意。­

In a small group discussion, there is more chance for straying from the main point, but in any case, all of the previous pieces of advice for questioning, challenging, and responding hold.  
在小组讨论中，有更多的机会偏离主要观点，但无论如何，所有关于提问、质疑和回应的先前建议仍然适用。­

Suggested Answers for Chapter 14  
第14章的建议答案

**Check-Up 14A**

**14:1 F 14:2 F 14:3 T 14:4 F 14:5 T 14:6 T**

**14:7 T 14:8 T 14:9 F 14:10 F 14:11 T**

**14:1 Inductively valid arguments are good arguments, even if they are deductively invalid.  
14:1 归纳有效的论证是好的论证，即使它们在演绎上无效。**

**14:2 Even if a reason is false, an argument might be strong enough to be a good one—without the reason.  
即使一个理由是错误的，一个论点可能足够强大，成为一个好的论据-即使没有理由。**

**14:4 After the conclusion is identified, the situation is still of interest in judging the meaning of the terms, in judging whether something should count as an exception, in deciding what standard of proof to use, etc.  
14:4 结论确定后，仍然需要对术语的含义进行判断，判断某事是否应该被视为例外，决定使用何种证明标准等，这些情况仍然具有兴趣。**

**14:9 Change only at the end of to throughout.  
14:9 只在最后进行更改为贯穿全文。**

**14:10 Change independent to interdependent.  
14:10 将独立改为相互依赖。**

**14:12-14:14 These are up to you. Keep practicing.  
这取决于你。继续练习。**

Check-Up 14B

**14:15-14:19 These are up to you. Keep practicing.  
14:15-14:19 这些由你决定。继续练习。**

**Check-Up 14C**

14:20 F 14:21 T 14:22 T 14:23 T 14:24 F

**14:20 Challenging a position often results in valuable clarification.  
14:20 挑战一个立场通常会导致有价值的澄清。**

**14:24 Some fallacy labels do not imply that a mistake has been made.  
14:24 一些谬误标签并不意味着犯了错误。**

**14:25-14:26 These are up to you. Keep practicing.  
14:25-14:26 这些由你决定。继续练习。**

**Check-Up 14D**

**14:27 F 14:28 F 14:29 F 14:30 T 14:31 T**

**14:32 T 14:33 T 14:34 T 14:35 T 14:36 T**

14:37 F 14:38 T

**14:27 You often should restate the question; otherwise, if the question is not clear, the others will not understand it, and you might not understand it yourself.  
14:27 你经常应该重新陈述问题；否则，如果问题不清楚，其他人将无法理解，而你自己也可能无法理解。**

**14:28 In a large-group situation, it is usually best to limit yourself to one challenge at a time.  
14:28 在大群体环境中，通常最好一次只处理一个挑战。**

**14:29 In such a situation, it is usually best to give yourself time to think more about it, perhaps to look it up.  
在这种情况下，通常最好给自己一些时间来更多地思考，或许查一下。**

**14:37 Beware of hypothetical questions; it is usually best to answer them, but with qualifications that protect you against unsuspected changes in the situation.  
14:37 小心假设性问题；通常最好回答它们，但要有保护自己免受意想不到的情况变化的限定条件。**

**14:39-14:40 These are up to you. Remember to think about your challenges and responses and to continue to practice.  
这些由你决定。记得要思考你的挑战和回应，并继续练习。**

You Have Reached the End of This Book  
你已经到达了这本书的结尾

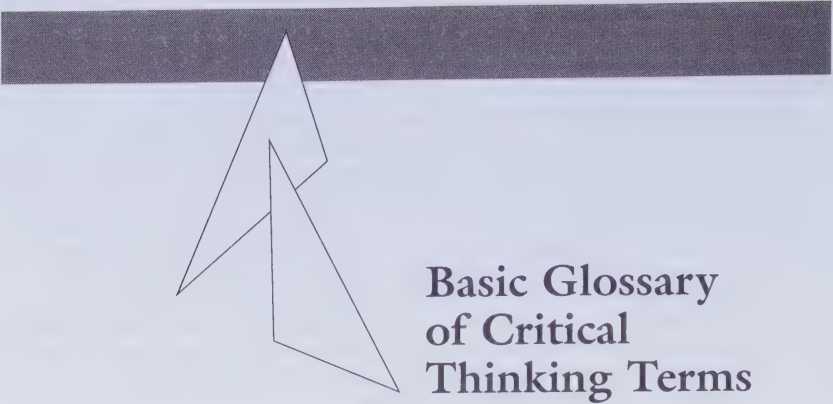
This book has not given you a mechanical formula for critical thinking because there is none. After you have followed all the advice contained herein, you must still use your own good judgment. I wish you success. Remember to practice, practice, and practice some more, consciously employing the critical thinking dispositions listed in this chapter. Please go back and look at them now.   
这本书没有给你提供一个机械的批判性思维公式，因为根本就没有。在你遵循了本书中的所有建议之后，你仍然必须依靠自己的良好判断力。祝你成功。请记得要不断练习，并有意识地运用本章列出的批判性思维倾向。现在请回过头来再看一下它们。

Epilogue  
尾声

­mously voted her not guilty of murder because we felt that the pathologist’s moder­ate force conclusion showed that the state had not proven beyond a reasonable doubt the complicated second condition for murder. (The conditions for murder given us are listed in Chapter 7, Check-Up Item 7:8.) But we unanimously voted her guilty of voluntary manslaughter because we felt that the state had proven beyond a rea­sonable doubt all four conditions for voluntary manslaughter (listed in Chapter 7, Example 7:1).In case it is not clear how the trial turned out, here is a quick summary: We unanimously voted her not guilty of murder because we felt that the pathologist’s moderate force conclusion showed that the state had not proven beyond a reasonable doubt the complicated second condition for murder. (The conditions for murder given us are listed in Chapter 7, Check-Up Item 7:8.) But we unanimously voted her guilty of voluntary manslaughter because we felt that the state had proven beyond a reasonable doubt all four conditions for voluntary manslaughter (listed in Chapter 7, Example 7:1).  
如果审判结果不清楚的话，这里有一个快速总结：我们一致投票认为她在谋杀罪上无罪，因为我们认为病理学家的适度武力结论表明国家没有以合理的怀疑程度证明复杂的谋杀第二条件。（我们所给出的谋杀条件列在第7章，检查项目7:8中。）但是，我们一致投票认为她在自愿杀人罪上有罪，因为我们认为国家以合理的怀疑程度证明了自愿杀人罪的所有四个条件（列在第7章，示例7:1中）。

Most of the discussion about voluntary manslaughter concerned the meaning of proven beyond a reasonable doubt and the question of whether the fourth condition for voluntary manslaughter had been proven beyond a reasonable doubt. This condition was that the defendant was not justified in using the force she used. Because we felt that she had a nonviolent alternative (escaping to her parents’ room), we felt that it was proven beyond a reasonable doubt that she was not justified in using the force she used. In discussions of this trial since then, some people have held that the jurors made a faulty assumption. It is that a woman who is physically threatened by a man should pursue a nonviolent solution, if it is available. What do you think? How would vou have voted? Why? Your answer is an argument. Apply FRISCO to it!  
大部分关于故意杀人的讨论涉及到“合理怀疑之外的证明”和关于是否已经合理怀疑地证明了故意杀人的第四个条件的问题。这个条件是被告在使用她所使用的武力时没有合理的理由。因为我们觉得她有一个非暴力的选择（逃到她父母的房间），我们觉得已经合理怀疑地证明了她在使用武力时没有合理的理由。在此之后对这个审判的讨论中，有些人认为陪审团做出了错误的假设。这个假设是，如果一个女人受到男人的身体威胁，她应该选择一个非暴力的解决方案，如果有的话。你怎么想？你会怎么投票？为什么？你的答案是一个论点。用FRISCO方法来应用它！­dition was that the defendant was not justified in using the force she used. Because we felt that she had a nonviolent alternative (escaping to her parents’ room), we felt that it was proven beyond a reasonable doubt that she was not justified in using the force she used. In discussions of this trial since then, some people have held that the jurors made a faulty assumption. It is that a woman who is physically threatened by a man should pursue a nonviolent solution, if it is available. What do you think? How would vou have voted? Why? Your answer is an argument. Apply FRISCO to it!

Can vou think of any other assumptions we made in concluding that she was not justified in using the force she used? Are they justified? Apply FRISCO.  
你能想到我们在得出她不正当使用武力的结论时所做的其他任何假设吗？它们是否合理？应用FRISCO。



A few of these terms are embedded in a larger framework with which you might not yet be familiar, so if you do not understand a definition here, look up the term in the index and go to the section where it is discussed.  
这些术语中的一些嵌入在一个较大的框架中，您可能还不熟悉，所以如果您不理解这里的定义，请在索引中查找该术语，并转到讨论该术语的部分。

**Affirming the antecedent is the step in a deductive argument from the affirmation of the antecedent to the affirmation of the consequent. Affirming the antecedent is a deductively valid move.  
肯定前提是从肯定前提到肯定后果的演绎论证中的一步。肯定前提是一种演绎上有效的推理。**­tively valid move.

**Affirming the consequent is the step in a deductive argument from the affirmation of the consequent to the affirmation of the antecedent. Affirming the consequent is a deductively invalid move.  
肯定后果**­tively invalid move.

**Analogical reasoning is reasoning in which a person infers that two things are alike in some respect from the fact that they are alike in at least one other respect. Not all reasoning by analogy is fallacious. Reasoning by faulty analogy is of course fallacious.  
类比推理是一种人们通过两个事物在某一方面的相似性来推断它们在至少另一方面也相似的推理。并非所有的类比推理都是谬误的。当然，错误类比的推理是谬误的。**­soning by analogy is fallacious. Reasoning

The antecedent of a conditional proposition is the part introduced by the word if  
条件命题的前件是由if引入的部分

An appeal to authority is a move in an argument that in effect says that because the authority says that something is so, it is so. Appeal to authority is one of the fallacy labels. Whether appealing to an authority is actually a fallacy depends on whether the alleged authority is actually an authority on the matter at hand. In a research paper, citation of a source in order to establish a point made by the source is one type of appeal to authority, often not fallacious.  
对权威的呼吁是一种在论证中使用的手法，其实际上是在说，因为权威说某件事是这样，所以它就是这样。对权威的呼吁是谬误标签之一。是否呼吁权威实际上是谬误取决于所谓的权威是否真正是该问题的权威。在研究论文中，引用来源以确立来源所提出的观点是一种对权威的呼吁，通常不是谬误。

**An arbitrary stipulative definition is one that is to be judged only by the convenience it affords. It does not incorporate a substantive position on an issue, nor imply that the stipulative definition conforms to current usage of the term.  
任意规定性定义是仅根据其方便性来判断的定义。它不包含对问题的实质性立场，也不意味着规定性定义符合该术语的当前用法。**

An argument is an attempt to support a conclusion by giving reasons for it.  
一个论点是通过提供支持它的理由来支持结论的尝试。

An **assumption** is a proposition that is taken for granted in a situation and that backs up a conclusion. (In this book, the word *assumption* is used in this way. However, in every­day English, the word *assumption* is often also used as a label for propositions judged dubious, and is sometimes used to refer to a conclusion that is not fully established.)

**Best-explanation reasoning is reasoning that is to be judged by the ability of its conclusion to best explain the tacts. The conclusion must avoid being inconsistent with the facts, all of its competitors should be inconsistent with the facts, and it should be plausible.  
假设是在某种情况下被默认为真的命题，用以支持一个结论。（在本书中，假设一词是以这种方式使用的。然而，在日常英语中，假设一词通常也用作对被怀疑的命题的标签，并且有时用于指称尚未完全确立的结论。）最佳解释推理是根据其结论最能解释事实的能力来判断的推理。结论必须避免与事实相矛盾，所有竞争者都应与事实相矛盾，并且它应该是合理的。**

**Circularity. To reason so that you end up concluding something you assumed at the outset is to commit the fallacy of circularity, or to engage in circular reasoning. A circular definition is one that fails to communicate because it uses the term being defined to define itself. Circularity, circular reasoning, and circular definition are fallacy labels. Basically, to say that something is circular is to say that it gets nowhere because it repeats itself.  
循环性。以一开始就假设的东西作为结论来推理，就是犯了循环谬误，或者进行了循环推理。循环定义是一种无法传达的定义，因为它使用被定义的术语来定义自身。循环性、循环推理和循环定义都是谬误的标签。基本上，说某事是循环的意思就是说它没有进展，因为它重复自己。**

**A classification definition is one that provides a general class and distinguishing features, with the intention that just the things that are in the general class and have the distinguishing features are appropriately labeled by the term being defined.  
分类定义是提供一个一般类别和区分特征的定义，其意图是只有属于该一般类别并具有区分特征的事物才能适当地被定义术语标记。**­

**Class logic is the type of deductive logic concerned with the relationships among classes and with individuals.  
类逻辑是一种关注类别之间关系和个体的演绎逻辑类型。**

**A conclusion is a proposition that someone is trying to justify or prove in a given situation.  
结论是在特定情况下某人试图证明或证明的命题。**

**A conditional proposition is one consisting of two other supposedly related propositions, one of which is introduced by the word if or some similar term. If Ben is a cat, then Ben is an animal is a conditional proposition.  
一个条件命题由两个其他据称相关的命题组成，其中一个由if或类似的词引入。如果Ben是一只猫，那么Ben就是一只动物是一个条件命题。**

The consequent of a conditional proposition is the part introduced (or introducible) by the word then.  
条件命题的结果是由词then引入（或可引入）的部分。

**Contraposition is the exchanging of the antecedent and consequent in a conditional proposition while also negating both the antecedent and consequent. Contraposition is a deductively valid move.  
对置是在条件命题中交换前件和后件，并且否定前件和后件。对置是一种演绎有效的操作。**

**A control group in an experiment is the group in which a change is not introduced so as to serve as a basis for comparison with the experimental group.  
实验中的对照组是不引入任何变化的组，以便与实验组进行比较。**

**Conversion is the exchanging of the antecedent and consequent in a conditional proposition. Conversion is a deductively invalid move.  
转换是在条件命题中交换前件和后件。转换是一种无效的推理步骤。**­

**A counterexample is a case that counts against some proposition, usually either a generalization, hypothesis, or definition.  
反例是指反对某个命题的情况，通常是针对一般化、假设或定义的情况。**­

The credibility of a source for a given statement is the degree to which that source deserves to be believed in the making of that statement.   
给定的文本是："The credibility of a source for a given statement is the degree to which that source deserves to be believed in the making of that statement." 翻译后的文本是："给定陈述的来源的可信度是该来源在做出该陈述时应该被相信的程度。"

**Critical thinking is reasonable reflective thinking that is focused on deciding what to believe or do.  
批判性思维是一种合理的反思性思维，其重点是决定要相信或做什么。**

**Deduction is reasoning in which the conclusion is supposed to follow necessarily from the reasons. .  
演绎是一种推理，其中结论被认为必然从原因中得出。** .

**Deductive validity.** To say that an argument is *deductively valid* is to say that the conclu­sion follows necessarily from the reasons offered. It is not to say that the conclusion is true. (Logicians and philosophers generally use *validity* as a technical term to refer to deductive validity, but that is not done in this book in order to stay close to natural language. See also *validity.)*

**A definition is an attempt to state the meaning of a word.  
演绎有效性。说一个论证是演绎有效的意思是说结论必然地从所提供的理由中得出。这并不意味着结论是真实的。（逻辑学家和哲学家通常使用有效性作为一个技术术语来指代演绎有效性，但本书为了保持与自然语言的接近而不这样做。另请参阅有效性。）定义是试图陈述一个词的意义。**

**Denying the antecedent is the step in a deductive argument starting from a denial of the antecedent, and concluding with the denial of the consequent. Denying the antecedent is a deductively invalid move.  
否认前提是从否认前提开始的演绎论证步骤，并以否认结论结束。否认前提是一个演绎无效的举动。**

**Denying the consequent is the step in a deductive argument starting from the denial of the consequent, and concluding with the denial of the antecedent. Denying the consequent is a deductively valid move.  
否定后果"是从否定后果开始的演绎论证步骤，最终得出否定前提的结论。"否定后果**­quent is a deductively valid move.

A dependent variable is one that an experimenter observes, in order to learn the effects of the manipulation of another variable, the independent variable.  
一个因变量是实验者观察的变量，以便了解另一个变量，即自变量的操纵对其产生的影响。

*Either-or reasoning. To assume that there are only two alternatives is to engage in either- or reasoning. Sometimes it is fallacious, depending on whether there really are only two alternatives. Either-or reasoning is a fallacy label.  
要么-要么的推理。假设只有两种选择是从事要么-要么的推理。有时这是谬误的，这取决于是否真的只有两种选择。要么-要么的推理是一个谬误标签。*

An **equivalent-expression definition** is one that puts a term in a larger expression and equates that larger expression with another expression. (The definitions of *deductively valid, either-or reasoning, equivocate, proposition, random assignment,* and *valid* are equivalent-expression definitions.)

To equivocate is to shift word meanings in midargument, and to exploit the shift in reaching a conclusion. Equivocation is a fallacy label, and is by definition fallacious.  
等价表达定义是将一个术语放在一个更大的表达式中，并将该更大的表达式与另一个表达式相等。（演绎有效、二选一推理、模棱两可、命题、随机分配和有效的定义都是等价表达定义。）模棱两可是指在辩论中改变词义，并利用这种变化来得出结论。模棱两可是一个谬误标签，并且根据定义是谬误的。­ing a conclusion.

An experiment is an attempt to discover something by deliberately introducing a change in a situation and observing to see what happens.  
实验是通过有意引入一种变化来尝试发现某事，并观察其结果的行为。

An experimental group (to be contrasted with a control group) is the one in an experiment in (or for) which a change is introduced to see whether and how the group is affected.  
实验组（与对照组相对比）是实验中的一个组，通过引入变化来观察该组是否受到影响以及如何受到影响。­ment in (or for) which a change is introduced to see whether and how the group is affected.

A fact is a proposition that is true.  
一个事实是一个真实的命题。

The fact-opinion distinction is a distinction that divides all beliefs into two groups: facts and opinions. The distinction is often misleading because it combines and confuses the distinctions between factual statements and value statements, observation statements and conclusions, and things well-established and not well-established. The distinction among fact, opinion, and reasoned judgment is preferable, though it neglects the distinction between fact and factual.   
事实与观点的区别是将所有信念分为两组：事实和观点。这种区别常常具有误导性，因为它混淆了事实陈述和价值陈述、观察陈述和结论、以及已经确立和未确立的区别。事实、观点和理性判断之间的区别更可取，尽管它忽略了事实和实际的区别。­ments and conclusions, and things well-established and not well-established. The dis­tinction among

**Fallacious thinking is thinking that contains an error of some significance.  
错误思维是包含某种重要错误的思维。**

**Fallacy labels are terms used to identify fallacious thinking, although not all thinking appropriately labeled by each of these terms is fallacious. Fallacy labels defined in this glossary include appeal to authority, circularity, either—or, equivocation, faulty analogy, gambler’s fallacy, glittering generality, impact equivocation, namecalling, non sequitur, personal attack, overgeneralization, post hoc, straw person, streak theory, testimonial and transfer.  
谬误标签是用来识别谬误思维的术语，尽管并非所有被这些术语标记的思维都是谬误的。在这个词汇表中定义的谬误标签包括权威诉诸、循环论证、非此即彼、模棱两可、错误类比、赌徒谬误、华而不实的普遍性、影响模棱两可、人身攻击、无关因果、过度概括、事后归因、草人论证、连续理论、证词和转移。**

**FRISCO is a methodical approach to developing, formulating, and checking a conclusion and reasoning. The letters stand for Focus, Reasons, Inference, Situation, Clarity, and Overview.  
FRISCO是一种系统的方法，用于开发、制定和检查结论和推理。这些字母代表着焦点、理由、推论、情况、清晰度和概述。**

The gambler’s fallacy is the error of thinking that the similarity of a series of events increases the likelihood that a different type of event will appear next. For example, “I have had a series of bad hands, so I am due for a good hand (at cards).” Gambler’s fallacy is a fallacy label, and examples are fallacious when they deal with honest decks of cards, dice, and lotteries.  
赌徒谬误是一种错误的思维方式，即认为一系列事件的相似性会增加下一个不同类型事件发生的可能性。例如，我已经连续抽到了一系列糟糕的牌，所以我应该会得到一手好牌（在玩牌时）。赌徒谬误是一个谬误的标签，当它们涉及诚实的牌组、骰子和彩票时，这些例子都是谬误的。

**A generalization is a proposition to the effect that a number of things have something in common.  
一般化是一个命题，它表明一些事物具有共同点。**

**A glittering generality is a laudatory term offered without backing or support. Glittering generality is a fallacy label, though the use of a glittering generality is not always fallacious.  
闪亮的普遍性**

**Hearsay is the type of testimony that reports what someone else said, and that is offered in support of the truth of what the other said.  
传闻是一种证词，它报告了别人说的话，并以支持其他人所说的事实为目的。**

**A hypothesis is a proposition that, in a given situation, is subject to test.  
假设是在特定情况下可以进行测试的命题。**

**Impact equivocation is an unintentional shifting of word meanings in such a way that it has the impact of equivocation in an argument.  
影响模棱两可是一种无意中改变词义的方式，以至于在论证中产生了模棱两可的影响。**

An independent variable is one that the experimenter manipulates in a situation in order to see whether and how it affects another variable, the dependent variable.  
独立变量是实验者在一种情境中操纵的变量，以观察它是否以及如何影响另一个变量，即因变量。

**Induction is reasoning that is either generalizing or best-explanation reasoning (or both).  
归纳是一种既可以是归纳推理又可以是最佳解释推理（或两者兼有）的推理方式。**

To **infer** is to reason from some propositions) to another, that is, to draw a conclusion on the basis of reasons. Inference is thus a process. (Sometimes, though not in this book, the word *inference* is used as a label for the result of this process, that is, as a label for **a conclusion.)**

**Namecalling is the use of a pejorative term without backing or support. Namecalling is a fallacy label, although calling something by a bad name without offering support is not always fallacious.  
推理是从某些命题推理到另一些命题的过程，也就是基于理由得出结论的过程。因此，推理是一个过程。（有时，尽管不在本书中，词语“推理”被用作这个过程的结果的标签，也就是作为一个结论的标签。）名字叫是在没有支持或支持的情况下使用贬义词语。名字叫是一个谬误标签，尽管在没有提供支持的情况下用坏名字称呼某事并不总是谬误。**

**A non sequitur is an inference in which the conclusion fails to follow. Non sequitur is a fallacy label. Non sequitur inferences are by definition fallacious (assuming the everyday sense of follow).  
非因果关系"是一种推理，其中结论无法得出。"非因果关系"是一个谬误标签。根据定义，"非因果关系"的推理是谬误的（假设按照日常意义上的"follow**­lacy label. Non sequitur inferences are by definition fallacious (assuming the everyday

To observe is to notice or perceive something (contrasted with infer).   
观察是注意或察觉某事（与推断相对）。

An overgeneralization is a generalization that goes beyond the data without justification. Overgeneralization is a fallacy label and overgeneralization is by definition fallacious.  
过度概括是在没有理由的情况下超越数据的概括。过度概括是一个谬误标签，根据定义是谬误的。

**A personal attack argument is one in which the arguer tries to discredit a position on the basis of an attack on the person offering the position. This move is sometimes called argumentum ad homιnem. Personal attack argument is a fallacy label, although not all personal attack arguments are fallacious. For example, challenging the credibility of a witness, though often amounting to a personal attack, is often appropriate.  
个人攻击论证是指辩论者试图通过攻击提出该立场的人来贬低该立场的论证。这种做法有时被称为人身攻击论证。个人攻击论证是一个谬误标签，尽管并非所有的个人攻击论证都是谬误的。例如，质疑证人的可信度，虽然常常被视为个人攻击，但通常是合适的。**

A persuasive definition is a positional definition offered in an attempt to persuade someone to accept a position underlying the definition.  
说服性定义是一种在试图说服某人接受定义基础的立场性定义。­one to accept a position underlying the definition.

**A positional definition is one that incorporates a position on an issue.  
一个位置定义是指将一个观点的立场纳入其中。**

**Post hoc reasoning is reasoning to the conclusion that one thing caused another, simply because the first thing occurred before the other did. The term comes from the Latin post hoc, ergo propter hoc, which means After this, therefore because of it. Post hoc reasoning is a fallacy label, and all post hoc reasoning is fallacious. Some reasoning may appear to be post hoc, but is not, because factors other than the time sequence are implicitly taken into account.  
事后推理是指因为某事先于另一事发生，就简单地得出一个事物导致了另一个事物的结论。这个术语来自拉丁语的“post hoc, ergo propter hoc”，意思是“在此之后，因此因为它”。事后推理是一个谬误标签，所有的事后推理都是谬误的。有些推理可能看起来是事后推理，但实际上并不是，因为除了时间顺序之外，还隐含地考虑了其他因素。***­ing*

A presupposition is a proposition that must be true in order that another proposition make sense in a situation. It is one kind of assumption.  
预设条件是在某种情况下，为了使另一个命题有意义而必须为真的命题。它是一种假设的一种。

**Proposition. Roughly speaking, to call a set of words a proposition is to say that they express a complete thought, can meaningfully stand alone, and consist of a subject and predicate.  
命题。粗略地说，将一组词称为命题意味着它们表达了一个完整的思想，可以独立有意义地存在，并且由主语和谓语组成。**

**Propositional logic is the type of deductive logic concerned with the relationships between propositions connected by or attached to such terms as if, then, or, and, and not.  
命题逻辑是一种演绎逻辑类型，涉及由诸如如果、那么、或、与、非等术语连接或附属的命题之间的关系。**

Random assignment to experimental and control groups is an assignment such that each member has an equal chance of being in either group.  
随机分配给实验组和对照组的分配是这样的，每个成员都有相等的机会进入任一组。

**Random sampling is sampling such that each member of the sampled population has the same chance of being selected as any other member.  
随机抽样是一种抽样方法，使得被抽样群体中的每个成员被选中的机会都相同。**

A range definition is one that makes the vagueness of a term explicit, and still provides equality between the term and its definition.  
范围定义是将一个术语的模糊性明确化，并且仍然提供该术语与其定义之间的相等关系。

**A reason is a proposition that is offered in support of a conclusion.  
一个理由是为了支持结论而提出的命题。**

**Relativism is, in its simplest form, the position that what is justified, true, or good justifiably varies with the background beliefs or framework of the person doing the judging. There are several varieties of relativism. See Chapter 11 for some.  
相对主义是以其最简形式，认为所证明、真实或善良的事物在评判者的背景信念或框架下是有合理变化的立场。有几种相对主义的变种。请参阅第11章了解一些。**­ably varies with the background beliefs or framework of the person doing the judging. There are several varieties of relativism. See Chapter 11 for some.

**A reported definition is one that is intended to report usage accurately.  
一个报告的定义是指旨在准确报告使用情况的定义。**

A straw person argument is one in which a position is significantly misdescribed and the misdescribed position is challenged. Straw person is a fallacy label, and straw person arguments are by definition fallacious.  
稻草人论证是一种将一个立场严重错误描述并对这个错误描述的立场进行质疑的论证。稻草人是一个谬误标签，而稻草人论证在定义上是谬误的。

The streak theory is the view that the similarity of a series of events makes it more likely that the next one will be similar. Streak theory is a fallacy label, but not all examples are fallacious. They are fallacious when they deal with honest decks of cards, dice, and lotteries.  
连胜理论是一种观点，认为一系列事件的相似性使得下一个事件更有可能是相似的。连胜理论是一个谬误标签，但并非所有的例子都是谬误的。当它们涉及诚实的纸牌、骰子和彩票时，它们是谬误的。

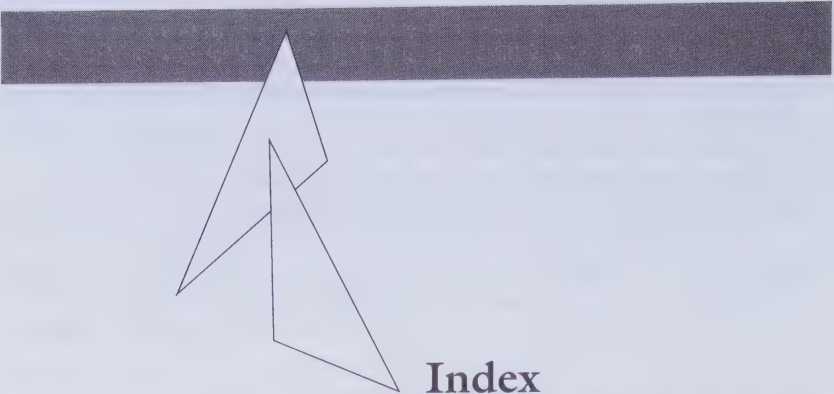
**Testimonial is the attempt to support a position on the basis of testimony in its favor. Testimonial is a fallacy label, but not all testimonials are fallacious.  
证言是试图基于有利证词来支持立场的行为。证言是一个谬误标签，但并非所有的证言都是谬误的。**

**Transfer is the accepting of a person’s claim in one area because the person is an expert in another area. Transfer is a fallacy label, and examples are usually fallacious.  
转移"是因为一个人在另一个领域是专家而接受其在某一领域的主张。"转移**

**Validity. To say that an argument (or statement) is valid (in the everyday sense of the term valid} is to say that the argument is conclusive (or that the statement is true).  
有效性。说一个论证（或陈述）是有效的（在日常意义上的有效）是指该论证是有决定性的（或该陈述是真实的）**

Philosophers generally limit the application of the words valid and invalid to deductive arguments. (See also deductive validity.}  
哲学家通常将有效和无效这两个词限定在演绎论证上。（另见演绎有效性。）­tive arguments. (See also

**Value judging is the process of inferring to a value judgment. A value judgment is a claim about the worth or value of something.  
价值判断是推断出一个价值判断的过程。一个价值判断是关于某物的价值或价值的声明。**



Notes:  
为了保护表格10.3中的信息，副驾驶员在飞行员起飞并爬升至5000英尺的途中记录了一套飞行仪表的信息。主要目的是观察高度和温度之间的关系，但还记录了其他一些项目。为了确保估计的准确性，应该重复进行相同的操作多次。表格10.3中包括高度、温度、空速、垂直速度和距离机场的距离的常规起飞和爬升距离的说明：

1. Refer also to the Glossary, which is not represented in this index.  
   请参阅词汇表，该词汇表在此索引中未列出。
2. Definitions are cited here in boldface.  
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CRITICAL  
THINKING

ROBERT H. ENNIS

(. ritical thinking affects every aspect of our lives. However, making a reasonable decision about what to believe or do involves complex thought processes that, fortunately, can be understood and improved upon. Comprehensive in scope, this book deals with:  
批判性思维影响我们生活的方方面面。然而，对于要相信或做什么的合理决策涉及复杂的思维过程，幸运的是，这些过程是可以理解和改进的。这本书的范围广泛，涉及以下内容：

* definition  
  定义
* argument analysis
* credibility of sources
* observation
* deduction
* assumption identification

▼ induction

* value judging
* verbal clarity and consistency  
  口头清晰和一致
* fallacies  
  谬误
* discussion—asking and responding to questions  
  讨论 - 提问和回答问题
* presentation of your views orally and in writing  
  以口头和书面形式表达你的观点

Emphasizing Focus, Reasons, Inference, Situation, Clarity, and Overview (FRISCO), the author presents a checklist useful for judging already stated ideas as well as developing new ones. In addition. Critical Thinking contains extended discussions, numerous examples for practice, and suggested answers to most of the review items provided in the “check-ups." Since natural language is promoted, technical terminology is minimized, though not completely avoided.  
强调焦点、原因、推理、情况、清晰度和概述（FRISCO）, 作者提供了一个有用的清单，用于评判已经陈述的观点以及发展新观点。此外，批判性思维包含了详细讨论、大量实践示例以及对检查项目中大部分复习题的建议答案。鉴于提倡自然语言，尽量减少技术术语的使用，但并非完全避免。

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PRENTICE HALE  
PRENTICE HALE

Upper Saddle River, N.I 07458  
上塞德尔河，N.I 07458

1. “Critical Thinking: A Streamlined Conception,” *Teaching Philosophy,* 14 (1), 1991, pp. 5-25. [↑](#footnote-ref-1)
2. See 1. F. Strawson s *Introduction to I.oβiccιl Theory* (London: Methuen, 1952) for a discussion of this topic. [↑](#footnote-ref-2)
3. “Identifying Implicit Assumptions ” *Synthese1* 51,1982, pp. 61-86. [↑](#footnote-ref-3)
4. John H. Wigmore, *A Student's Textbook of the Laws of Evidence* ( Brooklyn: The Foundation Press 1935), 238-239. [↑](#footnote-ref-4)
5. This is a controversial topic, beyond the scope of this book, but those who are interested might start with a look at C. I. Lewis’ “Implication and the Algebra of Logic,” *Mind,* October 1912, pp. 522-531, and P. F. Strawson’s *Introduction to Logical Theory* (London: Methuen & Co., 1952), where some mis­leading features are elaborated. H. P. Grice, in his “Logic and Conversation,” in *The Philosophy of Language* (2nd edition), edited by A. P. Martinιch (Oxford: Oxford University Press, 1990), offers a defense. [↑](#footnote-ref-5)
6. For some possibilities, see R. L. Armstrong and L. W. Howe, “An Euler Test for Syllogisms,” *Teaching Philosophy, 13* (1) (March 1990), pp. 39-46; James O. Bennett and John Nolt, “Venn/Euler Test for Categorical Syllogisms,” *Teaching Philosophy, 17(1)* (March 1994), pp. 41-55; Keith Stenning and John Oberlander. “A Cognitive Theory of Graphical and Linguistic Reasoning: I ogic and Implementation,” *Cognitive Science, 19* (1995), pp. 97-140; and my *Natural Language Logic,* forthcoming. [↑](#footnote-ref-6)
7. This is a controversial point, again beyond the scope of this book. See the Lewis, Strawson, and Grice references mentioned at the beginning of Chapter 5 if you want to pursue it. [↑](#footnote-ref-7)
8. Read these illustrative cases closely several times and make sure that you understand each step. If you have trouble with class logic, you should review Chapter 5 for [↑](#footnote-ref-8)
9. See my *Natural Language Logic* (forthcoming) for further discussion of this topic. [↑](#footnote-ref-9)
10. [If Emilia knew her husband rather more than others did and he was a melo- [↑](#footnote-ref-10)
11. A. C. Bradley, *Shakespearean Tragedy* (London: Macmillan and Co., Ltd, 1937), p. 213. [↑](#footnote-ref-11)
12. A. C. Bradley, *Shakespearean Tragedy* (London: Macmillan and Co., Ltd, 1937), p. 220. [↑](#footnote-ref-12)
13. Ennis, Robert H., and Millman, Jason, *Cornell Critical Thinking Test, Level Z (Pacific* Grove, CA: Midwest Publications, 1985). [↑](#footnote-ref-13)
14. I am indebted to Bruce Warner for calling my attention to this example. [↑](#footnote-ref-14)
15. **d.** Therefore, Emilia did not suspect her husband of villainy.

    The form of this argument, you will recall, is affirming the antecedent. This is a deductively valid form. The antecedent in this case is affirmed in reasons *n* and *c.* The whole conditional is the assumption, given in *b.*

    The trouble with the argument in Example 9:4 is that the conditional proposi­tion (⅛) appears to be false. A woman could fake the tone of astonishment and hor­ror in such conditions. Also, she could still be astonished and horrified by the enor­mity of the deed even though she did suspect her husband of being a villain—just not that much of a villain. Or she could be astonished and horrified even though she thought he was a dreadful villain, but did not think that his villainy took him in this direction. Or she could be astonished and horrified by his acts of villainy, even though his being a villain of this sort was known to her. I am astonished and horrified by [↑](#footnote-ref-15)
16. A. C. Bradley, *Shakespearean Tragedy* (London: Macmillan and Co., Ltd., 1937), pp. 179-180. [↑](#footnote-ref-16)
17. You might have noted that I added *a tone of in* order to make clear what it was we could observe If you want to leave it literally as Bradley presented it. then you must redo the example so that the best explanation inference goes from the observation made to the conclusion that she was astonished and horrified. [↑](#footnote-ref-17)
18. For discussions of these criteria, see Jonathan Bennett, “Event Causation: The Counterfactual Analysis,” in James E. Tomberlin (ed.), *Philosophical Perspectives 1: Metaphysics* (Atascadero, CA: Ridgeview, 1987); John L. Earman, “J. L. Mackie, The Cement of the Universe,” *The Philosophical Review, 85,* 1976, 390-394; Robert H. Ennis, “Mackie’s Singular Causality and Linked Overdetermination,” *PSA 1982,* Vol. 1 (East Lansing, MI: Philosophy of Science Association, 1982); H.L.A. Hart and A. M. Honore, *Causation in the Law* (Oxford: Clarendon Press, 1959); David Lewis, “Counterfactual Dependence and Time’s Arrow,” *Nous, 13,* 1979, 455-476; J. L. Mackie, *The Cement of the Universe* (Oxford: Clarendon Press, 1974); and Michael Scriven, “Causes, Connections, and Conditions in History,” in William H. Dray (ed.), *Philosophical Analysis and History* (New' York- Harper & Rowς 1966), 238-264. [↑](#footnote-ref-18)
19. See the items in the previous footnote for a flavor of the discussion. [↑](#footnote-ref-19)
20. Barbel Inhelder and Jean Piaget, *The Growth of Logical Reasoning from Childhood to Adolescence* (New York: Basic Books, 1958), p. 1. [↑](#footnote-ref-20)
21. 4 See my “Children’s Ability to Handle Piaget’s Propositional Logic: A Conceptual Critique,” in Sohan and Celia Modgil (Eds.),/ran *Piaget: Consensus and Controversy* (London: Holt, Rinehart and Winston, 1982), pp 101-130. [↑](#footnote-ref-21)
22. Again, I lean on W. D. Ross, *ibid.* [↑](#footnote-ref-22)
23. Max Black, *Problems of Analysis* (Ithaca, NY: Cornell University Press, 1954), pp. 3-23. [↑](#footnote-ref-23)
24. A few interpretive comments: Several of the dispositions (1 D, 2 E, and 3 A) contribute to being well-informed (1 C) but are separate dispositions in their own right.

    The expressed concern with true belief accepts the view that our concepts and vocabulary are constructed by us, but also that (to oversimplify somewhat) the relationships among the referents of our concepts and terms are not constructed by us. We can have true or false beliefs about these.

    The disposition (#3) to care about the dignity and worth of every person is not required of criti­cal thinking by definition, but in order that it be humane. I call it a correlative disposition, by which I mean one that, although this disposition is not part of the definition of *critical thinking,* it is desirable for all critical thinkers to have it, and the lack of it makes the critical thinking less valuable, or perhaps of no value at all. [↑](#footnote-ref-24)
25. I am indebted to Richard Paul for this example. [↑](#footnote-ref-25)