Sönke Ahrens

How to Take Smart Notes

如何聪明地做笔记（对照翻译版）

One Simple Technique to Boost Writing,

一个简单的技巧，提升写作水平

Learning and Thinking – for Students, Academics and Nonfiction Book Writers

学习与思考--面向学生、学者和非虚构类图书作者

takesmartnotes.com

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“Notes on paper, or on a computer screen do not make contemporary physics or other kinds of intellectual endeavor easier, they make it possible … no

matter how internal processes are implemented you need to understand the extent to which the mind is reliant upon external scaffolding.” (Levy 2011, 270)

“纸上的笔记，或电脑屏幕上的笔记并不能使当代物理学或其他种类的智力努力变得更容易，它们使之成为可能……无论内部过程如何实施，你都需要理解头脑对外部脚手架的依赖程度。" (Levy 2011, 270)

“One cannot think without writing.” (Luhmann 1992, 53)

"没有写作就没有思想"。"(Luhmann 1992年，53)

Table of Contents

目录

Introduction

介绍

Everybody writes. Especially in academia. Students write and professors write. And nonfiction writers, who are the third group of people this book is aiming to help, obviously write as well. And writing doesn't necessarily mean papers, articles or books, but everyday, basic writing. __ We write when we need to remember something, be it an idea, a quote or the outcome of a study. We write when we want to organise our thoughts and when we want to exchange ideas with others. Students write when they take an exam, but the first thing they do to prepare even for an oral examination is to grab pen and paper. We write down not only those things we fear we won't remember otherwise, but also the very things we try to memorise. Every intellectual endeavour starts with a note.

每个人都会写作。尤其是在学术界。学生写，教授写。而非小说作家是本书旨在帮助的第三类人，他们显然也会写作。而写作不一定是指论文、文章或书籍，而是日常的、基本的写作。当我们需要记住一些东西时，我们就会写作，无论是一个想法、一句话还是一项研究的结果。当我们想整理自己的思想，想与他人交流想法时，我们就会写作。学生在考试的时候会写，但即使是口试，他们准备的第一件事也是拿起笔和纸。我们不仅要写下那些我们担心不写就记不住的东西，而且还要写下那些我们试图记住的东西。每一项知识性的努力都是从笔记开始的。

Writing plays such a central role in learning, studying and research that it is surprising how little we think about it. If writing is discussed, the focus lies almost always on the few exceptional moments where we write a lengthy piece, a book, an article or, as students, the essays and theses we have to hand in. At first glance, that makes sense: these are the tasks that cause the most anxiety and with which we struggle the longest. Consequently, these

“written pieces” are also what most self-help books for academics or study guides focus on, but very few give guidance for the everyday note-taking that takes up the biggest chunk of our writing.

写作在学习、学习和研究中起着如此核心的作用，以至于我们竟然很少考虑它。如果讨论写作，焦点几乎总是在少数特殊的时刻，我们写了一篇长篇小说、一本书、一篇文章，或者，作为学生，我们必须交的论文和学位论文。乍一看，这是有道理的：这些任务是最让人焦虑的，也是我们奋斗最久的。因此，这些 "书面作品 "也是大多数学术自助书籍或学习指南所关注的，但很少有书籍对占据我们写作最大篇幅的日常笔记给予指导。

The available books fall roughly into two categories. The first teaches the formal requirements: style, structure or how to quote correctly. And then there are the psychological ones, which teach you how to get it done without mental breakdowns and before your supervisor or publisher starts refusing to move the deadline once more. What they all have in common, though, is that they start with a blank screen or sheet of paper.[1] But by doing this, they ignore the main part, namely note-taking, failing to understand that improving the organisation of all writing makes a difference. They seem to forget that the process of writing starts much, much earlier than that blank screen and that the actual writing down of the argument is the smallest part of its development. This book aims to fill this gap by showing you how to efficiently turn your thoughts and discoveries into convincing written pieces and build up a treasure of smart and interconnected notes along the way. You can use this pool of notes not only to make writing easier and more fun for yourself, but also to learn for the long run and generate new ideas. But most of all, you can write every day in a way that brings your projects forward.

现有的书籍大致分为两类。第一类教的是形式上的要求：风格、结构或如何正确引用。还有一些是心理学上的，教你如何在精神不崩溃的情况下，在你的上司或出版商再一次开始拒绝移动截止日期之前完成它。不过，他们都有一个共同点，那就是他们都是从一个空白的屏幕或一张纸开始的。

[1]但是，他们这样做，就忽略了主要的部分，即记笔记，没有明白提高所有写作的_组织性是有区别的。他们似乎忘记了，写作的过程比那个空白的屏幕早得多，早得多，而实际写下论点是其发展的最小部分。本书旨在填补这一空白，告诉你如何将你的想法和发现高效地转化为令人信服的书面作品，并在此过程中建立起一个聪明而又相互关联的笔记宝库。你不仅可以利用这个笔记库让自己的写作变得更容易、更有趣，还可以长期学习，产生新的想法。但最重要的是，你可以每天都用写作的方式来推进你的项目。

Writing is not what follows research, learning or studying, it is the medium of all this work. And maybe that is the reason why we rarely think about this writing, the everyday writing, the note-taking and draft-making. Like breathing, it is vital to what we do, but because we do it constantly, it escapes our attention. But while even the best breathing technique would probably not make much of a difference to our writing, any improvement in the way we organise the everyday writing, how we take notes of what we encounter and what we do with them, will make all the difference for the moment we do face the blank page/screen — or rather not , as those who take smart notes will never have the problem of a blank screen again.

写作不是研究、学习或研究之后的事情，它是所有这些工作的_媒介。也许这就是为什么我们很少考虑这种写作的原因，每天的写作，记笔记和打草稿。就像呼吸一样，它对我们所做的事情至关重要，但因为我们不断地做，所以它就逃脱了我们的注意。但是，即使是最好的呼吸技巧可能也不会给我们的写作带来多大的改变，但是，我们在组织日常写作的方式上的任何改进，我们如何记录我们所遇到的事情，以及我们如何处理这些事情，都会在我们确实面对空白页/屏的那一刻--或者更确切地说_不是，因为那些聪明地做笔记的人将永远不会再遇到空白屏的问题。

There is another reason that note-taking flies mostly under the radar: We don't experience any immediate negative feedback if we do it badly. But without an immediate experience of failure, there is also not much demand for help. And the publishing market working how it works, there is not much help in supply for this lack of

demand either. It is the panic in front of the blank screen that brings students and academic writers to turn to the bookshelves full of self-help books on writing, a market publishers meet in droves by focusing on how to deal with this horse-has-already-left-the-barn situation. If we take notes unsystematically, inefficiently or simply wrong, we might not even realise it until we are in the midst of a deadline panic and wonder why there always seem to be a few who get a lot of good writing done and still have time for a coffee every time we ask them. And even then, it is more likely that some form of rationalization will cloud the view of the actual reason, which is most likely the difference between good and bad note- taking. “Some people are just like that,” “writing has to be difficult,” “the struggle is part of the deal” are just a few of the mantras that keep too many from inquiring what exactly distinguishes successful writing strategies from less successful ones.

还有一个原因是，记笔记在大多数情况下都会被忽视。如果我们做得不好，我们不会体验到任何直接的负面反馈。但如果没有直接的失败体验，也不会有太多的求助需求。而出版市场是如何运作的，对于这种需求的缺乏，也没有太多的帮助供给。正是在空白屏幕前的恐慌，让学生和学术写作者转向了书架上满满的写作自助书，出版商们把注意力放在如何应对这种马已离仓的情况上，从而满足了这一市场。如果我们的笔记不系统，效率低下，或者干脆就是错误的，我们甚至可能意识不到这一点，直到我们处于截止日期的恐慌中，不知道为什么似乎总有几个人能写出很多好文章，而且每次问他们的时候还有时间喝咖啡。而即便如此，更有可能因为某种形式的合理化而蒙蔽了对实际原因的看法，这很有可能就是记笔记好与不好的区别。"有些人就是这样"，"写作必须要有难度"，"奋斗是交易的一部分"，这些只是一些口头禅，让太多的人无法探究成功的写作策略和不太成功的策略到底有什么区别。

The right question is: What can we do differently in the weeks, months or even years before we face the blank page that will get us into the best possible position to write a great paper easily? Very few people struggle with their papers because they don’t know how to cite correctly or because they suffer from a psychological issue

that keeps them from writing. Few struggle to text their friends or write emails. The rules of citation can be looked up and there is no way that there are as many mental issues as papers postponed. Most people struggle for much more mundane reasons, and one is the myth of the blank page itself. They struggle because they believe, as they are made to believe, that writing starts with a blank page. If you believe that you have indeed nothing at hand to fill it, you have a very good reason to panic. Just having it all in your head is not enough, as getting it down on paper is the hard bit. That is why good, productive writing is based on good note-taking. Getting something that is already written into another written piece is incomparably easier than assembling everything in your mind and then trying to retrieve it from there.

正确的问题是：在面对空白页之前的几周、几个月甚至几年里，我们可以做些什么不同的事情，让我们进入最佳状态，轻松写出一篇优秀的论文？很少有人因为不知道如何正确引用或因为心理问题而使他们无法写作而与论文斗争。很少有人为给朋友发短信或写邮件而苦恼。引文的规则可以查，不可能有论文延期这么多的心理问题。大多数人挣扎的原因要平凡得多，其中之一就是空白页本身的神话。他们挣扎的原因_是他们相信，因为他们被逼着相信，写作是从一张空白页开始的。如果你相信你手头确实没有任何东西可以填补它，你就有一个很好的理由去恐慌。仅仅在脑子里有了所有的东西是不够的，因为把它写在纸上才是难点。这就是为什么好的、有成效的写作是建立在良好的笔记基础上的。把已经写好的东西写成另一篇书面作品，比把所有的东西都在脑海里组合起来，然后再从那里找出来，是无比容易的。

To sum it up: The quality of a paper and the ease with which it is written depends more than anything on what you have done in writing before you even made a decision on the topic. But if that is true (and I wholeheartedly believe it is), and the key to successful writing lies in the preparation, it also means that the vast majority of self-help books and study guides can only help you to close the barn door correctly and according to official rules — not just a moment, but many months after the horse has already escaped.

综上所述。一篇论文的质量和写出来的难易程度，更多的是取决于_在你还没有决定主题之前，你在写作上做了什么。但是，如果这是真的（我全心全意地相信这是真的），成功写作的关键在于准备工作，那么也就意味着，绝大多数的自助书籍和学习指南只能帮助你正确地、按照官方的规定关上谷仓的大门--不是一时半会，而是在马儿已经跑了很多个月之后。

With that in mind, it is not surprising that the single most important indicator of academic success is not to be found in people's heads, but in the way they do their everyday work. In fact, there is no measurable correlation between a high IQ and academic success — at least not north of 120. Yes, a certain intellectual capacity helps to get into academia, and if you struggle severely with an IQ test, it is likely that you will struggle to solve academic problems, too. But once you are in, a superior IQ will neither help you to distinguish yourself nor protect you from failure. What does make a significant difference along the whole intelligence spectrum is something else: how much self-discipline or self-control one uses to approach the tasks at hand (Duckworth and Seligman, 2005; Tangney, Baumeister, and Boone, 2004).

有鉴于此，学习成功的一个最重要的指标不是在人们的头脑中，而是在他们的日常工作中，这就不足为奇了。事实上，高智商与学业成功之间并没有可衡量的相关性--至少在120分以北没有。是的，一定的智力有助于进入学术界，如果你在智商测试中严重吃力，很可能也会在解决学术问题上吃力。但是，一旦你进入了，优越的智商既不能帮助你脱颖而出，也不能保护你不被失败。在整个智商谱系中，确实有显著差异的是另一种东西：一个人用多少自律或自控力来处理手头的任务（Duckworth和Seligman，2005；Tangney，Baumeister和Boone，2004）。

It is not so important who you are, but what you do. Doing the work required and doing it in a smart way leads, somehow unsurprisingly, to success. At first glance, this is both good and bad news. The good news is that we wouldn't be able to do much about our IQ anyway, while it seems to be within our control to have more self-discipline with a little bit of willpower. The bad news is that we do

not have this kind of control over ourselves. Self- discipline or self-control is not that easy to achieve with willpower alone. Willpower is, as far as we know today,[2] a limited resource that depletes quickly and is also not that much up for improvement over the long term (Baumeister, Bratslavsky, Muraven, and Tice, 1998; Muraven, Tice, and Baumeister, 1998; Schmeichel, Vohs, and Baumeister, 2003; Moller, 2006). And who would want to flog oneself to work, anyway?

你是谁并不那么重要，而是你做了什么。做所需的工作，并以聪明的方式去做，某种程度上来说，不出所料，会导致成功。乍一看，这是一个好消息和坏消息。好消息是，我们无论如何也不会对自己的智商有多大的影响，而只要有一点意志力就能有更多的自律性，这似乎是我们可以控制的。坏消息是，我们没有这种控制自己的能力。仅仅靠意志力，自律或自制力并不是那么容易实现的。就我们今天所知，意志力是[2]一种有限的资源，很快就会消耗殆尽，而且从长远来看，也没有那么多可以改进的地方(Baumeister, Bratslavsky, Muraven, and Tice, 1998; Muraven, Tice, and Baumeister, 1998; Schmeichel, Vohs, and Baumeister, 2003; Moller, 2006)。反正谁愿意鞭策自己去工作呢?

Luckily, this is not the whole story. We know today that self-control and self-discipline have much more to do with our environment than with ourselves (cf. Thaler, 2015, ch. 2) — and the environment can be changed. Nobody needs willpower not to eat a chocolate bar when there isn't one around. And nobody needs willpower to do something they wanted to do anyway. Every task that is interesting, meaningful and well-defined will be done, because there is no conflict between long- and short-term interests. Having a meaningful and well-defined task beats willpower every time. Not having willpower, but not having to use willpower indicates that you set yourself up for success. This is where the organisation of writing and note-taking comes into play.

幸运的是，这不是故事的全部。我们今天知道，自控力和自律与我们的_环境比与我们自己有更大的关系（参见Thaler，2015，第2章）—而环境是可以改变的。当周围没有巧克力棒的时候，没有人需要意志力不去吃巧

克力棒。也没有人需要意志力去做一些他们无论如何都想做的事情。每一项有趣的、有意义的、定义明确的任务都会被完成，因为长期利益和短期利益之间没有冲突。拥有一个有意义的、定义明确的任务，每次都能战胜意志力。不_有意志力，但_不用意志力，说明你为自己的成功做了准备。这就是组织写作和记笔记的作用。

1 Everything You Need to Know

＃1你需要知道的一切

Until now, writing and note-taking techniques were usually taught without much regard to the overarching workflow. This book aims to change that. It will present you with the tools of note-taking that turned the son of a brewer into one of the most productive and revered social scientists of the 20th century. But moreover, it describes how he implemented them into his workflow so he could honestly say: “I never force myself to do anything I don’t feel like. Whenever I am stuck, I do something else.” A good structure allows you to do that, to move seamlessly from one task to another — without threatening the whole arrangement or losing sight of the bigger picture.

直到现在，写作和记笔记的技巧通常都是在不太考虑总体工作流程的情况下教授的。本书旨在改变这种状况。它将向你介绍记笔记的工具，这些工具将一个酿酒师的儿子变成了20世纪最富有成效、最受尊敬的社会科学家之一。但更多的是，它描述了他是如何将这些工具落实到他的工作流程中的，所以他可以诚实地说： "我从不强迫自己做任何我不喜欢的事情。每当我被卡住的时候，我就会做别的事情。" 一个好的结构可以让你做到这一点，从一个任务无缝地转移到另一个任务--而不会威胁到整个安排或忽视大局。

A good structure is something you can trust. It relieves you from the burden of remembering and keeping track of everything. If you can trust the system, you can let go of the attempt to hold everything together in your head and you can start focusing on what is important: The content, the argument and the ideas. By breaking down the amorphous task of “writing a paper” into small and clearly separated tasks, you can focus on one thing at a time, complete each in one go and move on to the next one (Chapter 3.1). A good structure enables flow , the state in which you get so completely immersed in your work that you lose track of time and can just keep on going as the work becomes effortless (Csikszentmihalyi, 1975). Something like that does not happen by chance.

一个好的结构是你可以信赖的东西。它能让您从记忆和跟踪一切的负担中解脱出来。如果你能信任这个系统，你就可以放弃把所有的事情都记在脑子里的企图，你可以开始专注于重要的事情：内容、论点和想法。通过将 "写论文 "这个无定形的任务分解成小的、明确分离的任务，你就可以一次只专注于一件事，一次完成每一件事，然后继续下一件事（第3.1章）。一个好的结构可以使你完全沉浸在工作中，以至于你失去了时间的踪迹，并且可以继续下去，因为工作变得毫不费力（Csikszentmihalyi, 1975）。这样的事情不是偶然发生的。

As students, researchers and nonfiction writers, we have so much more freedom than others to choose what we want to spend our time on. Still, we often struggle the most with procrastination and motivation. It is certainly not the lack of interesting topics, but rather the employment of problematic work routines that seems to take charge of us instead of allowing us to steer the process in the right direction. A good, structured workflow puts us back in charge and increases our freedom to do the right thing at the right time.

作为学生、研究者和非虚构作家，我们比别人有更多的自由来选择我们想把时间花在什么地方。不过，我们往往还是在拖延症和动机方面最挣扎。这当然不是缺乏有趣的主题，而是采用了有问题的工作程序，这似乎控制了我们，而不是让我们将过程引导到正确的方向。一个好的、有条理的工

作流程能让我们重新当家作主，增加我们在正确的时间做正确的事情的自由度。

Having a clear structure to work in is completely different from making plans about something. If you make a plan, you impose a structure on yourself ; it makes you inflexible. To keep going according to plan, you have to push yourself and employ willpower. This is not only demotivating, but also unsuitable for an open-ended process like research, thinking or studying in general, where we have to adjust our next steps with every new insight, understanding or achievement — which we ideally have on a regular basis and not just as an exception. Even though planning is often at odds with the very idea of research and learning, it is the mantra of most study guides and self- help books on academic writing. How do you plan for insight, which, by definition, cannot be anticipated? It is a huge misunderstanding that the only alternative to planning is aimless messing around. The challenge is to structure one's workflow in a way that insight and new ideas can become the driving forces that push us forward. We do not want to make ourselves dependent on a plan that is threatened by the unexpected, like a new idea, discovery — or insight.

拥有一个清晰的工作结构与制定计划是完全不同的。如果你制定了一个计划，你就把一个结构强加给了你自己；它使你变得不灵活。要想按计划进行，你必须推动自己，运用意志力。这不仅令人沮丧，而且也不适合像研究、思考或一般学习这样的开放性过程，在那里，我们必须根据每一个新的见解、理解或成就来调整我们的下一步--我们最好是定期地进行，而不仅仅是作为例外。尽管规划往往与研究和学习的理念相悖，但它却是大多数学习指南和学术写作自助书籍的口号。顾名思义，洞察力是无法预知的，如何规划？这是一个巨大的误区，认为计划的唯一选择就是漫无目的的瞎搞。我们面临的挑战是如何构建自己的工作流程，让洞察力和新想法能够成为推动我们前进的动力。我们不希望让自己依赖一个计划，而这个计划会受到意外的威胁，比如一个新的想法、发现--或者洞察力。

Unfortunately, even universities try to turn students into planners. Sure, planning will get you through your exams if you stick to them and push through. But it will not make you an expert in the art of learning/writing/note-taking (there is research on that: cf. Chapter 1.3). Planners are also unlikely to continue with their studies after they finish their examinations. They are rather glad it is over. Experts, on the other hand, would not even consider voluntarily giving up what has already proved to be rewarding and fun: learning in a way that generates real insight, is accumulative and sparks new ideas. The fact that you invested in this book tells me that you would rather be an expert than a planner.

不幸的是，即使是大学也试图把学生变成计划者。当然，如果你坚持不懈地努力，计划会让你通过考试。但它不会让你成为学习/写作/记笔记的专家（有研究表明：参见第1.3章）。计划者也不可能在考完试后继续学习。他们相当高兴它结束了。另一方面，专家们甚至不会考虑主动放弃已经被证明是有价值和有趣的事情：学习的方式能产生真正的见解，是积累性的，能激发新的想法。你投资这本书的事实告诉我，你宁愿做一个专家，也不愿意做一个规划师。

And if you are a student seeking help with your writing, the chances are that you already aim high too, because it is usually the best students who struggle the most. Good students wrestle with their sentences because they care about finding the right expression. It takes them longer to find a good idea to write about because they know from experience that the first idea is rarely that great and good questions do not fall into their laps. They spend more time in the library to get a better overview of the literature, which leads to more reading, which means that they have to juggle more information. Having read more does not automatically mean having more ideas. Especially in the beginning, it means having fewer ideas to work with, because you know that others have already thought of most of them.

而如果你是一个寻求写作帮助的学生，你的目标有可能也已经很高了，因为通常最挣扎的都是优秀的学生。优秀的学生会与他们的句子搏斗，因为他们在乎找到正确的表达方式。他们需要花费更多的时间来找到一个好的想法来写，因为他们从经验中知道，第一个想法很少有那么好，好的问题不会落入他们的圈套。他们花更多的时间在图书馆里，以便更好地了解文献的概况，这就导致了更多的阅读，这意味着他们必须兼顾更多的信息。读得多了，并不自动意味着有更多的想法。特别是在开始的时候，这意味着可操作的想法更少，因为你知道别人已经想到了大部分的想法。

Good students also look beyond the obvious. They peek over the fences of their own disciplines — and once you have done that, you cannot go back and do what everyone else is doing, even if you now must deal with heterogeneous ideas that come without a manual on how they might fit together. All that means is that a system is needed to keep track of the ever-increasing pool of information, which allows one to combine different ideas in an intelligent way with the aim of generating new ideas.

优秀的学生也会把眼光放得更远。他们越过自己学科的藩篱--一旦你做到了这一点，你就不能再回头去做其他人正在做的事情，即使你现在必须处理那些没有手册说明如何将它们结合在一起的异质思想。所有这一切都意味着需要一个系统来跟踪不断增加的信息库，使人们能够以一种智能的方式将不同的想法结合起来，目的是产生新的想法。

Poor students do not have any of these problems. As long as they stick within the boundaries of their discipline and read only as much as they are told to (or less), no serious external system is required and writing can be done by sticking with the usual formulas of “how to write a scientific paper.” In fact, poor students often feel more successful (until they are tested), because they don’t experience much self-doubt. In psychology, this is known as the Dunning-Kruger effect (Kruger and Dunning, 1999). Poor students lack insight into their own limitations — as they would have to know about the vast amount of knowledge out there to be able to see how little they know in comparison. That means that those who are not very good

at something tend to be overly confident, while those who have made an effort tend to underestimate their abilities. Poor students also have no trouble finding a question to write about: they neither lack opinions nor the confidence that they have already thought them through. They also won't have trouble finding confirming evidence in the literature as they usually lack both interest and skill to detect and think through dis-confirming facts and arguments.

贫困生不存在这些问题。只要他们坚持在本学科的范围内，只读叫他们读的书（或少读），就不需要严肃的外部系统，只要坚持 "如何写科学论文 "的通常公式，就可以写出文章来。事实上，差生往往_感觉更成功（直到他们被测试），因为他们不会经历太多的自我怀疑。在心理学上，这被称为邓宁-克鲁格效应（Kruger and Dunning，1999）。差生对自己的局限性缺乏洞察力--因为他们要知道外面有大量的知识，才能看到相比之下自己知道的有多少。这就意味着，那些在某方面不是很擅长的人往往过于自信，而那些努力过的人往往低估了自己的能力。差生也不难找到一个问题来写：他们既不缺乏意见，也不缺乏已经想好的自信。他们也不会在文献中找到确凿的证据，因为他们通常既缺乏兴趣，也缺乏技巧去发现和思考不确凿的事实和论点。

Good students, on the other hand, constantly raise the bar for themselves as they focus on what they haven't learned and mastered yet. This is why high achievers who have had a taste of the vast amount of knowledge out there are likely to suffer from what psychologists call imposter syndrome, the feeling that you are not really up to the job, even though, of all people, they are (Clance and Imes 1978; Brems et al. 1994). This book is for you, the good students, ambitious academics and curious nonfiction writers who understand that insight doesn't come easy and that writing is not only for proclaiming opinions, but the main tool to achieve insight worth sharing.

另一方面，优秀的学生会不断提高自己的标准，因为他们会专注于他们还没有学到和掌握的东西。这就是为什么那些尝到了外面大量知识的高分者很可能会患上心理学家所说的 "冒牌货综合症 "的原因，即感觉自己并不

能真正胜任这份工作，尽管在所有的人中，自己是可以胜任的（Clance和Imes 1978；Brems等1994）。本书是为你准备的，那些优秀的学生、雄心勃勃的学者和充满好奇心的非虚构作家，他们明白洞察力来之不易，写作不仅是为了宣扬观点，更是实现值得分享的洞察力的主要工具。

1.1 Good Solutions are Simple — and Unexpected

1.1 好的解决方案很简单--也是意想不到的。

There is no need to build a complex system and there is no need to reorganise everything you already have. You can start working and developing ideas immediately by taking smart notes.

没有必要建立一个复杂的系统，也没有必要重新组织你已经拥有的一切。你可以通过智能笔记立即开始工作和开发想法。

Complexity is an issue, though. Even if you don't aim to develop a grand theory and just want to keep track of what you read, organise your notes and develop your thoughts, you will have to deal with an increasingly complex body of content, especially because it is not just about collecting thoughts, but about making connections and sparking new ideas. Most people try to reduce complexity by separating what they have into smaller stacks, piles or separate folders. They sort their notes by topics and sub-topics, which makes it look less complex, but quickly becomes very complicated. Plus, it reduces the likelihood of building and finding surprising connections between the notes themselves, which means a trade-off between its usability and usefulness.

不过，复杂度是个问题。即使你不以发展一个宏大的理论为目标，只想跟踪你所读的内容，组织你的笔记和发展你的思想，你也必须处理越来越复杂的内容，特别是因为它不仅仅是收集思想，而是建立联系和激发新的想法。大多数人试图通过将他们所拥有的内容分成更小的堆栈、堆叠或单独的文件夹来减少复杂性。他们按主题和子主题对笔记进行分类，这让笔记看起来不那么复杂，但很快就变得非常复杂。另外，它降低了在笔记本身

之间建立和找到令人惊讶的联系的可能性，这意味着在它的可用性和实用性之间进行了权衡。

Thankfully, we don’t have to choose between usability and usefulness. Quite the contrary. The best way to deal with complexity is to keep things as simple as possible and to follow a few basic principles. The simplicity of the structure allows complexity to build up where we want it: on the content level. There is quite extensive empirical and logical research on this phenomenon (for an overview: cf. Sull and Eisenhardt, 2015). Taking smart notes is as simple as it gets.

幸运的是，我们不必在可用性和有用性之间做出选择。恰恰相反，我们不需要在可用性和实用性之间做出选择。处理复杂性的最好方法是尽可能地保持简单，并遵循一些基本原则。结构的简单化使得复杂性能够在我们想要的地方建立起来：在内容层面。关于这一现象，有相当广泛的经验和逻辑研究（概述：参见Sull和Eisenhardt，2015）。做智能笔记就是这么简单。

Another item of good news regards the amount of time and effort you have to put into getting started. Even though you will change considerably the way you read, take notes and write, there is almost no preparation time needed (except for understanding the principle and installing one or two free programs). It is not about redoing what you have done before, but about changing the way of working from now on. There is really no need to reorganise anything you already have. Just deal with things differently the moment you have to deal with them anyway.

另一个好消息是关于你必须投入多少时间和精力才能开始。尽管你会大大改变你阅读、做笔记和写作的方式，但几乎不需要任何准备时间（除了了解原理和安装一两个免费程序）。这不是重做以前做过的事情，而是从现在开始改变工作方式。其实不需要重新组织你已有的任何东西。反正要处理事情的那一刻，就用不同的方式来处理。

There is more good news. There is no need to reinvent the wheel. We only need to combine two well-known and proven ideas. The first idea lies at the heart of this book and is the technique of the simple slip-box. I will explain the principle of this system in the next chapter and show how it can be implemented in the everyday routines of students, academics or nonfiction writers. Thankfully, there are digital versions for all major operating systems available, but if you prefer, you can also use pen and paper. In terms of productivity and ease, you will still easily surpass those who are taking not-so-smart notes.

还有更多的好消息。没有必要重新发明轮子。我们只需要结合两个众所周知的、经过验证的想法。第一个想法是本书的核心，是简单滑箱的技术。我将在下一章解释这个系统的原理，并展示如何在学生、学者或非小说作家的日常工作中实施。值得庆幸的是，所有主流操作系统都有数字版本，但如果你喜欢，也可以使用纸笔。在生产力和便捷性方面，你仍然会轻松超越那些正在做不太聪明的笔记的人。

The second idea is equally important. Even the best tool will not improve your productivity considerably if you don't change your daily routines the tool is embedded in, just as the fastest car won't help you much if you don't have proper roads to drive it on. Like every change in behaviour, a change in working habits means going through a phase where you are drawn back to your old ways. The new way of working might feel artificial at first and not necessarily like what you intuitively would do. That is normal. But as soon as you get used to taking smart notes, it will feel so much more natural that you will wonder how you were ever able to get anything done before. Routines require simple, repeatable tasks that can become automatic and fit together seamlessly (cf. Mata, Todd, and Lippke, 2010). Only when all the related work becomes part of an overarching and interlocked process, where all bottlenecks are removed, can significant change take place (which is why none of the typical "10 mind-blowing tools to improve your productivity" tips you can find all over the internet will ever be of much help).

第二个想法同样重要。如果你不改变工具所蕴含的日常工作，即使是最好的工具也不会大幅提高你的工作效率，就像如果你没有合适的道路来驾驶它，最快的汽车也不会对你有什么帮助。就像每一种行为的改变一样，工作习惯的改变意味着要经历一个阶段，在这个阶段里，你会被拉回到你的老路上。新的工作方式一开始可能会觉得是人为的，不一定像你直觉上会做的那样。这很正常。但是，当你习惯于做智能笔记时，你会觉得它是如此的自然，以至于你会怀疑你以前是如何完成任何事情的。常规工作需要简单的、可重复的任务，这些任务可以变得自动，并且无缝地结合在一起（参见Mata，Todd，和Lippke，2010）。只有当所有相关的工作都成为一个总体的、相互关联的流程的一部分，所有的瓶颈都被消除了，才有可能发生显著的变化（这就是为什么你在互联网上能找到的典型的 "提高生产力的10个震撼人心的工具 "的提示都没有什么用）。

The importance of an overarching workflow is the great insight of David Allen’s “Getting Things Done” (Allen, 2001). There are few serious knowledge workers left who haven’t heard of “GTD” and that is for a good reason: It works. The principle of GTD is to collect everything that needs to be taken care of in one place and process it in a standardised way. This doesn’t necessarily mean that we actually do everything we once intended to do, but it forces us to make clear choices and regularly check if our tasks still fit into the bigger picture. Only if we know that everything is taken care of, from the important to the trivial, can we let go and focus on what is right in front of us. Only if nothing else is lingering in our working memory and taking up valuable mental resources can we experience what Allen calls a “mind like water” – the state where we can focus on the work right in front of us without getting distracted by competing thoughts. The principle is simple but holistic. It is not a quick fix or a fancy tool. It doesn’t do the work for you. But it does provide a structure for our everyday work that deals with the fact that most distractions do not come so much from our environment, but our own minds.

总体工作流程的重要性是大卫-艾伦（David Allen）的《把事情做完》（Allen，2001）的伟大见解。认真的知识工作者已经很少有人没听说过

"GTD "了，这是有充分理由的：它很有效。GTD的原则是把所有需要处理的事情收集在一个地方，并以标准化的方式进行处理。这并不一定意味着我们真的做了所有曾经打算做的事情，但它迫使我们做出明确的选择，并定期检查我们的任务是否仍然符合大局。只有当我们知道从重要到琐碎的事情都已经处理好了，我们才能放开手脚，专注于眼前的事情。只有当我们的工作记忆中没有任何其他东西滞留，没有任何东西占用宝贵的精神资源，我们才能体验到艾伦所说的 "心如止水"--在这种状态下，我们可以专注于眼前的工作，而不会被竞争的思想所干扰。这个原理很简单，但很全面。它不是一个快速的解决方案，也不是一个花哨的工具。它不会为你做工作。但它确实为我们的日常工作提供了一个结构，它处理了这样一个事实，即大多数分心并不是来自我们的环境，而是来自我们自己的思想。

Unfortunately, David Allen’s technique cannot simply be transferred to the task of insightful writing. The first reason is that GTD relies on clearly defined objectives, whereas insight cannot be predetermined by definition. We usually start with rather vague ideas that are bound to change until they become clearer in the course of our research (cf. Ahrens, 2014, 134f.). Writing that aims at insight must therefore be organised in a much more open manner. The other reason is that GTD requires projects to be broken down into smaller, concrete “next steps.” Of course, insightful writing or academic work is also done one step at a time, but these are most often too small to be worth writing down (looking up a footnote, rereading a chapter, writing a paragraph) or too grand to be finished in one go. It is also difficult to anticipate which step has to be taken after the next one. You might notice a footnote, which you check quickly on. You try to understand a paragraph and need to look up something for clarification. You make a note, go back to reading and then jump up to write down a sentence that formed itself in your mind.

不幸的是，大卫-艾伦的技术不能简单地转移到洞察力写作的任务上。第一个原因是，GTD依赖于明确定义的目标，而洞察力则无法通过定义来预先确定。我们通常从相当模糊的想法开始，这些想法必然会发生变化，直

到在研究过程中变得更加清晰（参见Ahrens，2014，134f.）。因此，以洞察为目的的写作必须以更开放的方式组织。另一个原因是，GTD要求将项目分解成更小的、具体的 "下一步"。当然，有见地的写作或学术工作也是一步一步完成的，但这些工作多半太小，不值得写下来（查一个脚注、重读一章、写一段话），或者太宏大，不能一次完成。也很难预料到下一步之后要走哪一步。你可能会注意到一个脚注，你会迅速检查。你试图理解一段话，需要查一些东西来澄清。你做了一个笔记，回去阅读，然后跳起来写下一个在你脑海中形成的句子。

Writing is not a linear process. We constantly have to jump back and forth between different tasks. It wouldn’t make any sense to micromanage ourselves on that level. Zooming out to the bigger picture does not really help, either, because then we have next steps like “writing a page.” That does not really help with navigating the things you have to do to write a page, often a whole bunch of other things that can take an hour or a month. One has to navigate mostly by sight. These are probably the reasons why GTD never really caught on in academia, although it is very successful in business and has a good reputation among the self-employed.

写作不是一个线性的过程。我们不断地要在不同的任务之间来回跳跃。在这个层面上对自己进行微观管理是没有任何意义的。放大到更大的画面也没有真正的帮助，因为这样我们就会有下一步的步骤，比如 "写一页"。这对浏览你要写一页的事情并没有真正的帮助，往往是一大堆其他的事情，可能需要一个小时或者一个月的时间。只能主要靠视觉来导航。这些可能是GTD在学术界从未真正流行起来的原因，尽管它在商业上非常成功，在个体经营者中也有很好的声誉。

What we can take from Allen as an important insight is that the secret to a successful organization lies in the holistic perspective. Everything needs to be taken care of, otherwise the neglected bits will nag us until the unimportant tasks become urgent. Even the best tools won’t make much of a difference if they are used in isolation. Only if they are embedded in a well- conceived working process can

the tools play out their strengths. There is no point in having great tools if they don't fit together.

我们可以从艾伦那里得到的重要启示是，一个成功组织的秘诀在于整体观念。每件事都需要处理好，否则被忽视的部分会纠缠我们，直到不重要的任务变得紧急。如果孤立地使用这些工具，即使是最好的工具也不会有太大的改变。只有将它们嵌入到一个精心构思的工作流程中，才能发挥工具的优势。如果这些工具不配合，再好的工具也没有意义。

When it comes to writing, everything, from research to proofreading, is closely connected. All the little steps must be linked in a way that will enable you to go seamlessly from one task to another, but still be kept separate enough to enable us to flexibly do what needs to be done in any given situation. And this is the other insight of David Allen: Only if you can trust your system, only if you really know that everything will be taken care of, will your brain let go and let you focus on the task at hand.

说到写作，从调研到校对，一切都紧密相连。所有的小步骤都必须以一种方式联系起来，使你能够从一项任务无缝地进入另一项任务，但同时又要保持足够的独立性，使我们能够在任何特定的情况下灵活地做需要做的事情。而这也是David Allen的另一个见解。只有当你能信任你的系统，只有当你真的知道 一切都会被处理好，你的大脑才会放开，让你专注于手头的任务。

That is why we need a note-taking system that is as comprehensive as GTD, but one that is suitable for the open-ended process of writing, learning and thinking. Enter the slip-box.

这就是为什么我们需要一个像GTD一样全面的记事系统，但又要适合开放式的写作、学习和思考过程。进入滑箱。

1.2 The Slip-box

1.2 滑箱。

It is the 1960s, somewhere in Germany. Among the staff of a German administration office is the son of a brewer. His name is Niklas Luhmann. He went to law school, but he has chosen to be a public servant, as he did not like the idea of having to work for multiple clients. Fully aware he is also not suited for a career in administration, as it involves a lot of socializing, he excuses himself every day after his 9–5 shift and goes home to do what he liked most: reading and following his diverse interests in philosophy, organizational theory and sociology.

这是20世纪60年代，在德国某地。在一个德国行政办公室的工作人员中，有一个酿酒师的儿子。他的名字叫尼克拉斯-卢曼。他上过法学院，但他选择了做一名公务员，因为他不喜欢为多个客户工作。他充分意识到自己也不适合从事行政工作，因为这需要大量的社交活动，所以每天朝九晚五的工作结束后，他就借口回家做自己最喜欢的事情：阅读和关注自己在哲学、组织理论和社会学方面的不同兴趣。

Whenever he encountered something remarkable or had a thought about what he read, he made a note. Now, many people read in the evening and follow their interests, and some even take notes. But for very few is it the path to something as extraordinary as Luhmann's career.

每当遇到了不起的事情，或者对所读内容有想法，他都会做一个记录。现在，很多人都会在晚上读书，跟着自己的兴趣走，有的甚至会做笔记。但对于极少数人来说，却是像卢曼的事业一样，走上了不平凡的道路。

After collecting notes for a while in the way most people do, commenting in the margins of a text or collecting handwritten notes by topic, Luhmann realised his note–taking was not leading anywhere. So he turned note–taking on its head. Instead of adding notes to existing categories or the respective texts, he wrote them

all on small pieces of paper, put a number in the corner and collected them in one place: the slip-box.

在用大多数人的方式收集了一段时间的笔记，在文本的空白处做评论，或者按主题收集手写笔记后，卢曼意识到自己的记笔记并没有通向任何地方。于是，他将记笔记的方式进行了颠覆。他没有将笔记添加到现有的类别或相应的文本中，而是将它们全部写在小纸片上，在角落里写上一个编号，然后将它们收集到一个地方：便签盒。

He soon developed new categories of these notes. He realised that one idea, one note was only as valuable as its context, which was not necessarily the context it was taken from. So he started to think about how one idea could relate and contribute to different contexts. Just amassing notes in one place would not lead to anything other than a mass of notes. But he collected his notes in his slip-box in such a way that the collection became much more than the sum of its parts. His slip-box became his dialogue partner, main idea generator and productivity engine. It helped him to structure and develop his thoughts. And it was fun to work with — because it worked.

他很快就把这些笔记发展出了新的类别。他意识到，一个想法、一个笔记只有在它的语境中才有价值，而语境不一定是它所取材的语境。所以他开始思考一个想法如何与不同的语境相联系并做出贡献。只是把笔记积累在一个地方，除了大量的笔记之外，不会有其他的结果。但他把他的笔记收集在他的便笺盒里，这样的收集方式远远超过了其各部分的总和。他的便笺盒成了他的对话伙伴、主要的创意来源和生产力引擎。它帮助他组织和发展他的思想。与它一起工作很有趣--因为它是有效的。

And it led him to enter academia. One day, he put some of these thoughts together into a manuscript and handed it over to Helmut Schelsky, one of the most influential sociologists in Germany. Schelsky took it home, read what this academic outsider had written and contacted Luhmann. He suggested that he should become a professor of sociology in the newly founded University of Bielefeld.

As attractive and prestigious as this position was, Luhmann wasn't a sociologist. He didn't have the formal qualifications required even to become an assistant for a sociology professor in Germany. He hadn't written a habilitation, the highest academic qualification in many European countries, which is based on the second book after the doctoral thesis. He had never held a doctorate or even obtained a sociology degree. Most people would take the offer as a huge compliment, but point out the impossibility of it and move on.

这让他进入了学术界。有一天，他把这些想法整理成一份手稿，交给了德国最有影响力的社会学家之一赫尔穆特-舍尔斯基。Schelsky把它带回家，读了这个学术外行写的东西，并联系了Luhmann。他建议他到新成立的比勒费尔德大学担任社会学教授。尽管这个职位很有吸引力，很有声望，但卢曼并不是一个社会学家。在德国，他甚至没有成为社会学教授助手的正式资格。他没有写过授权书，这是许多欧洲国家的最高学术资格，它的基础是博士论文之后的第二本书。他从未获得过博士学位，甚至没有获得过社会学学位。大多数人都会把这个提议当作是巨大的恭维，但指出不可能，然后继续前进。

Not Luhmann. He turned to his slip-box and with its help he put together a doctoral thesis and the habilitation thesis in less than a year — while taking classes in sociology. Shortly after, in 1968, he was chosen to become professor of sociology at the University of Bielefeld — a position he would hold for the rest of his life.

但卢曼不会。他求助于他的滑箱，在它的帮助下，他在不到一年的时间里完成了一篇博士论文_以及_定职论文--同时还在上社会学的课。不久之后，在1968年，他被选为比勒费尔德大学的社会学教授--这个职位将伴随他一生。

In Germany, a professor traditionally starts with a public lecture presenting his or her projects, and Luhmann, too, was asked what his main research project will be. His answer would become famous. He laconically stated: "My project: theory of society. Duration: 30

years. Costs: zero” (Luhmann, 1997, 11). In sociology, a “theory of society” is the mother of all projects.

在德国，教授的传统是以公开演讲开始，介绍自己的项目，而卢曼，也被问到他的主要研究项目会是什么。他的回答会成为名言。他懒洋洋地说："我的项目：社会理论。"我的项目：社会理论。持续时间。30年。成本：零"（Luhmann，1997，11）。在社会学中，"社会理论 "是所有项目之母。

When he finished the final chapter, almost exactly 29 and a half years later, as a two-volume book with the title “The Society of Society” (1997), it stirred up the scientific community.[3] It was a radical new theory that not only changed sociology, but stirred heated discussions in philosophy, education, political theory and psychology as well. Not everyone was able to follow the discussions, though. What he did was unusually sophisticated, very different and highly complex. The chapters were published individually, each book discussing one social system. He wrote on law, politics, economy, communication, art, education, epistemology — and even love.

当他在几乎整整29年半之后，以《社会的社会》（1997年）为书名的两卷本完成最后一章时，轰动了科学界。[[3]这是一个激进的新理论，不仅改变了社会学，而且在哲学、教育学、政治理论和心理学领域也激起了激烈的讨论。不过，并不是所有人都能跟着讨论。他所做的事情异常复杂，非常与众不同，非常复杂。这些章节都是单独出版的，每本书讨论一种社会制度。他写过法律、政治、经济、传播、艺术、教育、认识论--甚至爱情。

In 30 years, he published 58 books and hundreds of articles, translations not included. Many became classics in their respective fields. Even after his death, about half a dozen more books on diverse subjects like religion, education or politics were published in his name — based on almost finished manuscripts lying around in his office. There are more than a few colleagues I know who would give

a lot to be as productive in their whole lifetime as Luhmann was after his death.

30年中，他出版了58本书和数百篇文章，不包括译本。许多文章成为了各自领域的经典之作。甚至在他去世后，又有六七本关于宗教、教育或政治等不同主题的书以他的名义出版--基于他办公室里躺着的几乎已经完成的手稿。在我认识的同事中，有不止几个人愿意付出很多代价，以便在他们的一生中能像卢曼死后那样富有成效。

While some career-oriented academics try to squeeze as many publications out of one idea as possible, Luhmann seemed to do the opposite. He constantly generated more ideas than he was able to write down. His texts read as if he is trying to squeeze as much insight and as many ideas as possible into one publication.

当一些以事业为导向的学者试图从一个想法中挤出尽可能多的出版物时，Luhmann似乎反其道而行之。他不断产生的想法比他能够写下来的还要多。他的文字读起来就像他试图在一本出版物中挤出尽可能多的见解和尽可能多的想法。

When he was asked if he missed anything in his life, he famously answered: “If I want something, it’s more time. The only thing that really is a nuisance is the lack of time.” (Luhmann, Baecker, and Stanitzek, 1987, 139) And while some academics let their assistants do the main work or have a team that is writing the papers to which they add their names, Luhmann rarely had any assistance at all. The last assistant who worked for him swore blind that the only help he was able to give was to spot a few typos in his manuscripts here and there. Luhmann’s only real help was a housekeeper who cooked for him and his children during the week, not that extraordinary considering he had to raise three children on his own after his wife died early. Five warm meals a week of course do not explain the production of roughly 60 influential books and countless articles.

当有人问他是否错过了生活中的任何东西时，他有一个著名的回答。"如果我想要什么，那就是更多的时间 唯一真正令人讨厌的是缺乏时间"。Luhmann，Baecker，和Stanitzek，1987，139）而有些学者让助手做主要工作，或者有一个团队在写论文，他们在论文上加上自己的名字，但Luhmann很少有任何协助。最后一个为他工作的助手信誓旦旦地表示，他唯一能够给予的帮助就是在他的手稿中发现这里和那里的一些错别字。卢曼唯一真正的帮助是一个管家，平时为他和孩子们做饭，考虑到妻子早逝后他要独自抚养三个孩子，这并不是什么特别的事。当然，一周五顿热饭并不能解释他创作了大约60本有影响力的书籍和无数文章。

After doing extensive research on Luhmann's workflow, the German sociologist Johannes F.K. Schmidt concluded his productivity could only be explained by his unique working technique (Schmidt 2013, 168). That technique has never been a secret — Luhmann was always open about it. He regularly mentioned the slip-box as the reason for his productivity. From as early as 1985, his standard answer to the question of how anyone could be so productive was: "I, of course, do not think everything by myself. It happens mainly within the slip-box" (Luhmann, Baecker, and Stanitzek 1987, 142). But few gave the slip- box and the way he worked with it a closer look, dismissing his explanation as the modest understatement of a genius.

德国社会学家约翰内斯-F.K.施密特在对卢曼的工作流程做了大量研究后，得出结论：他的工作效率只能用他独特的工作技术来解释（施密特，2013，168）。这种技术从来都不是秘密--Luhmann一直都很公开。他经常提到滑箱是他的生产力的原因。早在1985年，他对任何人如何能够如此高产的问题的标准回答是："我当然不知道。"当然，我并不是什么事都自己想。它主要发生在滑箱内"（Luhmann, Baecker, and Stanitzek 1987, 142）。但很少有人对滑箱和他使用滑箱的方式进行仔细研究，把他的解释当作天才的谦虚低调。

His productivity is, of course, impressive. But what is even more impressive than the sheer number of publications or the outstanding quality of his writing is the fact that he seemed to achieve all this

with almost no real effort. He not only stressed that he never forced himself to do something he didn’t feel like, he even said: “I only do what is easy. I only write when I immediately know how to do it. If I falter for a moment, I put the matter aside and do something else.” (Luhmann et al., 1987, 154f.)[4]

他的生产力当然令人印象深刻。但是，比起他的出版物的数量或他的写作的杰出质量，更令人印象深刻的是，他似乎几乎没有付出真正的努力就实现了这一切。他不仅强调自己从不强迫自己去做不喜欢的事，他甚至说： "我只做容易的事情. 我只在马上知道怎么做的时候才会写。如果我有片刻的动摇，我就会把这件事放在一边，做别的事"。(Luhmann等，1987，154f.)[4]

Until recently, almost no one really seemed to believe it. We are still so used to the idea that a great outcome requires great effort that we tend not to believe that a simple change in our work routines could not only make us more productive, but the work also more fun. But doesn’t it make much more sense that the impressive body of work was produced not in spite of the fact he never made himself do anything he didn’t feel like, but because of it? Even hard work can be fun as long as it is aligned with our intrinsic goals and we feel in control. The problems arise when we set up our work in such an inflexible way that we can’t adjust it when things change and become arrested in a process that seems to develop a life of its own.

直到最近，几乎没有人真正相信这一点。我们仍然习惯于认为，要想取得好的结果，就必须付出巨大的努力，以至于我们往往不相信，简单地改变一下我们的工作常规，不仅可以使我们的工作效率更高，而且工作也更有趣。但是，令人印象深刻的作品不是因为他从来没有让自己做任何他不喜欢的事情，而是因为它，这不是更有意义吗？只要与我们的内在目标相一致，并且我们觉得自己在控制之中，即使是艰苦的工作也可以是有趣的。当我们把工作设置得如此不灵活，以至于当事情发生变化时，我们无法调整它，并在一个似乎发展出自己的生命的过程中被捕时，问题就会出现。

The best way to maintain the feeling of being in control is to stay in control. And to stay in control, it's better to keep your options open during the writing process rather than limit yourself to your first idea. It is in the nature of writing, especially insight-oriented writing, that questions change, the material we work with turns out to be very different from the one imagined or that new ideas emerge, which might change our whole perspective on what we do. Only if the work is set up in a way that is flexible enough to allow these small and constant adjustments can we keep our interest, motivation and work aligned — which is the precondition to effortless or almost effortless work.

保持掌控感的最好方法就是保持掌控感。而要保持掌控感，在写作过程中，最好是保持自己的选择权，而不是把自己限制在第一个想法里。写作的本质，尤其是以洞察力为导向的写作，问题会发生变化，我们所处理的材料原来与想象中的大相径庭，或者出现新的想法，这可能会改变我们对工作的整个看法。只有当工作的设置足够灵活，允许这些细小而不断的调整，我们才能保持兴趣、动机和工作的一致性--这是毫不费力或几乎毫不费力工作的前提。

Luhmann was able to focus on the important things right in front of him, pick up quickly where he left off and stay in control of the process because the structure of his work allowed him to do this. If we work in an environment that is flexible enough to accommodate our work rhythm, we don't need to struggle with resistance. Studies on highly successful people have proven again and again that success is not the result of strong willpower and the ability to overcome resistance, but rather the result of smart working environments that avoid resistance in the first place (cf. Neal et al. 2012; Painter et al. 2002; Hearn et al. 1998). Instead of struggling with adverse dynamics, highly productive people deflect resistance, very much like judo champions. This is not just about having the right mindset, it is also about having the right workflow. It is the way Luhmann and his slip-box worked together that allowed him to move freely and flexibly between different tasks and levels of

thinking. It is about having the right tools and knowing how to use them — and very few understand that you need both.

Luhmann能够专注于眼前的重要事情，迅速拾起落下的工作，并保持对过程的控制，因为他的工作结构允许他这样做。如果我们的工作环境足够灵活，能够适应我们的工作节奏，我们就不需要在阻力中挣扎。对高成功人士的研究一再证明，成功_不是强大的意志力和克服阻力的能力的结果，而是聪明的工作环境首先避免阻力的结果（参见Neal等人，2012；Painter等人，2002；Hearn等人，1998）。高生产力的人不会与不利的动力作斗争，而是转移阻力，很像柔道冠军。这不仅仅是要有正确的心态，也要有正确的工作流程。正是卢曼和他的滑箱的合作方式，让他能够在不同的任务和思维层次之间自由灵活地移动。这是关于拥有正确的工具和知道如何使用它们--很少有人明白你需要这两者。

People still search for Luhmann's "secret," putting down his remarkable output to him being a genius or even thinking they only need his slip-box and they would be set. Sure, you need to be smart to be successful in academia and writing, but if you don't have an external system to think in and organise your thoughts, ideas and collected facts, or have no idea how to embed it in your overarching daily routines, the disadvantage is so enormous that it just can't be compensated by a high IQ.

人们仍然在寻找卢曼的 "秘密"，把他的卓越产出归结为他是个天才，甚至认为他们只需要他的滑盖箱就可以了。当然，要想在学术界和写作界取得成功，你需要很聪明，但如果你没有一个_外在的系统_来思考和组织你的思想、想法和收集的事实，或者不知道如何把它嵌入到你的日常工作中，那么劣势是如此巨大，以至于高智商根本无法弥补。

As far as the technology is concerned, there is no secret. It has all been in the open for more than three decades now. So why is not everybody using a slip-box and working effortlessly towards success? Is it because it is too complicated? Certainly not. It is rather surprisingly simple. The reasons are much more mundane:

至于技术方面，并没有什么秘密。都已经公开了三十多年了。那么，为什么不是每个人都在使用滑箱，毫不费力地走向成功呢？是因为它太复杂吗？当然不是。而是简单得令人吃惊。原因要平凡的多。

1. Until very recently, when the first results from the research on the file system were published, some crucial misunderstandings prevailed about how Luhmann actually worked, which led to disappointing results for many who tried to emulate the system. The main misunderstanding stems from an isolated focus on the slip-box and a neglect of the actual workflow in which it is embedded.

2. 直到最近，当关于文件系统的第一批研究成果发表时，人们对Luhmann的实际工作方式普遍存在一些关键性的误解，这导致许多试图模仿该系统的人得到了令人失望的结果。主要的误解源于对滑箱的孤立关注，而忽视了它所嵌入的实际工作流程。

3. Almost everything that is published about this system was only accessible in German and was almost exclusively discussed within a small group of devoted sociologists who specialised in Luhmann's theory of social systems — hardly the kind of critical mass that would draw much attention.

4. 几乎所有关于这个系统的出版物都只能用德语查阅，而且几乎只在一小撮专门研究卢曼社会系统理论的社会学家内部进行讨论--几乎没有引起多少人的关注。

5. The third and maybe the most important reason is the very fact that it is simple. Intuitively, most people do not expect much from simple ideas. They rather assume that impressive results must have equally impressively complicated means.

6. 第三个也可能是最重要的原因，就是它很简单。直觉上，大多数人对简单的想法并不抱有太大的期望。他们宁愿认为，令人印象深刻的结果一定有同样令人印象深刻的复杂手段。

The contemporaries of Henry Ford did not understand why something as simple as the conveyor belt should be that revolutionary. What difference does it make to let the cars move from worker to worker instead of letting the workers walk from car to car? I would not be surprised if some of them even thought of Ford as a bit simpleminded and overly enthusiastic about a rather minor change in work organization. It is only in hindsight that the scale of the advantages of this small tweak became obvious to everyone. I wonder how long it will take until the advantages of Luhmann's slip-box and work routines become equally obvious to everyone. But by then, everyone will already have known it all along the way.

与亨利-福特同时代的人不明白，为什么像传送带这样简单的东西会有那么大的革命性。让汽车从工人到工人，而不是让工人从汽车走到汽车，这有什么不同呢？如果他们中的一些人甚至认为福特在工作组织上的一个相当小的变化上有些头脑简单，过于热情，我也不会感到奇怪。事后才发现，这个小调整的好处规模之大，大家都看在眼里。不知道要过多久，卢曼的滑板箱和工作程序的优势才会同样明显地展现在大家面前。但到那时，大家已经一路知晓了。

Whatever the reasons were: The word is out now and I wouldn't be surprised if it spreads fast.

不管原因是什么。现在已经传开了，如果传播得很快，我也不会感到惊讶。

1.3 The slip-box manual

1.3 滑盖箱手册

How does the slip-box, the heart of this system, work?

这个系统的核心--滑箱是如何运作的呢?

Strictly speaking, Luhmann had two slip-boxes: a bibliographical one, which contained the references and brief notes on the content of the literature, and the main one in which he collected and generated his ideas, mainly in response to what he read. The notes were written on index cards and stored in wooden boxes.

严格地说，卢曼有两个滑箱：一个是书目箱，里面有参考文献和对文献内容的简要说明；另一个是主箱，主要是针对他阅读的内容，收集和产生他的想法。这些笔记写在索引卡上，存放在木箱中。

Whenever he read something, he would write the bibliographic information on one side of a card and make brief notes about the content on the other side (Schmidt 2013, 170). These notes would end up in the bibliographic slip-box.

每当他读到一些东西时，他都会在卡片的一面写上书目信息，并在另一面对内容做简要的笔记（Schmidt 2013，170）。这些笔记最终会被放入书目滑箱中。

In a second step, shortly after, he would look at his brief notes and think about their relevance for his own thinking and writing. He then would turn to the main slip-box and write his ideas, comments and thoughts on new pieces of paper, using only one for each idea and restricting himself to one side of the paper, to make it easier to read them later without having to take them out of the box. He kept them usually brief enough to make one idea fit on a single sheet, but would sometimes add another note to extend a thought.

第二步，在不久之后，他会看他的简要笔记，并思考这些笔记与自己的思考和写作的相关性。然后，他将转向主便条箱，在新的纸片上写下他的想法、评论和思想，每个想法只用一张纸，并限制在纸的一面，以便以后更容易阅读，而不必把它们从盒子里拿出来。他让它们通常简明扼要，足以让一个想法适合在一张纸上，但有时会再加一张纸条来延伸一个想法。

He usually wrote his notes with an eye towards already existing notes in the slip-box. And while the notes on the literature were

brief, he wrote them with great care, not much different from his style in the final manuscript: in full sentences and with explicit references to the literature from which he drew his material. More often than not, a new note would directly follow up on another note and would become part of a longer chain of notes. He then would add references to notes somewhere else in the slip–box, some of them which were located nearby, others in completely different areas and contexts. Some were directly related and read more like comments, others contained not–so– obvious connections. Rarely would a note stay in isolation.

他在写笔记时通常会注意到滑箱中已有的笔记。而关于文献的笔记虽然简短，但他写得非常认真，与他在最后的手稿中的风格并无太大差别：用完整的句子，并明确地引用他从哪些文献中获取材料。更多的时候，一个新的笔记会直接跟进另一个笔记，并成为一个较长的笔记链的一部分。然后，他还会在便笺盒中的其他地方添加参考文献，其中一些文献就在附近，另一些则在完全不同的领域和背景下。有些是直接相关的，读起来更像是评论，有些则包含了不太明显的联系。很少会有一张纸条是孤立的。

He did not just copy ideas or quotes from the texts he read, but made a transition from one context to another. It was very much like a translation where you use different words that fit a different context, but strive to keep the original meaning as truthfully as possible. Writing that an author struggles in one chapter to justify his method can be a much more adequate description of this chapter's content than any quote from the text itself (this would call for an explanation, of course).

他不只是抄袭他所读的文章中的观点或引文，而是从一个语境过渡到另一个语境。这很像翻译，你用不同的词来适应不同的语境，但要尽量真实地保持原意。写一个作者在一章中努力证明他的方法，可以比任何引用文本本身的内容更充分地描述这一章的内容（当然，这需要解释）。

The trick is that he did not organise his notes by topic, but in the rather abstract way of giving them fixed numbers. The numbers bore

no meaning and were only there to identify each note permanently. If a new note was relevant or directly referred to an already existing note, such as a comment, correction or addition, he added it directly behind the previous note. If the existing note had the number 22, the new note would become note number 23. If 23 already existed, he named the new note 22a. By alternating numbers and letters, with some slashes and commas in between, he was able to branch out into as many strings of thought as he liked. For example, a note about causality and systems theory carried the number 21/3d7a7 following a note with the number 21/3d7a6.

诀窍在于，他并没有按主题来组织他的笔记，而是以相当抽象的方式给它们固定的数字。这些数字没有任何意义，只是为了永久地识别每个笔记。如果一个新的注解是相关的，或者直接指向一个已经存在的注解，比如评论、更正或补充，他就直接把它加在前一个注解的后面。如果现有注解的编号是22，新注解就会成为注解编号23。如果已经存在23号，他就把新注解命名为22a。通过数字和字母的交替使用，中间再加上一些斜线和逗号，他能够根据自己的喜好，分支出许多思想串。例如，一个关于因果关系和系统论的注解，在一个数字为21/3d7a7的注解之后，带着数字21/3d7a6。

Whenever he added a note, he checked his slip-box for other relevant notes to make possible connections between them. Adding a note directly behind another note is only one way of doing this. Another way is by adding a link on this and/or the other note, which could be anywhere in the system. This very much resembles, of course, the way we use hyperlinks on the internet. But, as I will explain later, they are quite different and it would be rather misleading to think of his slip-box as a personal Wikipedia or a database on paper. The similarities are obviously there, but the subtle differences are what makes this system unique.

每当他添加一个笔记时，他都会检查他的滑盖箱中是否有其他相关的笔记，以便在它们之间建立可能的联系。直接在另一个注解后面添加注解只是一种方法。另一种方法是在这个和/或另一个笔记上添加一个链接，它

可能是系统中的任何地方。当然，这非常类似于我们在互联网上使用超链接的方式。但是，正如我后面所解释的那样，它们是完全不同的，如果把他的滑盖箱看成是个人的维基百科或纸上的数据库，那将是相当误导的。相似之处显然是有的，但微妙的差异才是这个系统的独特之处。

By adding these links between notes, Luhmann was able to add the same note to different contexts. While other systems start with a preconceived order of topics, Luhmann developed topics bottom up, then added another note to his slip-box, on which he would sort a topic by sorting the links of the relevant other notes.

通过添加这些笔记之间的链接，Luhmann能够将同一笔记添加到不同的语境中。其他系统一开始就有一个预设的主题顺序，而Luhmann则是自下而上地开发主题，然后在他的滑箱中又添加了一个笔记，他将在这个滑箱上通过排序相关其他笔记的链接来对一个主题进行排序。

The last element in his file system was an index, from which he would refer to one or two notes that would serve as a kind of entry point into a line of thought or topic. Notes with a sorted collection of links are, of course, good entry points.

他的文件系统中的最后一个元素是一个索引，他将从这个索引中引用一两个笔记，作为进入一个思路或主题的一种切入点。当然，带有分类收集链接的笔记是很好的切入点。

That's it. Actually, it is even simpler than this, as we now have software that makes it much easier (cf. chapter 1.3): we don't need to manually add numbers on notes or cut out paper as Luhmann had to.[5]

仅此而已。其实，比这更简单，因为我们现在有了软件，使之变得更简单了（参见1.3章）：我们不需要像Luhmann那样在笔记上手动添加数字或剪纸。[5]

Now that you know how the slip-box works, you only need to understand how to work with it. And the best way to understand this

is to understand a little bit about the way we think, learn and develop ideas. And if I were forced to boil it down to a single bullet point, it would be this: We need a reliable and simple external structure to think in that compensates for the limitations of our brains. But first, let me guide you through the process of writing a paper with the slip-box.

既然你知道了滑箱的工作原理，你只需要了解如何使用它。而理解这个问题的最好方法就是了解一下我们思考、学习和发展想法的方式。而如果我被迫将其归纳为一个要点，那就是。我们需要一个可靠而简单的外部结构来思考，以弥补我们大脑的局限性。但首先，让我来指导你用滑箱写论文的过程。

2 Everything You Need to Do

#2你需要做的一切

Imagine you do not start with a clean sheet. Imagine instead some friendly genie (or well-paid personal assistant — whatever is more likely for you to have available) prepared a rough draft of your paper for you. It is already a fully developed argument including all references, quotes and some really smart ideas. The only thing left to do is to revise this rough draft and send it off. Make no mistake: there is still work to do and it is more than just finding some typos. Editing is work that needs focus. You have to rephrase some sentences, delete one or two redundancies and maybe add a couple of sentences or even passages to fill some holes left in the argument. But at the same time, it is a well-defined task: nothing that couldn't be done within a few days and certainly nothing you would have trouble motivating yourself to do: Everybody is motivated when the finish line is within reach. No problem so far.

想象一下，你不是从一张白纸开始的。想象一下，一些友好的精灵（或报酬丰厚的私人助理--不管是什么对你来说更有可能的东西）为你准备了一份论文的草稿。它已经是一个完全成熟的论点，包括所有的参考资料、引文和一些非常聪明的想法。唯一要做的就是修改这个草稿，然后把它寄出去。别搞错了：还有工作要做，这不仅仅是找出一些错别字。编辑是需要专注的工作。你必须重新措辞一些句子，删除一两个多余的句子，也许还要增加几句甚至几段话来填补论证中留下的一些漏洞。但同时，这也是一项明确的任务：没有什么是在几天内完成不了的，当然也没有什么是你难以激励自己去做的。当终点线在眼前时，每个人都会有动力。到目前为止还没有问题。

Imagine now you are not the one who has to edit the rough draft and turn it into the final paper, but the one who has to prepare it. What would be helpful to achieve that quickly? It would certainly make things a lot easier if you already had everything you need right in front of you: The ideas, the arguments, the quotes, long developed passages, complete with bibliography and references. And not just readily available, but already in order, sorted by chapters that have descriptive headlines. Now that's also a clear assignment. No worries about perfect sentences (someone else will take care of that), no worries about finding things and coming up with ideas (someone else already took care of that), you just focus on turning a string of ideas into a continuous text. Again, that is still serious work and you have to put some effort into it, if you want to make it great. You might spot a missing step in an argument and have to fill it, or you might want to rearrange some notes or leave something out that you regard as less relevant. But, again, this is not an overwhelming task and luckily, it doesn't need to be perfect. No problem so far.

想象一下，现在你不是那个要编辑初稿并把它变成最终论文的人，而是那个要准备它的人。要想快速实现这一点，什么东西会有帮助呢？如果你已经把所有需要的东西都摆在你面前，那肯定会让事情变得简单很多。观点，论点，引文，长期发展的段落，完整的参考书目和参考文献。而且不仅仅是现成的，而是已经按顺序，按有描述性标题的章节分类。现在这也

是一个明确的任务。不用担心完美的句子（别人会搞定），不用担心找东西和出主意（别人已经搞定了），你只需要专注于把一连串的想法变成连续的文字。同样，这仍然是一项严肃的工作，如果你想把它做得很好，你必须付出一些努力。你可能会发现一个论点中缺失的步骤而不得不补上，或者你可能会想重新整理一些笔记，或者漏掉一些你认为不太相关的东西。但是，同样，这也不是一个压倒性的任务，幸运的是，它不需要完美。到目前为止还没有问题。

Equally manageable is the task of bringing already existing notes into order, especially if half of them already are in order. Searching through a file system with strings of discussions, plenty of material and ideas is, believe it or not, fun. It does not require the kind of focused attention you would need to formulate a sentence or to understand a difficult text. Your attention is rather at ease and it even helps to have a playful mindset. Only with a less narrow focus will you be able to see connections and patterns. You see clearly where long strings of discussions have already been built up — this is a good starting point. If you do look for specific notes, you have an index to turn to. No problem at all so far.

同样可控的任务是将已经存在的笔记按顺序排列，尤其是当其中一半已经按顺序排列的时候。在文件系统中搜索一连串的讨论、大量的材料和想法，信不信由你，这很有趣。它不需要你那种专注的注意力，你需要制定一个句子或理解一个困难的文本。你的注意力相当自如，甚至还能帮助你有一个玩耍的心态。只有在注意力不那么狭窄的情况下，你才能看到联系和模式。你能清楚地看到已经建立起长串讨论的地方--这是一个很好的起点。如果你真的要找具体的笔记，你有一个索引可以翻阅。到目前为止，完全没有问题。

At this point, it should become clear that you don’t need to wait for a genie to appear, as each step is clearly not only within your abilities, but also straightforward and well defined: Assemble notes and bring them into order, turn these notes into a draft, review it and you are done.

此时，你应该清楚地知道，你不需要等待精灵出现，因为每一步显然不仅在你的能力范围内，而且直接和明确。集合笔记，并将它们整理好，将这些笔记变成草稿，审查它，你就完成了。

Now, that's all well and good, you might say, but what about writing these notes? Obviously, it is easy to write a paper if the main part of the writing is already done and only needs to be turned into a linear text. But isn't that a little bit like saying: If you are short of money, just take what you need out of your piggy bank? Everyone can make things look easy by leaving out the main part. So, where is the genie for that?

现在，这一切都很好，你可能会说，但写这些笔记呢？显然，如果主要部分已经写完，只需要把它变成线性文本，那么写论文就很容易了。但这是不是有点像说。如果你缺钱，就从你的储蓄罐里取出你需要的东西？每个人都可以把主要部分省略掉，让事情看起来很简单。那么，精灵在哪里呢？

Granted, writing these notes is the main work. It will take enormous amounts of effort, time, patience and willpower, and you will probably break under the weight of this task. Just kidding. It is the easiest part of all. Writing these notes is also not the main work. Thinking is. Reading is. Understanding and coming up with ideas is. And this is how it is supposed to be. The notes are just the tangible outcome of it. All you have to do is to have a pen in your hand while you are doing what you are doing anyway (or a keyboard under your fingers). Writing notes accompanies the main work and, done right, it helps with it. Writing is, without dispute, the best facilitator for thinking, reading, learning, understanding and generating ideas we have. Notes build up while you think, read, understand and generate ideas, because you have to have a pen in your hand if you want to think, read, understand and generate ideas properly anyway. If you want to learn something for the long run, you have to write it down. If you want to really understand something, you have to translate it into your own words. Thinking takes place as much on paper as in

your own head. “Notes on paper, or on a computer screen [...] do not make contemporary physics or other kinds of intellectual endeavour easier, they make it possible,” neuroscientist Neil Levy concludes in the introduction to the Oxford Handbook of Neuroethics, summarizing decades of research. Neuroscientists, psychologists and other experts on thinking have very different ideas about how our brains work, but, as Levy writes: “no matter how internal processes are implemented, (you) need to understand the extent to which the mind is reliant upon external scaffolding.” (2011, 270) If there is one thing the experts agree on, then it is this: You have to externalise your ideas, you have to write. Richard Feynman stresses it as much as Benjamin Franklin. If we write, it is more likely that we understand what we read, remember what we learn and that our thoughts make sense. And if we have to write anyway, why not use our writing to build up the resources for our future publications?

诚然，写这些笔记是主要工作。它将花费巨大的精力、时间、耐心和意志力，你可能会在这项任务的重压下崩溃。开个玩笑。这是最简单的部分。写这些笔记也不是主要工作。思考是。阅读才是。理解和提出想法才是。而这本来就是这样的。笔记只是其中的具体成果。你所要做的就是在你做你正在做的事情的时候，手里要有一支笔，反正（或者手指下有一个键盘）。写笔记_伴随着主要的工作，如果做得好，它有助于工作。毫无疑问，写作是我们思考、阅读、学习、理解和产生想法的最佳促进因素。笔记是在你思考、阅读、理解和产生想法的同时建立起来的_，因为无论如何，如果你想正确地思考、阅读、理解和产生想法，你的手中必须有一支笔。如果你想长期学习某样东西，你必须把它写下来。如果你想真正理解某件事情，你必须把它转化为自己的语言。思考既要在纸上进行，也要在自己的脑子里进行。"纸上的笔记，或电脑屏幕上的笔记[.....]并没有让当代物理学或其他种类的智力努力变得更容易，而是让它成为可能。"神经科学家尼尔-莱维在《_牛津神经伦理学手册》的导言中总结了几十年的研究。神经科学家、心理学家和其他思维专家对我们的大脑是如何工作的有着截然不同的想法，但是，正如李维写道："无论内部过程是如何实施的，（你）都需要了解思维对外部支架的依赖程度"。(2011，270)如果有

一件事是专家们一致同意的，那么就是。你必须将你的想法外化， 你必须写。理查德–费曼和本杰明–富兰克林一样强调这一点。如果我们写作，我们更有可能理解我们所读到的东西，记住我们所学到的东西，并且我们的想法是有意义的。而如果我们无论如何都要写，为什么不利用我们的写作为我们未来的出版物积累资源呢?

Thinking, reading, learning, understanding and generating ideas is the main work of everyone who studies, does research or writes. If you write to improve all of these activities, you have a strong tailwind going for you. If you take your notes in a smart way, it will propel you forward.

思考、阅读、学习、理解和产生想法是每个学习、做研究或写作的人的主要工作。如果你的写作能提高这些活动的水平，你就有了强大的尾巴。如果你巧妙地做笔记，它将推动你前进。

2.1 Writing a paper step by step

2.1写论文步骤。

1. Make fleeting notes. Always have something at hand to write with to capture every idea that pops into your mind. Don't worry too much about how you write it down or what you write it on. These are fleeting notes, mere reminders of what is in your head. They should not cause any distraction. Put them into one place, which you define as your inbox, and process them later. I usually have a simple notebook with me, but I am happy with napkins or receipts if nothing else is at hand. Sometimes I leave a voice record on my phone. If your thoughts are already sorted and you have the time, you can skip this step and write your idea directly down as a proper, permanent note for your slip–box.

1.做短暂的笔记。手边总要有东西可以写，以捕捉你脑海中出现的每一个想法。不要太担心如何写下来，也不要担心写在什么地方。这些都是短暂的笔记，仅仅是提醒你脑海中的东西。它们不应该引起任何分心。把它们放到一个地方，你定义为你的收件箱，然后再处理它们。我通常会随身携

带一个简单的笔记本，但如果手头没有其他东西，我也乐意用餐巾纸或收据。有时候我也会在手机上留下一段语音记录。如果你的思路已经整理好了，而且你也有时间，你可以跳过这一步，直接把你的想法写下来，作为一个合适的、永久的笔记，放在你的便签箱里。

2. Make literature notes. Whenever you read something, make notes about the content. Write down what you don't want to forget or think you might use in your own thinking or writing. Keep it very short, be extremely selective, and use your own words. Be extra selective with quotes — don't copy them to skip the step of really understanding what they mean. Keep these notes together with the bibliographic details in one place — your reference system.

2、做文学笔记。每当你读到一些东西的时候，都要对内容做笔记。写下你不想忘记的内容，或者认为你可能会在自己的思考或写作中使用的内容。要非常简短，要有极强的选择性，并使用自己的文字。对引文要格外挑剔--不要为了跳过真正理解其含义的步骤而抄袭它们。将这些笔记和书目细节一起保存在一个地方--你的参考系统。

3. Make permanent notes. Now turn to your slip-box. Go through the notes you made in step one or two (ideally once a day and before you forget what you meant) and think about how they relate to what is relevant for your own research, thinking or interests. This can soon be done by looking into the slip-box — it only contains what interests you anyway. The idea is not to collect, but to develop ideas, arguments and discussions. Does the new information contradict, correct, support or add to what you already have (in the slip-box or on your mind)? Can you combine ideas to generate something new? What questions are triggered by them? Write exactly one note for each idea and write as if you were writing for someone else: Use full sentences, disclose your sources, make references and try to be as precise, clear and brief as possible. Throw away the fleeting notes from step one and put the literature notes from step two into your reference system. You can forget about them now. All that matters is going into the slip-box.

3.做永久性笔记。现在转到你的资料箱。翻阅您在第一步或第二步中做的笔记（最好每天一次，在您忘记自己的意思之前），并思考它们与您自己的研究、思考或兴趣相关的内容有什么关系。这一点很快就可以通过查看滑箱来完成--反正它只包含你感兴趣的东西。这个想法不是为了收集，而是为了发展思想、论点和讨论。新的信息是否与您已有的信息相矛盾，是否正确，是否支持或补充了您已有的信息（在资料箱中或在您的脑海中）？你能把想法结合起来产生新的东西吗？由它们引发了什么问题？为每一个想法准确地写下一张纸条，并像为别人写作一样写：使用完整的句子，披露你的来源，提供参考资料，并尽量做到精确、清晰和简短。扔掉第一步的昙花一现的笔记，把第二步的文献笔记放入你的参考系统。你现在可以忘记它们了。所有重要的是进入滑箱。

4. Now add your new permanent notes to the slip-box by:

4.现在将你的新的永久笔记添加到滑箱中，方法是：。

a) Filing each one behind one or more related notes (with a program, you can put one note “behind” multiple notes; if you use pen and paper like Luhmann, you have to decide where it fits best and add manual links to the other notes). Look to which note the new one directly relates or, if it does not relate directly to any other note yet, just file it behind the last one.

a)把每一个都归档在一个或多个相关的笔记后面(用程序的话，可以把一个笔记 "归档 "在多个笔记后面;如果像Luhmann那样用纸笔的话，就必须决定它最适合的位置，并手动添加其他笔记的链接)。看新的笔记与哪个笔记直接相关，如果还没有与其他笔记直接相关，就把它归档在上一个笔记后面。

b) Adding links to related notes.

b)添加相关笔记的链接。

c) Making sure you will be able to find this note later by either linking to it from your index or by making a link to it on a note that

you use as an entry point to a discussion or topic and is itself linked to the index.

c)确保你以后能够找到这个笔记，从你的索引中链接到它，或者在你作为讨论或话题的切入点的笔记上做一个链接，并且本身与索引链接。

5. Develop your topics, questions and research projects bottom up from within the system. See what is there, what is missing and what questions arise. Read more to challenge and strengthen your arguments and change and develop your arguments according to the new information you are learning about. Take more notes, develop ideas further and see where things will take you. Just follow your interest and always take the path that promises the most insight. Build upon what you have. Even if you don't have anything in your slip-box yet, you never start from scratch — you already have ideas on your mind to be tested, opinions to be challenged and questions to be answered. Do not brainstorm for a topic. Look into the slip-box instead to see where chains of notes have developed and ideas have been built up to clusters. Don't cling to an idea if another, more promising one gains momentum. The more you become interested in something, the more you will read and think about it, the more notes you will collect and the more likely it is that you will generate questions from it. It might be exactly what you were interested in from the beginning, but it is more likely that your interests will have changed — that is what insight does.

5.从系统内部自下而上地开发你的主题、问题和研究项目。看看有什么，缺什么，出现什么问题。多阅读，质疑和加强自己的论点，根据了解到的新信息，改变和发展自己的论点。多做笔记，进一步发展思路，看看事情的发展方向。只要跟着你的兴趣走，永远走有望获得最深刻见解的道路。以你所拥有的东西为基础。即使你的滑板箱里还没有任何东西，你也永远不会从头开始--你的脑海里已经有了需要检验的想法、需要挑战的观点和需要回答的问题。不要为一个主题进行头脑风暴。而是要看一看滑箱中的笔记链在哪里发展起来，想法在哪里被建立起来，形成了集群。如果另一个更有前途的想法获得了动力，就不要执着于这个想法。你对某件事情

越感兴趣，你就会读得越多，想得越多，你收集的笔记就越多，你就越有可能从中产生问题。它可能正是你一开始就感兴趣的东西，但你的兴趣更有可能发生了变化，这就是洞察力的作用。

6. After a while, you will have developed ideas far enough to decide on a topic to write about. Your topic is now based on what you have , not based on an unfounded idea about what the literature you are about to read might provide. Look through the connections and collect all the relevant notes on this topic (most of the relevant notes will already be in partial order), copy them onto your “desktop”[6] and bring them in order. Look for what is missing and what is redundant. Don’t wait until you have everything together. Rather, try ideas out and give yourself enough time to go back to reading and note-taking to improve your ideas, arguments and their structure.

6.一段时间后，你的想法会发展到足以决定一个主题来写。你的主题现在是基于你所拥有的_ ，而不是基于你即将阅读的文献可能提供的毫无根据的想法。通过联系看，收集这个主题的所有相关笔记（大部分相关笔记已经有部分顺序了），把它们复制到你的 "桌面"[6]，并把它们按顺序排列。寻找缺少的内容和多余的内容。不要等到你把所有的东西都凑齐了。相反，把想法试一试，给自己足够的时间回去阅读和记笔记，以改进你的想法、论点及其结构。

7. Turn your notes into a rough draft. Don’t simply copy your notes into a manuscript. Translate them into something coherent and embed them into the context of your argument while you build your argument out of the notes at the same time. Detect holes in your argument, fill them or change your argument.

7.把你的笔记变成草稿。不要简单地将你的笔记复制到手稿中。把它们翻译成连贯的东西，并把它们嵌入到你的论点的上下文中，同时你要从笔记中建立你的论点。检测你论点中的漏洞，填补它们或改变你的论点。

8. Edit and proofread your manuscript. Give yourself a pat on the shoulder and turn to the next manuscript.

8.编辑和校对你的稿件。拍拍自己的肩膀，转入下一篇稿子。

These are the steps, presented as if you will write only one paper/article at a time. In reality, you never work on just one idea, but many ideas in different stages at the same time. And that is where the system plays out its real strengths. We cannot help but think about more than one question at a time and the chances are that you will think and write in the future as well. It might not be for academia or a publication, but certainly for your own intellectual growth. Gather what you encounter along your way and don't let any good idea go to waste. You might read a certain book in hope it could be useful for one of the papers you write. Maybe you are wrong, but it still might contain some interesting thoughts worth keeping and useful for something else you haven't thought about yet.

这些步骤，呈现在你每次只会写一篇论文/文章的情况下。实际上，你从来都不是只写一个想法，而是同时写许多不同阶段的想法。而这正是系统发挥其真正优势的地方。我们不能不同时思考多个问题，将来你也有机会思考和写作。可能不是为了学术，也不是为了发表，但肯定是为了自己的知识成长。把你一路上遇到的东西收集起来，不要让任何一个好的想法白白浪费。你可能会读某本书，希望它能对你写的某篇论文有用。也许你错了，但它仍然可能包含一些有趣的想法，值得保留，对你还没有想到的其他东西有用。

In truth, it is highly unlikely that every text you read will contain exactly the information you looked for and nothing else. Otherwise, you must have already known what was in there and wouldn't have had reason to read it in the first place.[7] As the only way to find out if something is worth reading is by reading it (even just bits of it), it makes sense to use the time spent in the best possible way. We constantly encounter interesting ideas along the way and only a

fraction of them are useful for the particular paper we started reading it for. Why let them go to waste? Make a note and add it to your slip-box. It improves it. Every idea adds to what can become a critical mass that turns a mere collection of ideas into an idea-generator.

事实上，你读到的每一篇文字都极有可能完全包含你所寻找的信息，而不是其他。否则，你肯定已经知道里面的内容，也就不会有理由在第一时间阅读它了。[7]由于只有通过阅读（哪怕只是其中的一些片段）才能发现某件事是否值得阅读，所以尽可能地利用所花的时间是有意义的。我们在路上不断遇到有趣的想法，而其中只有一小部分对我们开始阅读它的特定论文有用。为什么要让它们被浪费掉呢？做个记录，并将其添加到你的滑板箱中。它可以改善它。每一个想法都会增加到一个临界质量，将一个单纯的想法收集变成一个想法生成器。

A typical work day will contain many, if not all, of these steps: You read and take notes. You build connections within the slip-box, which in itself will spark new ideas. You write them down and add them to the discussion. You write on your paper, notice a hole in the argument and have another look in the file system for the missing link. You follow up on a footnote, go back to research and might add a fitting quote to one of your papers in the making.

一个典型的工作日将包含许多，如果不是全部，这些步骤。你阅读并做笔记 你在滑板箱中建立联系，这本身就会激发新的想法。你把它们写下来，并把它们添加到讨论中。你写在纸上，注意到论点中的一个漏洞，并在文件系统中再次查找缺失的链接。你跟进一个脚注，回去研究，可能会在你的一篇正在制作的论文中加入一段合适的引文。

How focused you want to read depends on your priorities. You don't have to read anything you don't consider an absolute necessity for finishing your most urgent paper, but you will still encounter a lot of other ideas and information along the way. Spending the little extra time to add them to your system will make all the difference,

because the accidental encounters make up the majority of what we learn.

你想阅读的专注程度取决于你的优先级。你不必阅读任何你不认为是完成你最紧急的论文的绝对必要的东西，但你仍然会在路上遇到很多其他的想法和信息。多花一点时间把它们添加到你的系统中，会有很大的不同，因为偶然遇到的东西占了我们学习的大部分。

Imagine if we went through life learning only what we planned to learn or being explicitly taught. I doubt we would have even learned to speak. Each added bit of information, filtered only by our interest, is a contribution to our future understanding, thinking and writing. And the best ideas are usually the ones we haven't anticipated anyway.

想象一下，如果我们一生只学习我们计划要学习的东西或被明确教导的东西。我怀疑我们甚至会学会说话。每增加一点信息，只经过我们的兴趣过滤，都是对我们未来理解、思考和写作的贡献。而最好的想法通常是我们无论如何也没有预料到的。

Most people follow different lines of thought at the same time. They might focus for a while on one idea, but then leave it alone for another while until they see how to proceed further. It is helpful then to be able to pick up on another idea now and go back to the earlier thought later. It is much more realistic to keep this flexibility and you don't have to worry about starting all over.

大多数人同时遵循不同的思路。他们可能会把注意力集中在一个想法上一段时间，但又会把它搁置一段时间，直到他们看到如何进一步进行。那么，现在能够拾起另一个想法，稍后再回到先前的想法，就会有所帮助。保持这种灵活性会更现实，你不必担心从头开始。

3 Everything You Need to Have

＃3你需要拥有的一切

There is this story where NASA tried to figure out how to make a ballpoint pen that works in space. If you have ever tried to use a ballpoint pen over your head, you have probably realised it is gravity that keeps the ink flowing. After a series of prototypes, several test runs and tons of money invested, NASA developed a fully functional gravity-independent pen, which pushes the ink onto the paper by means of compressed nitrogen. According to this story, the Russians faced the same problem. So they used pencils (De Bono, 1998, 141). The slip-box follows the Russian model: Focus on the essentials, don't complicate things unnecessarily.

有这样一个故事，美国宇航局试图找出如何制造一支在太空中工作的圆珠笔。如果你曾经尝试过用圆珠笔顶在头上，你可能已经意识到是重力让墨水流动起来。在经过一系列的原型、数次测试和大量资金的投入后，美国宇航局开发出了一款功能齐全的不受重力影响的笔，它通过压缩氮气将墨水推到纸上。根据这个故事，俄罗斯人也面临同样的问题。于是他们使用了铅笔（De Bono，1998，141）。滑箱沿用了俄国人的模式。专注于本质，不要把事情不必要地复杂化。

Academic writing in itself is not a complicated process that requires a variety of complicated tools, but is in constant danger of being clogged with unnecessary distractions. Unfortunately, most students collect and embrace over time a variety of learning and note-taking techniques, each promising to make something easier, but combined have the opposite effect.

学术写作本身并不是一个复杂的过程，需要各种复杂的工具，但却时刻面临着被不必要的干扰所堵塞的危险。不幸的是，大多数学生在一段时间内收集和接受了各种学习和笔记技巧，每一种技巧都有望使一些事情变得更容易，但结合起来却有相反的效果。

The whole workflow becomes complicated: There is the technique of underlining important sentences (sometimes in different colours or

shapes), commenting in the margins of a text, writing excerpts, employing reading methods with acronyms like SQ3R[8] or SQ4R,[9] writing a journal, brainstorming a topic or following multi-step question sheets — and then there are, of course, the one thousand and twelve apps and programs that are supposed to help with learning and writing. Few of these techniques are particularly complicated in themselves, but they are usually used without any regard to the actual workflow, which then quickly becomes a mess. As nothing really fits together, working within this arrangement becomes extremely complicated indeed and difficult to get anything done.

整个工作流程变得复杂起来。有在重要句子上划线的技巧(有时用不同的颜色或形状)，在文本的空白处注释，写摘录，采用缩写的阅读方法，如SQ3R[[8]](part0000_split_023. html#_ftn8）或SQ4R，[9]写日记，头脑风暴一个主题或按照多步骤的问题单来做--当然，还有一千零一十二个应用程序和程序，这些都是应该帮助学习和写作的。这些技巧本身很少有特别复杂的，但通常都是在不考虑实际工作流程的情况下使用的，然后很快就变得一团糟。由于没有任何东西真正适合在一起，在这种安排下工作确实变得非常复杂，很难完成任何事情。

And if you stumble upon one idea and think that it might connect to another idea, what do you do when you employ all these different techniques? Go through all your books to find the right underlined sentence? Reread all your journals and excerpts? And what do you do then? Write an excerpt about it? Where do you save it and how does this help to make new connections? Every little step suddenly turns into its own project without bringing the whole much further forward. Adding another promising technique to it, then, would make things only worse.

如果你偶然发现了一个想法，并认为它可能会与另一个想法联系起来，当你采用所有这些不同的技术时，你会怎么做？翻阅你所有的书籍，寻找正确的下划线句子？重读你所有的日记和摘录？然后你会怎么做？写一篇摘录？你把它保存在哪里，这对建立新的联系有什么帮助？每一个小步骤突

然变成了自己的项目，却没有把整个项目向前推进多少。那么，再给它增加一个有前途的技术，只会让事情变得更糟。

That is why the slip-box is not introduced as another technique, but as a crucial element in an overarching workflow that is stripped of everything that could distract from what is important. Good tools do not add features and more options to what we already have, but help to reduce distractions from the main work, which here is thinking. The slip-box provides an external scaffold to think in and helps with those tasks our brains are not very good at, most of all objective storage of information.

这就是为什么滑箱不是作为另一种技术引入的，而是作为一个总体工作流程中的一个关键要素，它被剥离了一切可能分散重要内容的东西。好的工具并不是给我们已有的工具增加功能和更多的选择，而是帮助减少对主要工作的干扰，这里的主要工作就是思考。滑箱提供了一个外部的脚手架，可以让我们在其中进行思考，并帮助我们的大脑完成那些不擅长的工作，最重要的是客观存储信息。

That is pretty much it. To have an undistracted brain to think with and a reliable collection of notes to think in is pretty much all we need. Everything else is just clutter.

差不多就是这样。有一个不分心的大脑来思考，有一个可靠的笔记集来思考，这几乎就是我们所需要的。其他的东西都是杂乱无章的。

3.1 The Tool Box

3.1 工具箱。

We need four tools:

我们需要四种工具。

· Something to write with and something to write on (pen and paper will do)

- 有东西可以写，有东西可以写(纸和笔就可以)

· A reference management system (the best programs are free)

- 参考管理系统(最好的程序是免费的)

· The slip-box (the best program is free)

- 滑箱(最好的程序是免费的)

· An editor (whatever works best for you: very good ones are free)

- 一个编辑器(不管是什么最适合你的编辑器：非常好的编辑器是免费的)

More is unnecessary, less is impossible.

多了没必要，少了不可能。

1. You need something to capture ideas whenever and wherever they pop into your head. Whatever you use, it should not require any thoughts, attention or multiple steps to write it down. It can be a notebook, a napkin, an app on your phone or iPad. These notes are not meant to be stored permanently. They will be deleted or chucked soon anyway. They only function as a reminder of a thought and are not meant to capture the thought itself, which requires time to phrase proper sentences and check facts. I recommend having pen and paper with you at all times. It is really hard to beat a notebook in its simplicity. If you use other tools, make sure everything ends up in one place, a central inbox or something like that, where you can process it soon, ideally within a day.

2. 你需要一些东西来捕捉随时随地出现在你脑海中的想法。无论你用什么，它都不应该需要任何思想、注意力或多个步骤来写下来。它可以是一本笔记本、一张餐巾纸、手机或iPad上的一个应用。这些笔记并不是要永久保存的。反正它们很快就会被删除或扔掉。它们

只起到提醒思想的作用，并不是为了捕捉思想本身，这需要时间来措辞适当的句子和检查事实。我建议随时带着笔和纸。它的简单性真的很难打败笔记本。如果你使用其他工具，确保所有的东西最后都放在一个地方，一个中央收件箱或类似的地方，你可以很快地处理它，最好是在一天之内。

3. The reference system has two purposes: To collect the references (duh) and the notes you take during your reading. I strongly recommend using a free program like Zotero, which allows you to make new entries via browser plugins or just by entering the ISBN or digital object identifier (DOI) number. Zotero also can be integrated into Microsoft Word, OpenOffice, LibreOffice and NeoOffice, which allows you to insert quotations without actually typing in the reference. That not only makes things easier, you also mitigate the risk of messing things up when you add, edit or delete additional references. You can also easily change the format according to the standards required by your professors or the journal you write for. You can add notes to each entry — but it would also be fine to write your notes by hand and link them to the reference if you prefer to write by hand at this stage. In that case, just give the notes a standardised title like “AuthorYear” and keep them in alphabetical order in one place. You can download Zotero for free at zotero.org (Windows, Mac and Linux). You will find the links to all recommended programs on takesmartnotes.com.[10] If you prefer or already work with another, equally simple program, there is no reason not to use that.

4. 参考系统有两个目的。收集参考文献(duh)和你在阅读过程中做的笔记。我强烈建议使用像Zotero这样的免费程序，它可以让你通过浏览器插件或只需输入ISBN或数字对象标识符(DOI)号就可以进行新的记录。Zotero还可以集成到Microsoft Word、OpenOffice、LibreOffice和NeoOffice中，这样你就可以在不实际输入参考文献的情况下插入引文。这不仅让事情变得更简单，你也减轻了在添

加、编辑或删除额外的参考资料时搞乱事情的风险。您还可以根据您的教授或您所写的期刊所要求的标准轻松地更改格式。你可以为每个条目添加注释--但如果你喜欢在这个阶段手写注释并将其链接到参考文献，也可以。在这种情况下，只要给笔记起一个标准化的标题，比如 "AuthorYear"，并将它们按字母顺序放在一个地方即可。你可以在zotero.org免费下载Zotero（Windows、Mac和Linux）。你可以在takesmartnotes.com上找到所有推荐程序的链接。[10]如果你喜欢或已经在使用另一个同样简单的程序，没有理由不使用它。

5. The slip-box. Some prefer the old-fashioned pen and paper version in a wooden box. That's fine — computers can only speed up a relatively minor part of the work anyway, like adding links and formatting references. They can't speed up the main part of the work, which is thinking, reading and understanding. All you would need are sheets of paper about the size of a postcard (Luhmann used the DIN A6 size, 148 x 105 mm or 5.83 x 4.13 inches) and a box to keep them in. And even though there are clear benefits of handwriting (cf. below chapter 3.2.1), I recommend using the digital version, if only for mobility. Even though you could basically emulate the slip-box with any program that allows setting links and tagging (like Evernote or a Wiki), I strongly recommend using Daniel Lüdecke's Zettelkasten. It is the only program I know that really implements the principles behind Luhmann's system and is at the same time simple and easy to use. It is free and available for different operating systems. You can download it from zettelkasten.danielluedecke.de (please consider sending a donation to the developer if you like it).

6. 滑箱。有些人喜欢老式的纸笔版，装在木盒里。这很好--反正电脑只能加快工作中相对较小的一部分，比如添加链接和格式化参考资料。它们无法加快工作的主要部分，即思考、阅读和理解。你所需要的只是和明信片差不多大小的纸张（Luhmann使用的是DIN A6尺寸，148 x 105毫米或5.83 x 4.13英寸）和一个盒子来存放它们。而

且即使手写有明显的好处（参见下面3.2.1章），我还是建议使用数字版，如果只是为了移动性的话。尽管你基本上可以用任何允许设置链接和标签的程序（如Evernote或Wiki）来模拟滑盖箱，但我强烈建议使用Daniel Lüdecke的Zettelkasten。它是我所知道的唯一一款真正实现Luhmann系统背后的原理，同时又简单易用的程序。它是免费的，并且适用于不同的操作系统。你可以从zettelkasten.danielluedecke.de下载它（如果你喜欢它，请考虑给开发者捐款）。

7. Finally, the editor: If you use Zotero, I recommend using one of the editors it is compatible with (Microsoft Word, OpenOffice, LibreOffice or NeoOffice), because it makes life a lot easier if you don't have to type in every reference manually. Except for that, everything works fine — no editor can improve an argument.

8. 最后，编辑器：如果你使用Zotero，我建议使用它所兼容的编辑器之一（Microsoft Word，OpenOffice，LibreOffice或NeoOffice），因为如果你不必手动输入每一个参考资料，生活就会变得更轻松。除此以外，一切都很好用--没有编辑器可以改进一个论点。

If you have pen and paper, an editor, your slip-box and reference system at hand, you are ready to go.

如果你有笔和纸，一个编辑器，你的滑箱和参考系统在手，你已经准备好了。

4 A Few Things to Keep in Mind

＃4一些需要注意的事情。

Getting the tools ready shouldn't have taken more than 5–10 minutes. But having the right tools is only one part of the equation.

It is easy to get fooled by their simplicity. Many “tried them out” without really understanding how to work with them and were expectedly disappointed with the results. Tools are only as good as your ability to work with them. Everybody knows how to handle a flute (you blow into one end and press your fingers on the holes according to the notes you are playing), but nobody would try it out once and then judge the instrument on what they hear.[11]

准备好工具应该不会超过5–10分钟。但拥有合适的工具只是其中的一部分。很容易被它们的简单性所愚弄。许多人在没有真正了解如何使用它们的情况下就 "试一试"，结果预料中的失望。工具的好坏，取决于你使用它们的能力。每个人都知道如何处理笛子（你对着笛子的一端吹气，然后根据你要吹的音符用手指按在孔上），但是没有人会试一次，然后根据听到的声音来判断这个乐器。[11]

But with tools like the slip–box, we sometimes forget that the handling is as important as the possibilities of the tool itself. If we try to use a tool without putting any thought into the way we work with it, even the best tool would not be of much help. The slip–box, for example, would most likely be used as an archive for notes — or worse: a graveyard for thoughts (cf. Hollier 2005, 40 on Mallarmé’s index cards). Unfortunately, there are quite a few explanations of Luhmann’s technique on the Internet that focus in a misleading way on the technicalities of the slip–box. This has led to plenty of misconceptions about its abilities. But things are changing: Luhmann’s slip– box is currently the object of a long–term research project at the University of Bielefeld, and their first results have already given us a comprehensive understanding about how Luhmann really worked with it. You can look up for yourself some of his notes on their website.[12] Soon, you will be able to access the whole digitalised slip–box online. Add to this understanding recent psychological insights about learning, creativity and thinking, and we also get a pretty good picture why it works. And it is indeed crucially important not only to know how it works or how to work with it, but also why it works. Only then will you be able to tweak it for your own

needs. And this is what this book is for: To give you all the resources you need to work in the best possible way with the best technique available. By keeping just a few basic principles in mind and with an understanding of the logic behind the file system, I see no reason why anyone should not be able to replicate Luhmann's formula for successful learning, writing and research.

但是，对于像滑箱这样的工具，我们有时会忘记，操作与工具本身的可能性同样重要。如果我们试图使用一个工具而不考虑如何使用它，那么即使是最好的工具也不会有太大的帮助。例如，滑箱很可能会被用作笔记的档案库--或者更糟糕的是：思想的坟场（参见Hollier 2005，40关于Mallarmé的索引卡）。遗憾的是，互联网上有不少关于Luhmann技术的解释，以一种误导的方式集中在滑箱的技术细节上。这导致了很多对其能力的误解。但事情正在发生变化。卢曼的滑盖箱目前是比勒费尔德大学一个长期研究项目的对象 他们的第一批成果已经让我们对卢曼如何使用它有了一个全面的了解。你可以在他们的网站上自己查找一些他的笔记。[12]很快，你就可以在网上访问整个数字化的滑箱。再加上最近关于学习、创造力和思维的心理学见解，我们也能很好地了解_为什么它能发挥作用。不仅要知道它是如何工作或如何使用它，还要知道它为什么工作，这的确是至关重要的。只有这样，你才能根据自己的需要对它进行调整。而这正是本书的目的。给你所有的资源，你需要以最好的方式工作 用最好的技术。只要记住几个基本原则，并了解文件系统背后的逻辑，我认为任何人都没有理由不能够复制Luhmann的公式，从而获得成功的学习、写作和研究。

5 Writing Is the Only Thing That Matters

＃5写作是唯一重要的事情。

For students, the need for writing mainly appears in the form of examination. In this understanding, the written work represents a

preceded performance, namely learning, understanding and the ability to analyse other texts critically. By writing, students demonstrate what they have learned, show their ability to think critically and ability to develop ideas. This understanding is related to the idea that students prepare for independent research. In this mindset, the writing of a paper is just another skill to be learned. It is compartmentalised from the other tasks — it is seen as one task among others. Students should not only learn to write papers, but also learn facts, be able to discuss their ideas in seminars and listen carefully to lectures. Writing papers is seen as a task in itself with a beginning and an end. Almost all books written on academic writing start from this assumption. And almost all of them proceed accordingly, describing an idealised process in certain consecutive steps.

对于学生来说，写作的需求主要以考试的形式出现。在这种理解中，书面作品_代表了一种先期的表现，即学习、理解和批判性分析其他文本的能力。通过写作，学生_展示自己所学的知识，表现出批判性思维的能力和立意的能力。这种理解与学生_准备_独立研究的思想有关。在这种思想下，论文的写作只是另一种需要学习的技能。它与其他任务被分割开来--它被视为其他任务中的一项任务。学生不仅要学会写论文，还要学会事实，能够在研讨会上讨论自己的想法，认真听讲。写论文被看作是一项有始有终的任务。几乎所有关于学术写作的书籍都是从这个假设出发的。而且几乎所有的书都据此展开，以某些连续的步骤描述了一个理想化的过程。

First, the task to write is given, then there is the challenge to find a topic or a specific angle on a problem, the research to do, starting with the collection of the relevant literature, followed by reading the material, processing it and coming to a conclusion. Writing is what follows: In the beginning stands the question to be answered, followed by an overview of the literature, the discussion of it and the conclusion. This, according to this thinking, prepares you for doing independent research. Alas, it does not. If you become successful in

your research, it was not because you learned to approach writing in this way, but despite it.

首先，给出了写作的任务，然后是挑战，找到一个主题或问题的特定角度，要做的研究，从收集相关文献开始，接着是阅读材料，处理材料，得出结论。接下来就是写作了。开头站着要回答的问题，接着是对文献的概述，对文献的讨论和结论。按照这种思路，这就为做独立研究做了准备。唉，事实并非如此。如果你在研究中变得成功，那不是因为你学会了以这种方式进行写作，而是_尽管如此。

This book is based on another assumption: Studying does not prepare students for independent research. It is independent research. Nobody starts from scratch and everybody is already able to think for themselves. Studying, done properly, is research, because it is about gaining insight that cannot be anticipated and will be shared within the scientific community under public scrutiny. There is no such thing as private knowledge in academia. An idea kept private is as good as one you never had. And a fact no one can reproduce is no fact at all. Making something public always means to write it down so it can be read. There is no such thing as a history of unwritten ideas.

这本书是基于另一个假设。学习并不能让学生做好独立研究的准备。它_是_独立的研究。没有人从零开始，每个人都已经能够自己思考。学习，如果做得好，就是研究，因为它是为了获得无法预料的洞察力，并将在公众监督下在科学界分享。在学术界，没有所谓的私人知识。一个想法保持私密，就像你从来没有过一样。而一个没有人可以复制的事实根本就不是事实。把某件事情公之于众，总是意味着要把它写下来，以便人们可以阅读。不存在未成文的思想史。

School is different. Pupils are usually not encouraged to follow their own learning paths, question and discuss everything the teacher is teaching and move on to another topic if something does not promise to generate interesting insight. The teacher is there for the pupils to learn. But, as Wilhelm von Humboldt, founder of the

Humboldt University of Berlin and brother to the great explorer Alexander von Humboldt, put it, the professor is not there for the student and the student not for the professor. Both are only there for the truth. And truth is always a public matter. Everything within the university aims at some kind of publication. A written piece does not necessarily need to be accepted in an international journal to become public. In fact, the vast majority of what is written and discussed is not published in this narrow sense. The review process itself is a form of presenting an idea publicly to the peers and so is everything a student hands over to a professor or lecturer. Even the handout for a presentation discussed with fellow students is a written piece made public. It is public because in the discussion, it does not matter anymore what the author meant , only what is there in writing. The moment the author can be removed from the scene, the written piece is a public claim on truth. The criteria for a convincing argument are always the same, regardless of who the author is or the status of the publisher: They have to be coherent and based on facts. Truth does not belong to anyone; it is the outcome of the scientific exchange of written ideas. This is why the presentation and the production of knowledge cannot be separated, but are rather two sides of the same coin (Peters and Schäfer 2006, 9). If writing is the medium of research and studying nothing else than research, then there is no reason not to work as if nothing else counts than writing.

学校则不同。通常不鼓励学生按照自己的学习路径，对老师所教的一切进行质疑和讨论，如果有些东西不有望产生有趣的见解，就会转到另一个话题。老师是为了让学生学习而存在的。但是，正如柏林洪堡大学的创始人、伟大的探险家亚历山大–冯–洪堡的弟弟威廉–冯–洪堡所说，教授不是为了学生而存在，学生也不是为了教授而存在。两者都只为真理而存在。而真理永远是一件公共事务。大学内部的一切都以某种发表为目的。一篇写好的文章不一定要被国际期刊录用才是公共的。事实上，绝大多数的写作和讨论都不是这种狭义上的发表。评审过程本身就是向同行公开展示思想的一种形式，学生交给教授或讲师的一切也是如此。即使是和同学

们讨论的演讲的讲义，也是公开的书面作品。它之所以是公开的，是因为在讨论中，作者的意思_已经不重要了，只有书面的东西才重要。当作者可以离开现场的那一刻，这篇书面作品就是对真理的公开主张。一个令人信服的论点的标准总是一样的，不管作者是谁，也不管出版商的地位如何。它们必须是连贯的和基于事实的。真理不属于任何人，它是书面思想科学交流的结果。这就是为什么知识的呈现和生产不能分开，而是一个硬币的两面(Peters and Schäfer 2006, 9)。如果写作是研究的媒介，而研究除了研究之外别无他物，那么没有理由不把工作当作除了写作之外别无他物的工作。

Working as if nothing else counts than writing does not mean spending more time writing at the expense of everything else. Only if we compartmentalise our work into different, isolated tasks will it seem like focusing on writing reduces the time we spend on other tasks. But it does not mean to read less, for this is the main source of the writing material. It doesn't mean to attend fewer lectures or seminars, because they provide you with the ideas to write about and questions worth answering. Attending lectures is also one of the best ways to get an idea about the current state of research, not to mention the ability to ask and discuss questions. Focusing on writing also doesn't mean to stop giving presentations or finding other ways of making your thoughts public. Where else could you get feedback for your ideas?

工作时，好像除了写作之外，其他的事情都不重要，但这并不意味着花更多的时间去写作，而牺牲其他一切。只有当我们把工作划分为不同的、孤立的任务时，才会显得专注于写作，减少了我们花在其他任务上的时间。但这并不意味着要减少阅读量，因为这是写作材料的主要来源。这并不意味着要少参加讲座或研讨会，因为它们为你提供了写作的思路和值得回答的问题。参加讲座也是了解研究现状的最佳途径之一，更不用说能够提出和讨论问题了。专注于写作也并不意味着要停止做演讲或寻找其他方式将自己的想法公之于众。你的想法还能从哪里得到反馈?

Focusing on writing as if nothing else counts does not necessarily mean you should do everything else less well, but it certainly makes

you do everything else differently. Having a clear, tangible purpose when you attend a lecture, discussion or seminar will make you more engaged and sharpen your focus. You will not waste your time with the attempt to figure out what you “should” learn. Rather, you will try to learn as efficiently as possible so you can quickly get to the point where actual open questions arise, as these are the only questions worth writing about. You quickly learn to distinguish good-sounding arguments from actual good ones, as you will have to think them through whenever you try to write them down and connect them with your previous knowledge. It will change the way you read as well: You will become more focused on the most relevant aspects, knowing that you cannot write down everything. You will read in a more engaged way, because you cannot rephrase anything in your own words if you don’t understand what it is about. By doing this, you will elaborate on the meaning, which will make it much more likely that you will remember it. You also have to think beyond the things you read, because you need to turn it into something new. And by doing everything with the clear purpose of writing about it, you will do what you do deliberately. Deliberate practice is the only serious way of becoming better at what we are doing (cf. Anders Ericsson, 2008). If you change your mind about the importance of writing, you will also change your mind about everything else. Even if you decide never to write a single line of a manuscript, you will improve your reading, thinking and other intellectual skills just by doing everything as if nothing counts other than writing.

专注于写作，好像其他的事情都不重要，并不一定意味着你应该把其他的事情都做得不那么好，但它肯定会让你做其他的事情_不同。当你参加讲座、讨论或研讨会时，有一个明确、具体的目的，会让你更加投入，并使你的注意力更加集中。你不会把时间浪费在试图找出你 "应该 "学习的东西上。相反，你会尝试尽可能高效地学习，这样你就能迅速进入实际开放性问题出现的阶段，因为这些问题是唯一值得写的问题。你很快就会学会区分好听的论点和实际的好论点，因为每当你想把它们写下来，并把它们

和你以前的知识联系起来的时候，你就必须把它们想清楚。这也会改变你的阅读方式。你会变得更加专注于最相关的方面，知道你不可能把所有的东西都写下来。你会以一种更投入的方式阅读，因为如果你不明白它的内容，你就无法用自己的话重新表述。通过这样的方式，你会对意思进行阐述，这样你记住它的可能性就会大大增加。你还必须超越你读到的东西，因为你需要把它变成新的东西。而做任何事情都要有明确的目的，写出它，你就会做你所做的事情_刻意。慎重的实践是唯一能让我们在所做的事情上变得更好的严肃方式（参见Anders Ericsson，2008）。如果你改变了你对写作重要性的看法，你也会改变你对其他一切的看法。即使你决定永远不写一行稿子，你也会提高你的阅读、思考和其他知识技能，只要做每一件事_好像除了写作之外什么都不重要。

6 Simplicity Is Paramount

#6简单是最重要的。

We tend to think that big transformations have to start with an equally big idea. But more often than not, it is the simplicity of an idea that makes it so powerful (and often overlooked in the beginning). Boxes, for example, are simple. Malcom McLean, the owner of a trucking company and a former trucker himself, regularly got stuck in traffic on the crowded coastal highways. When he came up with an idea to circumvent the congested roads, it was a simple one. He had no clue that it would tip the world in a new direction. He did not foresee that his simple idea would reshape the political landscape, let some nations rise to the top and other fall behind, make century-old professions redundant, give birth to new industries, and would barely leave a single person on earth unaffected by it. I am speaking, of course, of the shipping container, which is basically just a box. When McLean converted the tanker Ideal X to be able to carry 58 containers and set it to sail on 26 April 1956, it was just because it made more sense to ship parts of a lorry than the whole lorry itself, which in itself made more sense

than to have them stand in traffic for days. He certainly did not aim to turn world trade upside down and pave the way for Asia to become the next big economic power. He just didn't want to get stuck in traffic anymore.

我们往往认为，大的变革必须从一个同样大的想法开始。但更多的时候，正是一个想法的简单性让它变得如此强大（而且往往在开始时被忽视）。例如，盒子就很简单。Malcom McLean是一家卡车运输公司的老板，他自己也曾是一名卡车司机，经常在拥挤的沿海高速公路上堵车。当他想出一个规避拥堵道路的主意时，那是一个简单的主意。他没有想到，这将会给世界带来新的提示。他没有预料到他的简单想法会重塑政治格局，让一些国家崛起，另一些国家落后，让百年老字号变得多余，催生新的产业，几乎没有一个人不受其影响。当然，我说的是海运集装箱，它基本上只是一个盒子。当麦克莱恩把 "理想X "号油轮改装成可以装载58个集装箱，并于1956年4月26日启航时，只是因为装运货车的零件比装运整辆货车本身更有意义，这本身就比让它们在交通中站立几天更有意义。他的目的当然不是要颠覆世界贸易，为亚洲成为下一个经济大国铺平道路。他只是不想再被堵在路上了。

It wasn't just that nobody foresaw the impact of something as simple as this box. Most ship owners had in fact considered the idea of putting different kinds of products into the same sized boxes as fairly abstruse. Experienced stevedores were able to use the storage room on a ship optimally by arranging and fitting the goods, and every good came in its optimal package. Why replace it with an obviously less optimal solution? And speaking of suboptimal, why would anyone want to try to fit square boxes into a round-shaped ship body anyway? Ship owners also didn't have many customers who wanted to ship exactly the amount that fit into a container. That either left customers unhappy or containers half empty or filled with goods from different customers, which meant that you had to unpack and rearrange the containers to untangle different orders in every single harbour. That did not sound very efficient to the ears of experienced shippers. And then you had the problem with the boxes themselves. Once unloaded and sent off on trucks, you had to find a

way to get them back. McLean lost hundreds of containers this way. It was a logistical nightmare.

不仅仅是没有人预见到这个箱子这么简单的东西的影响。大多数船东其实都认为把不同种类的产品装进同样大小的箱子里是相当深奥的想法。有经验的装卸工人通过对货物的摆放和装配，能够优化利用船上的储藏室，每一件货物都有其最佳的包装。为什么要用一个明显不太理想的方案来代替呢？说到次优，反正为什么有人要尝试把方盒子装进圆型船体呢？船东们也没有多少客户愿意完全按照装进集装箱的数量来运输。这样一来，要么让客户不满意，要么集装箱半空，要么装满了不同客户的货物，这就意味着你必须拆开集装箱，重新排列，以解开每一个港口的不同订单。在有经验的托运人看来，这听起来不是很有效率。然后，你还有箱子本身的问题。一旦被卸下并送上卡车，你就得想办法把它们找回来。McLean就这样丢失了数百个集装箱。这是一个物流的噩梦。

And by the way: McLean wasn't the only one who had the idea to use containers on ships. Many others tried it, too, and almost all gave up on the idea soon after — not because they were too stubborn to accept a great idea, but because they lost too much money on it (Levinson, 2006, 45f). The idea was simple, but it wasn't easy to put it efficiently into practice.

顺便说一句 麦克莱恩并不是唯一一个有在船上使用集装箱的想法的人。其他许多人也尝试过，但几乎所有的人都在不久之后放弃了这个想法--不是因为他们太固执，不愿意接受一个伟大的想法，而是因为他们在这个想法上损失了太多的钱（Levinson, 2006, 45f）。这个想法很简单，但要有效地将其付诸实践并不容易。

In hindsight, we know why they failed: The ship owners tried to integrate the container into their usual way of working without changing the infrastructure and their routines. They tried to benefit from the obvious simplicity of loading containers onto ships without letting go of what they were used to. In the beginning, the perception was very much shaped by what worked before, and only the most immediate effects were visible. The ship owners looked at

the bags and crates of goods and wondered why they should pack them a second time into another box. They were glad when they unloaded their goods at the harbour and they were eager to move on. They wondered why they should go container– hunting instead. They looked at the ships they had and wondered how to fit containers into them. McLean understood better than others that it is not the perspective of the ship–owners that counts, but the purpose of the whole trade: to bring goods from the producer to the final destination. Only after aligning every single part of the delivery chain, from packaging to delivery, from the design of the ships to the design of the harbours, was the full potential of the container unleashed.

事后看来，我们知道他们失败的原因。船东试图将集装箱融入他们的惯常工作方式，而不改变基础设施和日常工作。他们试图从集装箱装船的明显简单性中获益，而不放弃他们所习惯的东西。一开始，人们的观念在很大程度上是由以前的工作方式形成的，只有最直接的效果才会显现出来。船主们看着一袋袋、一箱箱的货物，不知道为什么要把它们第二次装进另一个箱子里。当他们在港口卸下货物时，他们很高兴，他们急于继续前进。他们想知道为什么他们应该去寻找集装箱。他们看着自己的船，想知道如何把集装箱装进船里。麦克莱恩比别人更明白，重要的不是船主的观点，而是整个贸易的目的：把货物从生产者带到最终目的地。只有将运输链的每一个环节，从包装到运送，从船舶的设计到港口的设计都统一起来之后，集装箱的潜力才得以充分释放。

When the advantages became obvious, second–order effects came into play and went into a self–reinforcing positive feedback loop. The more harbours were able to handle containers, the more container ships were needed to be built, which made shipping cheaper, which increased the range of goods worth shipping, which created more traffic, which made bigger container ships economical, which created more demand for infrastructure and so on. It wasn't just another way of shipping goods. It was a whole new way of doing business.

当优势明显后，二阶效应就开始发挥作用，并进入了一个自我强化的正反馈循环。港口能够处理的集装箱越多，需要建造的集装箱船就越多，这就使得航运成本降低，这就增加了值得运输的货物范围，这就创造了更多的运输量，这就使得更大的集装箱船变得经济，这就创造了更多的基础设施需求，等等。这不仅仅是另一种运输货物的方式。它是一种全新的经营方式。

Many students and academic writers think like the early ship owners when it comes to note-taking. They handle their ideas and findings in the way it makes immediate sense: If they read an interesting sentence, they underline it. If they have a comment to make, they write it into the margins. If they have an idea, they write it into their notebook, and if an article seems important enough, they make the effort and write an excerpt. Working like this will leave you with a lot of different notes in many different places. Writing, then, means to rely heavily on your brain to remember where and when these notes were written down. A text must then be conceptualised independently from these notes, which explains why so many resort to brainstorming to arrange the resources afterwards according to this preconceived idea. In this textual infrastructure, this so-often-taught workflow, it indeed does not make much sense to rewrite these notes and put them into a box, only to take them out again later when a certain quote or reference is needed during writing and thinking.

许多学生和学术作家在记笔记时，思维方式就像早期的船主。他们处理他们的想法和发现的方式是有直接意义的：如果他们读到一个有趣的句子，他们就会在下面划线。如果他们有一个评论，他们就把它写到空白处。如果他们有一个想法，他们就把它写进笔记本，如果一篇文章看起来足够重要，他们就会努力并写下摘录。这样的工作会让你在很多不同的地方留下很多不同的笔记。那么，写作就意味着要严重依赖你的大脑来记住这些笔记是在什么地方、什么时候写下来的。那么，一个文本必须从这些笔记中独立构思出来，这也就解释了为什么很多人求助于_头脑风暴_来根据这个预设的想法安排之后的资源。在这种文本基础架构中，这种经常被教导的

工作流程中，把这些笔记重新写好放进盒子里，以后在写作和思考过程中需要某句话或参考文献时才又拿出来，确实没有太大的意义。

In the old system, the question is: Under which topic do I store this note? In the new system, the question is: In which context will I want to stumble upon it again? Most students sort their material by topic or even by seminars and semester. From the perspective of someone who writes, that makes as much sense as sorting your errands by purchase date and the store they were bought from. Can't find your trousers? Maybe they are with the bleach you bought the same day at your department store.

在旧系统中，问题是：我把这个笔记存放在哪个主题下？在新的系统中，问题是：在哪种情况下我还会想再偶然发现它？大多数学生都会按主题甚至按研讨生和学期来整理材料。从一个写作的人的角度来看，这就像按购买日期和购买商店来分类一样有意义。找不到你的裤子了？也许它们和你当天在百货公司买的漂白剂在一起。

The slip-box is the shipping container of the academic world. Instead of having different storage for different ideas, everything goes into the same slip-box and is standardised into the same format. Instead of focusing on the in-between steps and trying to make a science out of underlining systems, reading techniques or excerpt writing, everything is streamlined towards one thing only: insight that can be published. The biggest advantage compared to a top-down storage system organised by topics is that the slip-box becomes more and more valuable the more it grows, instead of getting messy and confusing. If you sort by topic, you are faced with the dilemma of either adding more and more notes to one topic, which makes them increasingly hard to find, or adding more and more topics and subtopics to it, which only shifts the mess to another level. The first system is designed to find things you deliberately search for, putting all the responsibility on your brain. The slip-box is designed to present you with ideas you have already

forgotten, allowing your brain to focus on thinking instead of remembering.

滑箱是学术界的运输容器。不同的想法有不同的存储空间，而不是所有的东西都进入同一个滑箱，并被标准化成相同的格式。不需要关注中间的步骤，也不需要试图把下划线系统、阅读技巧或摘抄写作做成一门科学，一切精简的目的只有一个：可以发表的见解。与自上而下按主题组织的存储系统相比，最大的优势在于，滑箱越长越有价值，而不是越长越乱，越乱越好。如果按主题分类，就会面临两难，要么在一个主题中加入越来越多的笔记，使其越来越难找，要么在其中加入越来越多的主题和子主题，这只会把混乱的情况转移到另一个层面。第一个系统的设计是为了找到你刻意搜索的东西，把所有的责任都推给你的大脑。滑箱是为了给你呈现你已经忘记的想法，让你的大脑专注于思考而不是记忆。

Even though the slip-box, being organised bottom-up, does not face the trade- off problem between too many or too few topics, it too can lose its value when notes are added to it indiscriminately. It can only play out its strengths when we aim for a critical mass , which depends not only on the number of notes, but also their quality and the way they are handled.

尽管滑板箱由于是自下而上的组织方式，不会面临题目太多或太少的取舍问题，但如果胡乱添加笔记，它也会失去价值。只有当我们把目标定在一个_临界质量的时候，它才能发挥它的优势，而这个临界质量不仅取决于笔记的数量，还取决于笔记的质量和处理方式。

To achieve a critical mass, it is crucial to distinguish clearly between three types of notes:

要达到临界质量，关键是要区分清楚三种音符。

1. Fleeting notes , which are only reminders of information, can be written in any kind of way and will end up in the trash within a day or two.

2. 流水笔记_，这类笔记只是信息的提醒，可以用任何一种方式来写，最后会在一两天内被扔进垃圾桶。

3. Permanent notes , which will never be thrown away and contain the necessary information in themselves in a permanently understandable way. They are always stored in the same way in the same place, either in the reference system or, written as if for print, in the slip–box.

4. 永久性笔记_，永远不会被扔掉，它本身就包含了必要的信息，以一种永久可理解的方式。它们总是以同样的方式存放在同一个地方，要么存放在参考系统中，要么就像打印一样，写在便签箱中。

5. Project notes , which are only relevant to one particular project. They are kept within a project–specific folder and can be discarded or archived after the project is finished.

6. 3.项目笔记，它们只与一个特定的项目有关。它们被保存在特定项目的文件夹内，在项目结束后可以丢弃或存档。

Only if the notes of these three categories are kept separated it will be possible to build a critical mass of ideas within the slip–box. One of the major reasons for not getting much writing or publishing done lies in the confusion of these categories.

只有将这三类笔记分开保存，才有可能在滑箱内建立一个_关键性的想法。写作或出版不多的主要原因之一就在于这些类别的混乱。

A typical mistake is made by many diligent students who are adhering to the advice to keep a scientific journal. A friend of mine does not let any idea, interesting finding or quote he stumbles upon dwindle away and writes everything down. He always carries a notebook with him and often makes a few quick notes during a conversation. The advantage is obvious: No idea ever gets lost. The disadvantages are serious, though: As he treats every note as if it belongs to the “permanent” category, the notes will never build up a

critical mass. The collection of good ideas is diluted to insignificance by all the other notes, which are only relevant for a specific project or actually not that good on second sight. On top of that, the strict chronological order does not offer any help to find, combine or rearrange ideas in a productive sense. It is not surprising that my friend has a bookshelf filled with notebooks full of wonderful ideas, but not a single publication to show.

很多勤奋的学生都会犯一个典型的错误，那就是秉承着写科学日记的建议。我的一位朋友不会让他偶然发现的任何想法、有趣的发现或引用的话语变得枯燥无味，他把所有的东西都写下来。他总是随身携带一个笔记本，经常在谈话中快速地做一些笔记。其优点是显而易见的：任何想法都不会丢失。不过缺点也很严重。因为他把每一个笔记都当作是 "永久 "的范畴, 这些笔记永远也不会积累到足够的数量. 好的想法的集合被所有其他的笔记冲淡到无足轻重，这些笔记只与特定的项目有关，或者实际上不是那么好。最重要的是，严格的时间顺序并不能帮助我们找到、组合或重新排列富有成效的想法。这也就不奇怪了，我的朋友有一个书架，里面装满了笔记本，满满的都是精彩的想法，却没有一本刊物可以展示。

The second typical mistake is to collect notes only related to specific projects. On first sight, it makes much more sense. You decide on what you are going to write about and then collect everything that helps you to do that. The disadvantage is that you have to start all over after each project and cut off all other promising lines of thought. That means that everything you found, thought or encountered during the time of a project will be lost. If you try to mitigate the effect by opening a new folder for every potential new project whenever you stumble upon something that might be interesting for that, you will soon end up with an overwhelming amount of unfinished projects. If that in itself does not become a drag on your motivation, the task of keeping track of them will. But most importantly, without a permanent reservoir of ideas, you will not be able to develop any major ideas over a longer period of time because you are restricting yourself either to the

length of a single project or the capacity of your memory. Exceptional ideas need much more than that.

第二个典型的错误是只收集与特定项目有关的笔记。乍一看，这样做要合理得多。你决定你要写什么，然后收集一切能帮助你做到这一点的东西。缺点是，你必须在每个项目后重新开始，并切断所有其他有希望的思路。这意味着，你在一个项目期间发现的、想到的或遇到的一切都将丢失。如果你试图通过为每一个潜在的新项目打开一个新的文件夹来减轻这种影响，每当你偶然发现一些可能对此感兴趣的东西时，你很快就会有大量的未完成项目。如果这本身并没有成为你的动力的拖累，那么跟踪它们的任务将成为你的动力。但最重要的是，如果没有一个永久性的想法库，你将无法在较长的时间内发展任何重大的想法，因为你要么限制了自己单个项目的长度，要么限制了你的记忆容量。卓越的想法需要的远不止这些。

The third typical mistake is, of course, to treat all notes as fleeting ones. You can easily spot this approach by the mess that comes with it, or rather by the cycle of slowly growing piles of material followed by the impulse for major clean-ups. Just collecting unprocessed fleeting notes inevitably leads to chaos. Even small amounts of unclear and unrelated notes lingering around your desk will soon induce the wish of starting from scratch.

第三个典型的错误当然是把所有的笔记都当作昙花一现的笔记。你可以很容易地从随之而来的混乱中发现这种做法，或者说，从慢慢增加的材料堆积的循环中，然后是大清理的冲动。只是收集未经处理的短暂笔记，必然会导致混乱。哪怕是少量的不清晰、不相关的笔记萦绕在你的办公桌上，也会很快诱发从头开始的愿望。

What all these category-confusing approaches have in common is that the benefit of note-taking decreases with the number of notes you keep. More notes will make it more difficult to retrieve the right ones and bring related ones together in a playful way. But it should be just the opposite: The more you learn and collect, the more beneficial your notes should become, the more ideas can mingle and

give birth to new ones — and the easier it should be to write an intelligent text with less effort.

这些类别混乱的方法都有一个共同点，那就是记笔记的好处会随着你保存的笔记数量而减少。笔记越多，就越难找回正确的笔记，并将相关的笔记以玩耍的方式整合在一起。但应该恰恰相反。你学得越多，收集得越多，你的笔记就应该变得越有益，更多的想法可以交融并诞生新的想法--而且应该更容易用较少的努力写出一篇聪明的文章。

It is important to reflect on the purpose of these different types of notes. Fleeting notes are there for capturing ideas quickly while you are busy doing something else. When you are in a conversation, listening to a lecture, hear something noteworthy or an idea pops into your mind while you are running errands, a quick note is the best you can do without interrupting what you are in the middle of doing. That might even apply to reading, if you want to focus on a text without interrupting your reading flow. Then you might want to just underline sentences or write short comments in the margins. It is important to understand, though, that underlining sentences or writing comments in the margins are also just fleeting notes and do nothing to elaborate on a text. They will very soon become completely useless — unless you do something with them. If you already know that you will not go back to them, don't take these kind of notes in the first place. Take proper notes instead. Fleeting notes are only useful if you review them within a day or so and turn them into proper notes you can use later. Fleeting literature notes can make sense if you need an extra step to understand or grasp an idea, but they will not help you in the later stages of the writing process, as no underlined sentence will ever present itself when you need it in the development of an argument. These kinds of notes are just reminders of a thought, which you haven't had the time to elaborate on yet. Permanent notes, on the other hand, are written in a way that can still be understood even when you have forgotten the context they are taken from.

重要的是要反思这些不同类型的笔记的目的。昙花一现的笔记是为了在你忙于做其他事情的时候快速捕捉想法。当你在谈话、听讲座、听到一些值得注意的事情，或者在跑腿时脑海中突然冒出一个想法时，快速记录是你在不打断你正在做的事情的情况下最好的办法。这甚至可能适用于阅读，如果你想在不打断你的阅读流程的情况下专注于一段文字。那么你可能只想在句子上划线或在空白处写上简短的评论。不过，重要的是要明白，在句子上划线或在空白处写评论也只是短暂的笔记，对阐述文本毫无作用。它们很快就会变得完全无用--除非你对它们做些什么。如果你已经知道你不会再去看它们，首先不要做这种笔记。取而代之的是做适当的笔记。短暂的笔记只有在你在一天左右的时间内回顾它们，并将它们变成你以后可以使用的适当笔记时才有用。如果你需要一个额外的步骤来理解或掌握一个想法，短暂的文献笔记可能是有意义的，但它们不会在写作过程的后期阶段帮助你，因为当你在发展论点时需要它时，任何划线句子都不会出现。这类笔记只是提醒你一个想法，你还没来得及阐述。而永久笔记，则是在你已经忘记了笔记的取材背景的情况下，仍然可以理解的方式写出来的。

Most ideas will not stand the test of time, while others might become the seed for a major project. Unfortunately, they are not easy to distinguish right away. That is why the threshold to write an idea down has to be as low as possible, but it is equally crucial to elaborate on them within a day or two. A good indication that a note has been left unprocessed too long is when you no longer understand what you meant or it appears banal. In the first case, you forgot what it was supposed to remind you of. In the second case, you forgot the context that gave it its meaning.

大多数想法经不起时间的考验，而另一些想法则可能成为一个重大项目的种子。不幸的是，它们并不容易马上区分。这就是为什么写下一个想法的门槛要尽可能低，但在一两天内对它们进行阐述同样至关重要。当你不再明白自己的意思，或者显得平庸无奇时，就是一个纸条未处理时间过长的好迹象。在第一种情况下，你忘记了它应该提醒你的是什么。在第二种情况下，你忘记了赋予它意义的背景。

The only permanently stored notes are the literature notes in the reference system and the main notes in the slip-box. The former can be very brief as the context is clearly the text they refer to. The latter need be written with more care and details as they need to be self-explanatory. Luhmann never underlined sentences in the text he read or wrote comments in the margins. All he did was take brief notes about the ideas that caught his attention in a text on a separate piece of paper: “I make a note with the bibliographic details. On the backside I would write ‘on page x is this, on page y is that,’ and then it goes into the bibliographic slip-box where I collect everything I read.” (Hagen, 1997)[13] But before he stored them away, he would read what he noted down during the day, think about its relevance for his own lines of thought and write about it, filling his main slip-box with permanent notes. Nothing in this box would ever get thrown away. Some notes might disappear into the background and never catch his attention again, while others might become connection points to various lines of reasoning and reappear on a regular basis in various contexts.

永久存储的笔记只有参考系统中的文献笔记和滑箱中的主要笔记。前者可以非常简短，因为上下文很明显就是它们所指的文本。后者则需要写得更加细致和详细，因为它们需要自明。卢曼从来没有在他所读的文本中的句子下划线，也没有在空白处写评论。他所做的只是将文中引起他注意的观点在另一张纸上做简单的笔记。"我把书目细节记在纸条上。在背面我会写上'在第x页是这个，在第y页是那个'，然后它就会被放进书目滑箱，在那里我收集我读过的所有东西。" (哈根，1997)[13]但在他把它们存放起来之前，他会阅读白天记下的东西，思考它与自己的思路的相关性，并写下相关的内容，用永久的笔记填满他的主滑箱。这个盒子里的任何东西都不会被扔掉。有些笔记可能会消失在背景中，再也不会引起他的注意，而另一些笔记可能会成为各种推理思路的连接点，并在各种情境中定期重新出现。

As it is not possible to foresee the development of the slip-box, the fate of the notes is nothing to worry about. In contrast to the fleeting notes, every permanent note for the slip-box is elaborated

enough to have the potential to become part of or inspire a final written piece, but that can not be decided on up front as their relevance depends on future thinking and developments. The notes are no longer reminders of thoughts or ideas, but contain the actual thought or idea in written form. This is a crucial difference.

由于无法预知滑箱的发展，所以笔记的命运是不用担心的。与转瞬即逝的笔记相比，滑匣的每一张永久笔记都经过了足够的精心设计，有可能成为最终书面作品的一部分或激发灵感，但这不能事先决定，因为它们的相关性取决于未来的思考和发展。笔记不再是思想或理念的提醒，而是以书面形式包含实际的思想或理念。这是一个至关重要的区别。

It is the standardised format that enables the notes to build up a critical mass in one place. It is also the key to facilitating the thinking and writing process by removing all unnecessary complications or decisions that come with a variety of different formats and storage places. Only because every note is in the same format at the same place can they later be combined and assembled into something new and no thought is ever wasted on the question of where to put or label it.

正是由于标准化的格式，使得笔记能够在一个地方建立起临界质量。它也是促进思考和写作过程的关键，因为它消除了各种不同格式和存储场所带来的所有不必要的复杂或决定。只有因为每一张笔记都以同样的格式放在同一个地方，以后才能把它们组合起来，组合成新的东西，而绝不会在放在哪里或贴上标签的问题上浪费心思。

The last type of note, the ones that are related to only one specific project, are kept together with other project-related notes in a project-specific folder. It doesn't matter in which format these notes are as they are going to end up in the bin after the project is finished anyway (or in an archive — the bin for the indecisive).

最后一种笔记，就是那些只与一个特定项目有关的笔记，与其他与项目有关的笔记一起保存在一个特定项目的文件夹里。这些笔记以何种格式保存

并不重要，因为在项目结束后，它们最终会被扔进垃圾箱（或者被归档——犹豫不决者的垃圾箱）。

Project-related notes can be:

与项目相关的笔记可以是

- comments in the manuscript
  - 稿件中的注释
- collections of project-related literature
  - 与项目有关的文献集
- outlines
  - 纲要
- snippets of drafts
  - 片断
- reminders
  - 提醒
- to-do lists
  - 待办事项
- and of course the draft itself.
  - 当然还有草稿本身。

The Zettelkasten has the built-in function of project-specific desktops. Here, you can not only structure your thoughts and conceptualise the chapters of your draft, but also collect and sort

the notes for this specific project without fear that they will water down or interfere with the slip-box itself. You can even change the notes according to your project without affecting the notes in the slip-box.

Zettelkasten内置了特定项目桌面的功能。在这里，你不仅可以组织你的思路，构思你的草稿章节，还可以收集和整理这个特定项目的笔记，而不用担心它们会冲淡或干扰滑板箱本身。你甚至可以根据你的项目改变笔记，而不影响滑箱中的笔记。

The same applies to the reference system. In Zotero, you can collect literature in project-specific folders without taking them out of the reference system itself. All this keeps the permanent notes from the project- related notes clearly separated and allows you to experiment and tinker with them as much as you like within the boundaries of each project without interfering with the actual slip-box. I suggest keeping a physical binder for each project to keep all the handwritten notes and printouts separate from the rest and combined in one place.

这同样适用于参考系统。在Zotero中，你可以将文献收集在特定项目的文件夹中，而不需要将它们从参考系统本身中取出。所有这些都使永久笔记与项目相关的笔记清晰地分开，并允许你在每个项目的边界内随意实验和修饰，而不影响实际的滑箱。我建议为每个项目准备一个实体文件夹，将所有的手写笔记和打印稿分开，合并在一个地方。

When you close the folder for your current project in the evening and nothing is left on your desk other than pen and paper, you know that you have achieved a clear separation between fleeting, permanent and project-related notes.

当你在晚上合上当前项目的文件夹，桌上除了笔和纸之外，没有留下任何东西，你就知道你已经实现了短暂的、永久的和与项目相关的笔记之间的明确分离。

7 Nobody Ever Starts From Scratch

＃＃7没有人从头开始，从零开始

“The white sheet of paper — or today: the blank screen — is a fundamental misunderstanding”（Nassehi 2015, 185）

"白纸--或者说今天：空白的屏幕--是一个根本性的误解"（Nassehi 2015，185）。

The process of writing is vastly misunderstood. If you grab off the shelf a random study guide or self-help book on writing and skim through the first pages, the chances are that you will encounter something like this: “To make your research more efficient, your first step should be to narrow the aspect you choose to focus on and also formulate an explicit question that your research and analysis will address.”[14] Almost always, the decision on the topic is presented as the necessary first step, after which follows everything else, like in this guide: “When you have chosen a topic that is right for you, having taken into consideration your personal interests and any necessary background knowledge that may be needed, assess the availability of sources.”[15] Thereafter, you will certainly find a multi-step plan you are supposed to follow: Be it twelve steps, according to the Academic Skills & Learning Centre of the Australian National University, or eight, if you go with the recommendations of the Writing Center of the University of Wisconsin, the rough order is always the same: Make a decision on what to write about, plan your research, do your research, write. Interestingly enough, these road maps usually come with the concession that this is only an idealised plan and that in reality, it rarely works like that. This is certainly true. Writing can’t be that linear. The obvious question is: If that is true, why not root the course of action in reality instead?

写作的过程被大大地误解了。如果你从书架上随便抓起一本关于写作的学习指南或自助书，浏览一下第一页，你有可能会遇到这样的内容。"为了让你的研究更有效率，你的第一步应该是缩小你选择关注的方面，同时制定一个明确的问题，你的研究和分析将解决这个问题。"[14]几乎所有的时候，主题的决定都是作为必要的第一步提出来的，之后才是其他的一切，就像这本指南一样。"当你选择了一个适合你的主题，考虑到你的个人兴趣和可能需要的任何必要的背景知识，评估资源的可用性。"[15]此后，你一定会发现你应该遵循的多步骤计划。根据澳大利亚国立大学学术技能与学习中心的说法，是十二个步骤，如果你采用威斯康星大学写作中心的建议，则是八个步骤，大致的顺序总是一样的：决定写什么，计划研究，做研究，写。有趣的是，这些路线图通常都会有一个让步，那就是这只是一个理想化的计划，在现实中，很少会有这样的效果。这当然是事实。写作不可能是那么线性的。显而易见的问题是：既然如此，为什么不把行动方案植根于现实呢?

In order to develop a good question to write about or find the best angle for an assignment, one must already have put some thought into a topic. To be able to decide on a topic, one must already have read quite a bit and certainly not just about one topic. And the decision to read something and not something else is obviously rooted in prior understanding, and that didn’t come out of thin air, either. Every intellectual endeavour starts from an already existing preconception, which then can be transformed during further inquires and can serve as a starting point for following endeavours. Basically, that is what Hans-Georg Gadamer called the hermeneutic circle (Gadamer 2004). And even though the hermeneutic circle is regularly taught in university, writing at the same time continues to be taught as if we could start from scratch and move forward in a straight line — as if it were possible to pull a good question out of thin air and wait with the reading until the literature research is done. The seemingly pragmatic and down-to-earth-sounding advice — to decide what to write about before you start writing — is therefore either misleading or banal. It is banal if it means only that you should think before you put words on paper. It is misleading if it

means that you could make a sound plan on what to write before you have immersed yourself in the topics at hand, which involves writing. It accompanies everything: We have to read with a pen in hand, develop ideas on paper and build up an ever-growing pool of externalised thoughts. We will not be guided by a blindly made-up plan picked from our unreliable brains, but by our interest, curiosity and intuition, which is formed and informed by the actual work of reading, thinking, discussing, writing and developing ideas — and is something that continuously grows and reflects our knowledge and understanding externally.

要想拟定一个好的问题来写，或者找到最佳的习作角度，就必须已经花了一些心思在题目上。要想决定一个题目，必须已经读了不少书，当然不能只读一个题目。而决定读什么而不读其他的东西，显然是根植于先前的理解，那也不是凭空而来的。每一项知识性的努力都是从已有的先入为主的观念开始的，然后在进一步的探究过程中可以转化，可以作为后续努力的起点。基本上，这就是汉斯-格奥尔格-伽达默尔所说的解释学循环（Gadamer，2004）。而即使诠释学圈在大学里经常被教授，但与此同时，写作仍然被教授_好像我们可以从头开始，直线前进--好像可以凭空拉出一个好问题，然后与阅读一起等待文献研究的完成。因此，看似务实、听起来很踏实的建议--在开始写作之前就决定写什么，要么是误导，要么是平庸。如果它的意思只是让你在动笔之前先思考，那么它就是平庸的。如果它的意思是，在你沉浸在手头的话题之前，你就可以对写什么做出一个合理的计划，这就涉及到写作，那么它就是误导性的。它伴随着一切：我们必须拿着笔阅读，在纸上发展思想，并建立一个不断增长的外化思想库。我们不会被一个从我们不可靠的大脑中挑选出来的盲目编造的计划所引导，而是被我们的兴趣、好奇心和直觉所引导，这种直觉是在阅读、思考、讨论、写作和发展思想的实际工作中形成的，并且是不断增长和反映我们的知识和理解的东西_外化。

By focusing on what is interesting and keeping written track of your own intellectual development, topics, questions and arguments will emerge from the material without force. Not only does it mean that finding a topic or a research question will become easier, as we don’t have to squeeze it out of the few ideas that are on top of our

head anymore, every question that emerges out of our slip-box will naturally and handily come with material to work with. If we look into our slip-box to see where clusters have built up, we not only see possible topics, but topics we have already worked on — even if we were not able to see it up front. The idea that nobody ever starts from scratch suddenly becomes very concrete. If we take it seriously and work accordingly, we literally never have to start from scratch again.

把注意力集中在感兴趣的东西上，并对自己的知识发展进行书面记录，话题、问题和论点就会从材料中毫不强求地出现。这不仅意味着寻找课题或研究问题会变得更容易，因为我们不必再从脑海中的几个想法中挤出来，每一个从我们的滑箱中冒出来的问题都会自然而然地、手到擒来地有材料可供利用。如果我们查看一下我们的滑箱，看看在哪里建立了集群，我们不仅会看到_可能的题目，而且会看到我们已经研究过的题目--即使我们在前面没有能够看到它。没有人从头开始的想法突然变得非常具体。如果我们认真对待它，并据此开展工作，我们就会_真的再也不用从头开始了。

Of course, those who believe that they do start from scratch don't really start from scratch, either, as they too can only draw on what they have learned or encountered before. But as they haven't acted on this fact, they can't track ideas back to their origins and have neither supporting material at hand nor their sources in order. As writing has not accompanied their previous work, they have to either start with something completely new (which is risky) or retrace their ideas (which is boring).

当然，那些_相信自己确实是从头开始的人，也并不是真的从头开始，因为他们也只能借鉴以前学过或遇到过的东西。但由于他们没有_行动过，所以他们无法追溯思想的起源，手头既没有佐证材料，也没有有序的来源。由于写作没有伴随着他们以前的工作，他们不得不要么从全新的东西开始（这很冒险），要么追溯他们的想法（这很无聊）。

As proper note-taking is rarely taught or discussed, it is no wonder that almost every guide on writing recommends to start with brainstorming. If you haven't written along the way, the brain is indeed the only place to turn to. On its own, it is not such a great choice: it is neither objective nor reliable — two quite important aspects in academic or nonfiction writing. The promotion of brainstorming as a starting point is all the more surprising as it is not the origin of most ideas: The things you are supposed to find in your head by brainstorming usually don't have their origins in there. Rather, they come from the outside: through reading, having discussions and listening to others, through all the things that could have been accompanied and often even would have been improved by writing. The advice to think about what to write about before you write comes both too early and too late. Too late, as you already have passed up the chance to build up written resources when you face the white sheet of paper or the blank screen, but also too early, if you try to postpone every serious content-related work until you have made a decision on the topic.

由于正确的记笔记很少被教导或讨论，难怪几乎所有的写作指南都建议从_头脑风暴_开始。如果你一路走来没有写过东西，大脑的确是唯一可以求助的地方。单独来看，它并不是一个很好的选择：它既不客观，也不可靠--这在学术或非小说写作中是两个相当重要的方面。提倡以头脑风暴为出发点就更令人惊讶了，因为它不是大多数想法的起源。你应该通过头脑风暴在脑海中找到的东西 通常并不是起源于那里。相反，它们来自于外部：通过阅读、进行讨论和倾听他人的意见，通过所有可以伴随甚至往往会通过写作来改进的东西。写作前先想好要写什么的建议，既来得太早，也来得太晚。太晚了，因为当你面对白纸或空白的屏幕时，你已经放弃了积累书面资源的机会，但也太早了，如果你试图将每一项与内容有关的严肃工作推迟到你对主题做出决定的时候。

If something comes too early and too late at the same time, it is not possible to fix it by rearranging the order as the fictional linearity is the problem in itself. Taking smart notes is the precondition to break with the linear order. There is one reliable sign if you managed to

structure your workflow according to the fact that writing is not a linear process, but a circular one: the problem of finding a topic is replaced by the problem of having too many topics to write about. Having trouble finding the right topic is a symptom of the wrong attempt to rely heavily on the limitations of the brain, not the inevitable problematic starting point, as most study guides insinuate. If you on the other hand develop your thinking in writing, open questions will become clearly visible and give you an abundance of possible topics to elaborate further in writing.

如果某件事情来得太早，同时又来得太晚，就不可能通过重新安排顺序来解决，因为小说线性本身就是问题。巧做笔记是打破与线性顺序的前提。如果你设法根据写作不是一个线性过程，而是一个循环的过程来安排你的工作流程，那么有一个可靠的迹象：寻找主题的问题被有太多主题可写的问题所取代。找不到合适的话题是错误的尝试严重依赖大脑的局限性的症状，而不是像大多数学习指南所影射的那样，不可避免地出现问题的起点。另一方面，如果你在写作中培养自己的思维，开放性的问题就会清晰可见，并给你提供丰富的可能话题，让你在写作中进一步阐述。

After many years of working with students, I am convinced that the attempt of these study guides to squeeze a nonlinear process like writing into a linear order is the main reason for the very problems and frustrations they promise to solve. How can you not have trouble finding a topic if you believe you have to decide on one before you have done your research, have read and learned about something? How can you not feel threatened by an empty page if you have literally nothing at hand to fill it with? Who can blame you for procrastinating if you find yourself stuck with a topic you decided on blindly and now have to stick with it as the deadline is approaching? And how can anyone be surprised that students feel overwhelmed with writing assignments when they are not taught how to turn months and years of reading, discussing and research into material they can really use?

经过多年与学生的合作，我深信，这些学习指南试图将写作这样一个非线性的过程挤压成线性的顺序，正是它们承诺要解决的问题和挫折的主要原因。如果你认为在你做过研究、读过书、了解过某件事情之前就必须决定一个主题，你怎么能不感到困难呢？如果你手头没有任何东西可以填充，你怎么能不被空空如也的页面所威胁呢？如果你发现自己被一个盲目决定的题目卡住了，而现在又不得不在截止日期临近的时候坚持下去，谁又能怪你拖延呢？而当学生们没有被教导如何将数月、数年的阅读、讨论和研究变成真正能用的材料时，又怎么会有人对写作作业感到力不从心呢？

These study guides, which neglect everything before a writing assignment is given, are a little bit like financial advisors who discuss how 65-year-olds can save for retirement. At this point you would be better off curbing your enthusiasm (which is exactly what one of the most often sold study guides in Germany recommends: first, lower your expectations on quality and insight).[16]

这些在写作作业下达之前就忽略了一切的学习指导，有点像理财顾问讨论65岁的老人如何为退休储蓄。这时你最好收敛一下自己的热情（这正是德国最常销售的一本学习指南所建议的：首先，降低对质量和见解的期望值）。[16]

But those who have already developed their thinking through writing can keep the focus on what is interesting for them at the moment and accumulate substantial material just by doing what they most feel like doing. The material will cluster around the questions they returned to most often, so they don't risk too far of a departure from their interest. If your first chosen topic turns out to be not as interesting, you will just move on and your notes will cluster around something else. Maybe you will even note down the reasons why the first question is not interesting and turn that into an insight valuable enough to make public. When it finally comes to the decision on what to write about, you will already have made the decision — because you made it on every single step along the way, again and again every day, improving it gradually. Instead of spending your time worrying about finding the right topic, you will spend your time

actually working on your already existing interests and doing what is necessary to make informed decisions — reading, thinking and writing. By doing the work, you can trust that interesting questions will emerge. You might not know where you will end up (and you don't need to), but you can't force insight into a preconceived direction anyway. You minimise both the risk of losing interest in a topic you have once chosen ill-informed and the risk of having to start all over again.

但那些已经通过写作培养了思维的人，可以把注意力放在当下自己感兴趣的事情上，只要做自己最想做的事情，就能积累大量的素材。这些素材会围绕着他们最常回归的问题而聚集，这样就不会冒着太过偏离自己兴趣的风险。如果你第一次选择的题目结果没有那么有趣，你就会继续前进，你的笔记会围绕着其他的题目群集。也许你甚至会记下第一个问题不感兴趣的原因，并将其转化为有价值的见解，以便公开。当最终决定要写什么的时候，你就已经做出了决定--因为你在这条路上的每一步都做出了决定，每天都在重复，逐渐完善它。与其把时间花在为寻找合适的主题而烦恼，不如把时间花在实际工作上，花在自己已有的兴趣上，花在做出_知情决定所必需的工作上--阅读、思考和写作。通过做这些工作，你可以_相信有趣的问题会出现。你可能不知道你最终会去哪里（你也不需要知道），但无论如何你不能强迫洞察力进入一个预设的方向。你既最大限度地降低了对自己曾经选择的主题失去兴趣的风险，也降低了不得不重新开始的风险。

Even though academic writing is not a linear process, that does not mean you should follow an anything-goes approach. On the contrary, a clear, reliable structure is paramount.

尽管学术写作不是一个线性的过程，但这并不意味着你应该遵循一种随心所欲的方法。相反，一个清晰可靠的结构是最重要的。

8 Let the Work Carry You Forward

8 让工作带着你前进。

You may remember from school the difference between an exergonic and an endergonic reaction. In the first case, you constantly need to add energy to keep the process going. In the second case, the reaction, once triggered, continues by itself and even releases energy. The dynamics of work are not so different. Sometimes we feel like our work is draining our energy and we can only move forward if we put more and more energy into it. But sometimes it is the opposite. Once we get into the workflow, it is as if the work itself gains momentum, pulling us along and sometimes even energizing us. This is the kind of dynamic we are looking for.

你可能还记得学校里说的放能反应和内能反应的区别。在第一种情况下，你需要不断地增加能量来维持这个过程。在第二种情况下，反应一旦被触发，就会自行继续，甚至释放能量。工作的动力也不太一样。有时候，我们会觉得工作正在消耗我们的能量，我们只有投入越来越多的能量才能前进。但有时却恰恰相反。一旦我们进入工作流程，工作本身就好像获得了动力，拉着我们前进，有时甚至让我们充满活力。这就是我们所追求的动力。

A good workflow can easily turn into a virtuous circle, where the positive experience motivates us to take on the next task with ease, which helps us to get better at what we are doing, which in return makes it more likely for us to enjoy the work, and so on. But if we feel constantly stuck in our work, we will become demotivated and much more likely to procrastinate, leaving us with fewer positive or even bad experiences like missed deadlines. We might end up in a vicious circle of failure (cf. Fishbach, Eyal and Finkelstein, 2010).

一个好的工作流程很容易变成一个良性循环，积极的体验会激励我们轻松地接受下一个任务，从而帮助我们更好地完成工作，反过来又使我们更有可能享受工作，等等。但是，如果我们觉得自己一直被工作所困，我们就

会变得没有动力，更容易拖延，让我们少了一些积极的甚至是糟糕的体验，比如错过最后期限。我们可能最终会陷入失败的恶性循环（参见Fishbach、Eyal和Finkelstein，2010）。

Any attempts to trick ourselves into work with external rewards (like doing something nice after finishing a chapter) are only short-term solutions with no prospect of establishing a positive feedback loop. These are very fragile motivational constructions. Only if the work itself becomes rewarding can the dynamic of motivation and reward become self-sustainable and propel the whole process forward (DePasque and Tricomi, 2015).

任何试图用外部奖励（比如完成一章后做了一件好事）来欺骗自己的工作，都只是短期的解决方案，没有建立正反馈循环的前景。这些都是非常脆弱的动机构造。只有当工作本身成为奖励时，动机和奖励的动态才能变得自我维持，并推动整个过程向前发展（DePasque和Tricomi，2015）。

The extraordinary successful fitness motivation coach Michelle Segar uses this dynamic to turn even the most stubborn couch potatoes into exercise aficionados (Segar, 2015). She brings those who really don't like exercise but know they have to do it into a sustainable workout routine by focusing on one thing: Creating satisfying, repeatable experiences with sports. It doesn't matter what her clients are doing — running, walking, team sports, gym workouts or bicycling to work. The only thing that matters is that they discover something that gives them a good experience that they would like to have again. Once her clients find something, they are encouraged enough to try something else as well. They enter the virtuous circle where willpower isn't needed anymore because they feel like doing it anyway. If they tried to trick themselves into exercise by rewarding themselves afterwards with a relaxed evening on the sofa watching TV, it wouldn't have taken them long until they went straight for the sofa, skipping the workout altogether, because this is how we tick.

非凡成功的健身动机教练米歇尔-塞加尔利用这种动态将最顽固的沙发土豆变成了运动爱好者（塞加尔，2015）。她通过专注于一件事：创造令人满意的、可重复的运动体验，将那些真正不喜欢运动但又知道必须要做的人带入可持续的锻炼程序。她的客户在做什么并不重要--跑步、步行、团队运动、健身房锻炼或骑自行车上班。唯一重要的是，他们发现了一些能给他们带来良好体验的东西，而且他们还想再次拥有。一旦她的客户找到了_东西，_他们就会受到足够的鼓励，去尝试其他的东西。他们进入了良性循环，不再需要意志力，因为他们觉得无论如何都要做。如果他们试图通过事后奖励自己在沙发上轻松地看电视来欺骗自己进行锻炼，那么用不了多久，他们就会直奔沙发，完全跳过锻炼，因为这就是我们的工作方式。

Feedback loops are not only crucial for the dynamics of motivation, but also the key element to any learning process. Nothing motivates us more than the experience of becoming better at what we do. And the only chance to improve in something is getting timely and concrete feedback. Seeking feedback, not avoiding it, is the first virtue of anyone who wants to learn, or in the more general terms of psychologist Carol Dweck, to grow. Dweck shows convincingly that the most reliable predictor for long-term success is having a “growth mindset.” To actively seek and welcome feedback, be it positive or negative, is one of the most important factors for success (and happiness) in the long run. Conversely, nothing is a bigger hindrance to personal growth than having a “fixed mindset.” Those who fear and avoid feedback because it might damage their cherished positive self-image might feel better in the short term, but will quickly fall behind in actual performance (Dweck 2006; 2013). Ironically, it is therefore often the highly gifted and talented students, who receive a lot of praise, who are more in danger of developing a fixed mindset and getting stuck. Having been praised for what they are (talented and gifted) rather than for what they do, they tend to focus on keeping this impression intact, rather than exposing themselves to new challenges and the possibility of learning from failure. Embracing a growth mindset means to get

pleasure out of changing for the better (which is mostly inwardly rewarding) instead of getting pleasure in being praised (which is outwardly rewarding). The orientation towards the latter makes one stick to safe, proven areas. The orientation towards the first draws the attention to the areas most in need of improvement. To seek as many opportunities to learn as possible is the most reliable long-term growth strategy. And if growth and success are not reasons enough, then maybe the fact that the fear of failure has the ugliest name of all phobias: Kakorrhaphiophobia.

反馈回路不仅对动机的动态至关重要，而且也是任何学习过程的关键因素。没有什么比在我们所做的事情上变得更好的经历更能激励我们。而提高某件事情的唯一机会就是得到及时而具体的反馈。寻求反馈，而不是回避反馈，是任何想要学习的人的第一美德，或者用心理学家卡罗尔-德韦克（Carol Dweck）更笼统的说法，就是_成长。Dweck令人信服地表明，长期成功的最可靠预测因素是拥有 "成长心态"。积极寻求和欢迎反馈，无论是积极的还是消极的，都是长期成功（和幸福）的最重要因素之一。反之，没有什么比拥有 "固定心态 "对个人成长的阻碍更大。那些害怕和回避反馈的人，因为它可能会损害他们所珍视的积极的自我形象，可能在短期内感觉更好，但在实际表现中会很快落后（Dweck 2006；2013）。因此，具有讽刺意味的是，往往是那些获得大量表扬的高材生和天才生，他们更有可能形成固定的思维模式而陷入困境。他们因自己是什么而受到赞美（天赋和资优），而不是因他们做了什么而受到赞美，他们倾向于专注于保持这种印象，而不是让自己面对新的挑战和从失败中学习的可能性。拥抱成长心态意味着要从改变中获得快乐（这主要是内在的回报），而不是从被赞美中获得快乐（这是外在的回报）。朝向后者的取向使人坚持在安全的、经过验证的领域。朝向第一种的取向，会使人注意到最需要改进的领域。尽可能多地寻求学习的机会，是最可靠的长期成长策略。如果成长和成功还不够理由，那么也许事实是，对失败的恐惧有着所有恐惧症中最丑陋的名字。Kakorrhaphiophobia。

Having a growth mindset is crucial, but only one side of the equation. Having a learning system in place that enables feedback loops in a practical way is equally important. Being open for feedback doesn’t help very much if the only feedback you can get

comes once every few months for work you have already finished. The linear model of academic writing comes with very few feedback opportunities, and even those are usually spread out over time (vgl. Fritzsche, Young und Hickson, 2003). If you choose a topic for your paper and work according to the linear model, you will only learn if your choice was wise after multiple stages of research. The same applies to the question of if you understood what you read and if your idea for an argument makes sense.

拥有成长的心态是至关重要的，但只是方程式的一方面。拥有一个能够以实际方式实现反馈循环的学习系统同样重要。如果你能得到的唯一的反馈是每几个月一次，对你已经完成的工作的反馈，那么开放的反馈就没有多大帮助。学术写作的线性模式很少有反馈机会，即使是那些反馈机会也通常是随着时间的推移而分散的(vgl. Fritzsche, Young und Hickson, 2003)。如果你为你的论文选择一个主题，并按照线性模型工作，你只有在多个阶段的研究后才能了解你的选择是否明智。同样的道理也适用于你是否理解了你所阅读的内容以及你的论点想法是否有意义的问题。

Following a circular approach, on the other hand, allows you to implement many feedback loops, which give you the chance to improve your work while you are working on it. It is not just about increasing the number of opportunities to learn, but also to be able to correct the mistakes we inevitably make. As the feedback loops are usually smaller than one big chunk of feedback at the end, they are also much less scary and easier to embrace.

另一方面，遵循循环的方法，可以让你实施许多反馈循环，这让你有机会在工作的同时改进你的工作。这不仅是为了增加学习的机会，也是为了能够纠正我们不可避免的错误。由于反馈循环通常比最后的一大块反馈要小，所以也就不那么可怕，更容易接受。

Reading with a pen in the hand, for example, forces, us to think about what we read and check upon our understanding. It is the simplest test: We tend to think we understand what we read — until we try to rewrite it in our own words. By doing this, we not only get

a better sense of our ability to understand, but also increase our ability to clearly and concisely express our understanding — which in return helps to grasp ideas more quickly. If we try to fool ourselves here and write down incomprehensible words, we will detect it in the next step when we try to turn our literature notes into permanent notes and try to connect them with others.

比如，拿着笔阅读，就会迫使，我们去思考我们读到的内容，检查我们的理解。这是最简单的测试。我们倾向于认为我们理解了我们读到的东西 -- 直到我们尝试用自己的语言重写它。通过这样做，我们不仅能更好地感觉到自己的理解能力，而且还能提高我们清晰简洁地表达自己理解的能力--这反过来又能帮助我们更快地掌握想法。如果我们在这里试图自欺欺人，写下一些难以理解的文字，那么在下一步我们试图将自己的文学笔记变成永久的笔记，并试图将其与他人联系起来的时候，我们就会发现。

The ability to express understanding in one's own words is a fundamental competency for everyone who writes — and only by doing it with the chance of realizing our lack of understanding can we become better at it. But the better we become, the easier and quicker we can make notes, which again increases the number of learning experiences. The same applies to the crucial ability to distinguish the important bits of a text from the less important ones: the better we become at it, the more effective our reading will become, the more we can read, the more we will learn. We will enter a beautiful, virtuous circle of competency. You cannot help but feel motivated by it.

用自己的语言表达理解的能力是每一个写作的人的基本能力--只有在做的时候有机会意识到自己的不理解，我们才能变得更好。但我们变得越好，做笔记就越方便快捷，这又增加了学习的经验。同样的道理也适用于区分文本中重要的部分和不太重要的部分的关键能力：我们在这方面的能力越强，我们的阅读就越有效，我们能读的越多，我们就能学到更多。我们将进入一个美丽的、良性的能力循环。你会不由自主地感到动力十足。

The same goes for writing permanent notes, which have another feedback loop built-in: Expressing our own thoughts in writing makes us realise if we really thought them through. The moment we try to combine them with previously written notes, the system will unambiguously show us contradictions, inconsistencies and repetitions. While these built-in feedback loops do not make redundant the feedback from your peers or supervisor, they are the only ones that are always available and can help us to improve a little bit, multiple times every single day. And the best thing about this is that while we learn and become better, our slip-box becomes more knowledgeable too. It grows and improves. And the more it grows, the more useful it becomes and the easier it will be for us to make new connections.

写永久笔记也是一样，它还内置了另一个反馈循环：用文字表达自己的想法，会让我们意识到自己是否真的想清楚了。当我们试图将它们与之前写的笔记结合起来的那一刻，系统会毫不含糊地告诉我们矛盾、不一致和重复的地方。虽然这些内置的反馈循环并不能让同行或上司的反馈成为多余，但它们是唯一可以_随时随地使用的，并且可以帮助我们每天多次改进一点点。而最好的一点是，在我们学习和变得更好的同时，我们的滑箱也会变得更懂事。它在成长，在进步。它越是成长，就越是有用，我们就越容易建立新的联系。

The slip-box is not a collection of notes. Working with it is less about retrieving specific notes and more about being pointed to relevant facts and generating insight by letting ideas mingle. Its usability grows with its size, not just linearly but exponentially. When we turn to the slip-box, its inner connectedness will not just provide us with isolated facts, but with lines of developed thoughts. Moreover, because of its inner complexity, a search throught the slip-box will confront us with related notes we did not look for. This is a very significant difference that becomes more and more relevant over time. The more content it contains, the more connections it can provide, and the easier it becomes to add new entries in a smart way and receive useful suggestions.

便利箱不是笔记的集合。与其说使用它是为了检索具体的笔记，不如说是为了被指出相关的事实，并通过让思想交融产生洞察力。它的可用性随着其规模的增长而增长，不仅是线性的，而且是指数级的。当我们转向滑箱时，它的内在联系将不仅仅为我们提供孤立的事实，而是提供发达的思想线。此外，由于其内在的复杂性，在滑箱中的搜索将使我们面对我们没有寻找到的相关笔记。这是一个非常重要的区别，随着时间的推移，它变得越来越重要。它所包含的内容越多，能够提供的联系也就越多，以一种聪明的方式添加新的条目和接收有用的建议也就变得越容易。

Our brains work not that differently in terms of interconnectedness. Psychologists used to think of the brain as a limited storage space that slowly fills up and makes it more difficult to learn late in life. But we know today that the more connected information we already have, the easier it is to learn, because new information can dock to that information. Yes, our ability to learn isolated facts is indeed limited and probably decreases with age. But if facts are not kept isolated nor learned in an isolated fashion, but hang together in a network of ideas, or “latticework of mental models” (Munger, 1994), it becomes easier to make sense of new information. That makes it easier not only to learn and remember, but also to retrieve the information later in the moment and context it is needed.

我们的大脑在相互联系方面的工作方式并没有什么不同。心理学家曾经认为大脑是一个有限的存储空间，慢慢地就会被填满，使后期的学习更加困难。但今天我们知道，我们已经拥有的信息越是互联互通，就越容易学习，因为新的信息可以和这些信息对接。是的，我们学习_孤立的事实的能力确实有限，可能会随着年龄的增长而降低。但是，如果事实不是保持孤立的，也不是以孤立的方式学习，而是挂在一个思想网络中，或者说是 "心理模型的网格"（芒格，1994），那么就会更容易理解新的信息。这不仅使学习和记忆变得更容易，而且使以后在需要的时刻和背景下检索信息变得更容易。

As we are the authors of all the notes, we learn in lockstep with the slip– box. This is another big difference from using an encyclopaedia like Wikipedia. We use the same mental models,

theories and terms to organise our thoughts in our brains as in our slip-box. That the slip-box generates an excess of possibilities enables it to surprise and inspire us to generate new ideas and develop our theories further. It is not the slip-box or our brains alone, but the dynamic between them that makes working with it so productive.

由于我们是所有笔记的作者，所以我们学习的时候要跟滑箱同步。这是与使用像维基百科这样的百科全书的另一大区别。我们用同样的心理模型、理论和术语在大脑中组织我们的思想，就像在我们的资料箱中一样。滑箱产生了过多的可能性，这使得它能够给我们带来惊喜，激发我们产生新的想法，并进一步发展我们的理论。并非只有 "储物箱“或我们的大脑，而是它们之间的动态关系使我们的工作如此富有成效。

9 Separate and Interlocking Tasks

9 单独和连锁的任务。

9.1 Give Each Task Your Undivided Attention

9.1 全神贯注于每项任务。

According to a widely cited study, the constant interruption of emails and text messages cuts our productivity by about 40% and makes us at least 10 IQ points dumber. Even though this study was never published, makes no claims about intelligence and is statistically irrelevant, it does seem to confirm what most of us believe anyway and that is that we might have an attention deficit problem. It might not show it by content, but the mere fact that it was possible to have a misunderstanding spreading so fast under titles like “E-mails ‘hurt IQ more than pot’ ” (CNN) is telling. There are real studies about that as well. We know for example that watching television reduces the attention span of children (Swing et al. 2010). We also know that the average length of TV soundbites

has steadily declined over the last several decades (Fehrmann, 2011). During the U.S. presidential election in 1968, the average soundbite — that is, any footage of a candidate speaking uninterrupted — was still a little more than 40 seconds, but that had fallen to less than 10 seconds at the end of the 80s (Hallin 1994) and 7.8 seconds in 2000 (Lichter, 2001). The last election has certainly not reversed the trend. Whether that means that the media adjust to our decreasing attention span or is causing the trend is not easy to say.[17] But however it might be, it is obvious that we are surrounded by more sources of distraction and less opportunities to train our attention spans.

根据一项被广泛引用的研究，不断中断的电子邮件和短信会使我们的工作效率降低约40%，并使我们的智商至少降低10点。尽管这项研究从未发表过，没有提出任何关于智力的说法，而且在统计学上也无关紧要，但它似乎证实了我们大多数人无论如何都相信的事情，那就是我们可能有注意力不足的问题。它可能不会通过内容显示出来，但仅仅是一个事实，就有可能让一个误解在 "电子邮件'比大麻更伤智商'"这样的标题下快速传播。(CNN)的说法。关于这一点，也有真实的研究。比如我们知道看电视会降低儿童的注意力（Swing等人，2010）。我们还知道，在过去的几十年里，电视声音的平均长度一直在稳步下降（Fehrmann，2011）。在1968年的美国总统大选期间，平均声音片断--即候选人不间断讲话的任何镜头--仍然超过40秒，但在80年代末已降至不到10秒（Hallin，1994年），2000年降至7.8秒（Lichter，2001年）。上次选举当然没有扭转这一趋势。这是否意味着媒体适应了我们的注意力下降，还是造成了这一趋势，不好说。[17]但无论如何，很明显，我们周围有更多的分心源，训练我们注意力的机会更少。

9.2 Multitasking is not a good idea

9.2 多任务处理不是个好主意。

If more than one thing tries to catch your attention, the temptation is great to look at more than one thing at the same time — to multitask. Many people claim to be quite good at multitasking. For

some, it is one of the most important skills to cope with today's informational overload. It is a common belief that the younger generations are better at it, that it even comes naturally to them as they grew up among the attention-seeking new media. And studies show that those who claim to multitask a lot also claim to be very good at it. Those interviewed in these studies do not see their productivity impaired by it. On the contrary, they think it's improved. But they usually don't test themselves in comparison with a control group.

如果不止一件事试图吸引你的注意力，那么同时看多件事情的诱惑是很大的--多任务。许多人声称自己相当擅长多任务处理。对于一些人来说，这是应对当今信息过载的最重要技能之一。人们普遍认为，年轻一代更擅长多任务处理，甚至认为这对他们来说是自然而然的，因为他们是在追求关注度的新媒体中成长起来的。而研究表明，那些自称经常处理多任务的人也自称非常擅长。在这些研究中接受采访的人并不认为他们的工作效率因此受损。相反，他们认为有所提高。但他们通常不会用对照组来测试自己。

Psychologists who interviewed the multitaskers did test them instead of just asking. They gave them different tasks to accomplish and compared their results with another group that was instructed to do only one thing at a time. The outcome is unambiguous: While those who multitasked felt more productive, their productivity actually decreased — a lot (Wang and Tchernev 2012; Rosen 2008; Ophir, Nass, and Wagner 2009). Not only the quantity but also the quality of their accomplishments lagged significantly behind that of the control group.

采访多任务处理者的心理学家确实对他们进行了测试，而不仅仅是询问。他们给了他们不同的任务来完成，并将他们的结果与另一组被指示每次只做一件事的人进行比较。结果是明确的：虽然那些处理多任务的人感觉更有效率，但他们的生产力实际上却下降了--下降了很多（Wang和Tchernev，2012；Rosen，2008；Ophir、Nass和Wagner，2009）。不仅在数量上，而且在质量上，他们的成就也明显落后于对照组。

In some areas, like texting and driving, the downsides of multitasking are painfully obvious. But what is most interesting about these studies is not the fact that the productivity and the quality of the work decreases with multitasking, but that it also impairs the ability to deal with more than one thing at a time!

在某些领域，比如发短信和开车，多任务处理的弊端是非常明显的。但这些研究中最有趣的不是多任务处理后工作效率和工作质量会下降，而是它还会损害_一次处理多件事情的能力!

This result is surprising, because we usually expect to become better at something the more often we do it. But on a closer look, it makes sense. Multitasking is not what we think it is. It is not focusing attention on more than one thing at a time. Nobody can do that. When we think we multitask, what we really do is shift our attention quickly between two (or more) things. And every shift is a drain on our ability to shift and delays the moment we manage to get focused again. Trying to multitask fatigues us and decreases our ability to deal with more than one task.

这个结果是令人惊讶的，因为我们通常期望在某件事上变得更好，我们做得越频繁。但仔细一看，这是有道理的。多任务处理并不是我们想象的那样。它不是将注意力同时集中在一件以上的事情上。没有人能够做到这一点。当我们认为自己在进行多任务处理时，我们真正做的是在两件（或多件）事情之间快速转移注意力。而每一次转移都会消耗我们的转移能力，并延迟我们设法再次集中注意力的时刻。试图多任务处理会使我们疲劳，并降低我们处理多个任务的能力。

The fact that people nevertheless believe that they can get better at it and increase their productivity can easily be explained by two factors. The first is the lack of a control group or an objective external measurement that would provide us with the feedback we need to learn. The second is what psychologists call the mere-exposure effect: doing something many times makes us believe we have become good at it — completely independent of our actual

performance (Bornstein 1989). We unfortunately tend to confuse familiarity with skill.

事实上，人们还是相信他们可以在这方面做得更好，提高他们的生产力，这很容易被两个因素解释。第一个是缺乏一个对照组或一个客观的外部测量，可以为我们提供学习所需的反馈。第二个因素是心理学家所说的 "优点--暴露效应"：做某件事的次数多了，我们就会相信自己已经很擅长了--这与我们的实际表现完全无关（Bornstein 1989）。不幸的是，我们倾向于将熟悉程度与技能混为一谈。

If the only reason to mention this is to recommend you not write your thesis or books while driving, it would be quite banal (still a good idea, though). But it does have practical consequences for the way we work if we think about what “writing” truly means: many different tasks we might end up trying to do at the same time if we don’t separate them consciously and practically.

如果提到这一点的唯一原因是建议你不要在开车时写论文或书籍，那就太平庸了（不过还是个好主意）。但是，如果我们思考一下 "写作 "的真正含义，它确实会对我们的工作方式产生实际的影响：如果我们不有意识地、切实地将许多不同的任务分开，我们最终可能会在同一时间尝试去做。

Writing a paper involves much more than just typing on the keyboard. It also means reading, understanding, reflecting, getting ideas, making connections, distinguishing terms, finding the right words, structuring, organizing, editing, correcting and rewriting. All these are not just different tasks, but tasks requiring a different kind of attention. It is not only impossible to focus on more than one thing at a time, but also to have a different kind of attention on more than one thing at a time.

撰写论文不仅仅是在键盘上打字。它还意味着阅读、理解、反思、获得想法、建立联系、区分术语、找到正确的词语、构建结构、组织、编辑、纠正和重写。所有这些不仅是不同的任务，而且是需要不同的注意力的任

务。不仅不可能同时关注多件事情，而且也不可能同时对多件事情有_种不同的注意。

Usually, when we think about attention, we only think about focused attention — something that requires willpower to sustain. This is not too surprising, because this is what most psychologists, philosophers and neuroscientists used to have in mind when they talked about attention (Bruya 2010, 5). Today, research differentiates between multiple forms of attention. Ever since Mihaly Csikszentmihalyi in the 1970s described “flow,” the state in which being highly focused becomes effortless (Csikszentmihalyi, 1975), [18] other forms of attention, which are much less dependent on will and effort, attracted researchers’ interest.

通常，当我们想到注意力的时候，我们只想到集中的注意力--需要意志力来维持的东西。这并不太令人惊讶，因为这是大多数心理学家、哲学家和神经科学家在谈论注意力时曾经想到的东西（Bruya 2010，5）。今天，研究区分了多种形式的注意。自从Mihaly Csikszentmihalyi在20世纪70年代描述了 "流动"，即高度集中变得毫不费力的状态（Csikszentmihalyi，1975），[18]其他形式的注意力，它们对意志和努力的依赖性更小，引起了研究者的兴趣。

When it comes to focused attention, we focus on one thing only, something we can sustain for only a few seconds. The maximum duration of focused attention seems not to have changed over time (Doyle and Zakrajsek 2013, 91). Focused attention is different from “sustained attention,” which we need to stay focused on one task for a longer period and is necessary to learn, understand or get something done. This is the kind of attention that is most certainly under threat from an increase in distractions. The average duration seems to have shrunken quite considerably over time — we practice much less focused attention than we used to (ibid).

当谈到集中注意时，我们只关注一件事，一件我们只能维持几秒钟的事情。集中注意的最长持续时间似乎并没有随着时间的推移而改变（Doyle

和Zakrajsek 2013，91）。集中注意不同于 "持续注意"，我们需要在较长的时间内保持对一项任务的关注，是学习、理解或完成某件事情所必需的。这种注意力最肯定会受到来自分心增加的威胁。随着时间的推移，平均持续时间似乎已经大大缩减了--我们练习的集中注意力比过去少得多（同上）。

The good news is that we can train ourselves to stay focused on one thing for longer if we avoid multitasking, remove possible distractions and separate different kinds of tasks as much as possible so they will not interfere with each other. This too is not just a question of having the right mindset, but, equally important, of how we organise our workflow. A lack of structure makes it much more challenging to stay focused for extended periods of time. The slip-box provides not only a clear structure to work in, but also forces us to shift our attention consciously as we can complete tasks in reasonable time before moving on to the next one. Together with the fact that every task is accompanied by writing, which in itself requires undistracted attention, the slip-box can become a haven for our restless minds.

好消息是，如果我们能避免多任务，排除可能的干扰，并尽可能地将不同类型的任务分开，使它们不会相互干扰，我们就能训练自己更长时间地专注于一件事。这也不仅仅是一个拥有正确心态的问题，同样重要的是我们如何组织工作流程的问题。如果缺乏结构性，那么要想长时间保持专注，就会变得更加困难。滑板箱不仅提供了一个清晰的工作结构，还迫使我们有意识地转移注意力，因为我们可以在合理的时间内完成任务，然后再转入下一个任务。再加上每项任务都伴随着写作，而写作本身就需要不分心的注意，所以滑板箱可以成为我们浮躁心灵的天堂。

9.3 Give Each Task the Right Kind of Attention

9.3 给每个任务以适当的关注。

On closer look, it becomes obvious how different the tasks are that are usually summarised under “writing” and how different the kinds of attention are that they require.

仔细观察，就会发现，通常被归纳在 "写作 "之下的任务是多么的不同，它们所需要的注意力种类也是多么的不同。

Proofreading, for example, is obviously part of the writing process, but requires a very different state of mind than the attempt to find the right words. When we proofread a manuscript, we take on the role of a critic who takes a step back to see the text with the eyes of a dispassionate reader. We scan the text for typos, try to smooth out patches and check structure. We deliberately put distance between ourselves and the text to see what is really on the paper, not just in our heads. We try to block out the knowledge of what we meant to say to be able to see what we wrote.

比如说，校对，显然是写作过程的一部分，但所需要的心态却与试图找到正确的文字截然不同。当我们校对稿件时，我们扮演的是一个批评家的角色，他退后一步，以冷静的读者的眼光来看待文本。我们扫描文本中的错别字，试图抚平补丁，检查结构。我们刻意在自己和文本之间拉开距离，看看纸上的真实内容，而不仅仅是脑子里的东西。我们试图屏蔽掉我们想说的知识，以便能够看到我们写的东西。

While taking on the role of a critic is not the same as being an impartial reader, it is enough to spot most of what we missed before: the holes in the argument, the parts we did not explain as we did not need to explain them to ourselves. To be able to switch between the role of critic and the role of writer requires a clear separation between these two tasks, and that becomes easier with experience. If we proofread a manuscript and don’t manage to get enough distance from ourselves as authors, we will only see our thoughts, not the actual text. It is a common issue that comes up during discussions with students: When I point out problems within the argument, an ill-defined term or just an ambiguous passage,

students usually refer to what they mean first and only shift their focus to what they have written when they fully understand that what they mean is completely irrelevant within the scientific community.

虽然扮演批评家的角色不等于做一个公正的读者，但它足以发现我们之前所忽略的大部分内容：论证中的漏洞，我们没有解释的部分，因为我们不需要向自己解释。要想在批评家的角色和作家的角色之间进行转换，就需要将这两项任务明确分开，而随着经验的积累，这一点会变得更加容易。如果我们在校对稿件时，没有做到与作为作者的自己保持足够的距离，我们只会看到自己的想法，而不是实际的文本。这是在与学生讨论时经常出现的问题。当我指出论点中的问题，一个定义不清的术语 或者只是一个模棱两可的段落时，学生们通常会先提到他们的意思，只有当他们完全明白他们的意思在科学界是完全不相关的时候，他们才会把注意力转移到他们写的东西上。

Letting the inner critic interfere with the author isn't helpful, either. Here we have to focus our attention on our thoughts. If the critic constantly and prematurely interferes whenever a sentence isn't perfect yet, we would never get anything on paper. We need to get our thoughts on paper first and improve them there , where we can look at them. Especially complex ideas are difficult to turn into a linear text in the head alone. If we try to please the critical reader instantly, our workflow would come to a standstill. We tend to call extremely slow writers, who always try to write as if for print, perfectionists. Even though it sounds like praise for extreme professionalism, it is not: A real professional would wait until it was time for proofreading, so he or she can focus on one thing at a time. While proofreading requires more focused attention, finding the right words during writing requires much more floating attention.

让内心的批判者干扰作者，也是无济于事的。在这里，我们要把注意力集中在自己的思想上。如果每当一句话还不完美时，批评家就不断地、过早地干涉，我们就永远不会在纸上得到任何东西。我们需要先把我们的思想写在纸上，并在那里改进它们_ ，在那里我们可以看到它们。尤其是复杂

的想法，单单在脑子里很难变成线性文字。如果我们试图立刻取悦批判性的读者，我们的工作流程就会陷入停滞。我们往往把那些总是试图把文字写得像印刷品一样的极慢的作家称为完美主义者。尽管这听起来像是对极度专业主义的赞美，但事实并非如此。一个真正的专业人士会等到校对的时候才开始写，这样他或她就可以一次只专注于一件事。虽然校对需要更专注的注意力，但在写作过程中寻找合适的词语则需要更多浮动的注意力。

It is also easier to focus on finding the right words if we don't have to think about the structure of the text at the same time, which is why a printed outline of the manuscript should be always in front of our eyes. We have to know what we don't have to write about at the moment, because we know that we will take care of that in another part of our text.

如果我们不用同时考虑文章的结构，也更容易集中精力寻找正确的词语，这也是为什么打印出来的稿件大纲应该始终在我们眼前的原因。我们必须知道什么是我们目前_不必写的，因为我们知道，我们会在文本的另一部分处理好。

Outlining or changing the outline is also a very different task that requires a very different focus on something else: not on one thought, but on the whole argument. It is important, though, to understand outlining not as the preparation of writing or even as planning, but as a separate task we need to return to throughout the writing process on a regular basis. We need a structure all the time, but as we work our way bottom–up, it is bound to change often. And whenever we need to update the structure, we need to take a step back, look at the big picture and change it accordingly.

勾勒或修改提纲也是一项截然不同的任务，它要求我们把注意力放在另外一些东西上：不是放在一个思想上，而是放在整个论点上。不过，重要的是，我们不能把提纲理解为写作的准备工作，甚至不能理解为计划，而是要把它理解为我们在整个写作过程中需要经常回到的一项独立任务。我们一直需要一个结构，但随着我们自下而上的工作，它必然会经常变化。而

每当我们需要更新结构的时候，我们就需要退一步，从大局出发，对其进行相应的修改。

Proofreading, formulating and outlining are also different from the task of combining and developing thoughts. Working with the slip-box means playing with ideas and looking out for interesting connections and comparisons. It means building clusters, combining them with other clusters and preparing the order of notes for a project. Here, we need to puzzle with notes and find the best fit. It is much more associative, playful and creative than the other tasks and requires a very different kind of attention as well.

校对、拟稿、提纲，也不同于组合、发展思路的任务。用滑箱工作意味着玩弄思想，寻找有趣的联系和比较。它意味着建立群组，将它们与其他群组结合起来，并为一个项目准备笔记的顺序。在这里，我们需要用笔记来拼图，找到最佳的结合点。与其他任务相比，它更具有联想性、游戏性和创造性，需要的注意力也截然不同。

Reading, of course, is also different. Reading in itself can require very different kinds of attention, depending on the text. Some texts need to be read slowly and carefully, while others are only worth skimming. It would be ridiculous to adhere to a general formula and read every text in the same way, even though that is what many study guides or speed-reading courses try to convince us of. It is not a sign of professionalism to master one technique and stick to it no matter what, but to be flexible and adjust one's reading to whatever speed or approach a text requires.

当然，阅读也是不同的。阅读本身就可以根据文本的不同，需要非常不同的注意力。有些文本需要慢慢地、仔细地阅读，而有些文本只值得略读。如果坚持一个通用的公式，用同样的方法阅读每篇课文，那就太可笑了，尽管这是许多学习指南或速读课程试图说服我们的。掌握一种技巧，无论如何都要坚持，这并不是专业的表现，而是要灵活地调整自己的阅读，以适应文本所要求的任何速度或方法。

In short, academic writing requires the whole spectrum of attention. To master the art of writing, we need to be able to apply whatever kind of attention and focus is needed.

总之，学术写作需要全方位的关注。为了掌握写作的艺术，我们需要能够运用任何一种注意和注意力。

Psychologists used to associate scientific work exclusively with focused attention, while other, more floating kinds of attention were exclusively associated with creative work like art. We know today that we need both kinds of attention for art and science. It is not surprising, therefore, that this flexibility can be found among most, if not all, exceptional scientists. Oshin Vartanian compared and analysed the daily workflows of Nobel Prize winners and other eminent scientists and concluded that it is not a relentless focus, but flexible focus that distinguishes them. “Specifically, the problem-solving behavior of eminent scientists can alternate between extraordinary levels of focus on specific concepts and playful exploration of ideas. This suggests that successful problem solving may be a function of flexible strategy application in relation to task demands.” (Vartanian 2009, 57)

心理学家曾经把科学工作完全与专注的注意力联系在一起，而其他更浮动的注意力则完全与艺术等创造性工作联系在一起。今天我们知道，艺术和科学都需要两种注意。因此，在大多数（如果不是全部）杰出的科学家中都能找到这种灵活性也就不足为奇了。奥申-瓦尔塔尼安比较和分析了诺贝尔奖获得者和其他杰出科学家的日常工作流程，得出的结论是，区别于他们的不是无情的关注，而是灵活的关注。"具体来说，杰出科学家的问题解决行为可以在对特定概念的超常专注和对想法的玩味探索之间交替进行。这表明，成功的问题解决可能是与任务需求相关的灵活策略应用的功能"。(Vartanian 2009，57)

These studies help to solve a puzzle that has bothered psychologists who study creative people as well. “On one hand, those with wandering, defocused, childlike minds seem to be the most creative;

on the other, it seems to be analysis and application that's important. The answer to this conundrum is that creative people need both … The key to creativity is being able to switch between a wide-open, playful mind and a narrow analytical frame." (Dean, 2013, 152)

这些研究有助于解决一个难题，这个难题也一直困扰着研究创造性人才的心理学家。"一方面，那些思维游离、失焦、像孩子一样的人似乎最有创造力；另一方面，似乎分析和应用才是重要的。这个难题的答案是，有创造力的人两者都需要.....创造力的关键是能够在宽广开放、玩乐的心态和狭隘的分析框架之间切换。" (Dean，2013，152)

What psychologists do not discuss, though, are the external conditions that allow us to be flexible in the first place. The mental flexibility to be extremely focused for one moment and playfully explore ideas in the next is just one side of the equation. To be flexible, we need an equally flexible work structure that doesn't break down every time we depart from a preconceived plan. One can be the best driver with the quickest reactions, able to adjust flexibly to different street and weather conditions. None of that will help a bit if the driver is stuck on rails. And it does not help us to have great insight into the necessity of being flexible in our work if we are stuck in a rigid organisation.

不过，心理学家们没有讨论的是，首先让我们能够灵活的_外部条件。前一刻极度专注，下一刻玩命探索想法的心理灵活性，只是方程式的一方面。要做到灵活，我们需要一个同样灵活的工作结构，不要每次背离预设的计划就崩溃。一个人可以成为最好的司机，反应最迅速，能够根据不同的街道和天气状况灵活调整。如果司机卡在轨道上，这些都不会有一点帮助。而如果我们拘泥于一个僵化的组织，也无助于我们对工作中灵活应变的必要性有很深的认识。

Unfortunately, the most common way people organise their writing is by making plans. Although planning is almost universally

recommended by study guides, it's the equivalent of putting oneself on rails.

不幸的是，人们组织写作的最常见方式是制定计划。虽然计划几乎是学习指南普遍推荐的，但这相当于把自己置于轨道上。

Don't make plans. Become an expert.

不要制定计划。成为一个专家。

9.4 Become an Expert Instead of a Planner

9.4 成为专家而不是计划员。

"(An) exclusive use of analytical rationality tends to impede further improvement in human performance because of analytical rationality's slow reasoning and its emphasis on rules, principles, and universal solutions. Second, bodily involvement, speed, and an intimate knowledge of concrete cases in the form of good examples is a prerequisite for true expertise." (Flyvbjerg 2001, 15)

"()由于分析理性的推理速度慢，强调规则、原则和普遍的解决方案，所以，()一味地使用分析理性，往往会阻碍人的业绩的进一步提高。其次，身体的参与、速度以及以好的例子形式对具体案例的深入了解是真正的专业知识的先决条件"。(Flyvbjerg 2001，15)

The moment we stop making plans is the moment we start to learn. It is a matter of practice to become good at generating insight and write good texts by choosing and moving flexibly between the most important and promising tasks, judged by nothing else than the circumstances of the given situation. It is similar to the moment where we had the training wheels of our bikes taken off and started to learn cycling properly. We might have felt a bit insecure in the first moment, but at the same time, it became obvious that we would never have learned to bicycle if we left the training wheels on.

The only thing we would have learned is to ride a bike with training wheels on.

当我们停止制定计划的时候，就是我们开始学习的时候。要善于在最重要的、最有希望的任务之间灵活选择和移动，不以其他为判断标准，只以特定的环境为标准，从而成为善于产生见解、写出好文章的人，这是一个实践的问题。这就好比我们把自行车的训练轮摘下来，开始好好学习自行车的那一刻。我们在第一时间可能会觉得有点不安全，但同时也明白，如果我们不戴训练轮，我们永远也学不会自行车。我们唯一能学会的就是骑上训练轮的自行车。

Similarly, no one would ever learn the art of productive academic writing just by following plans or linear, multistep prescripts — one would learn only to follow plans or prescripts. The widespread praise for planning rests on the misconception that a process like writing an academic text, which is highly dependent on cognition and thinking, can rely on conscious decision-making alone. But academic writing is an art, as well, which means it is something we can become better at with experience and deliberate practice.

同样，没有人会仅仅通过遵循计划或线性的、多步骤的规定来学习高效的学术写作艺术--人们只会学会遵循计划或规定。人们对计划的普遍赞誉，是建立在一种误解上的，即认为学术文本写作这种高度依赖认知和思考的过程，可以仅仅依靠有意识的决策。但学术写作也是一门艺术，这意味着我们可以通过经验和刻意练习变得更好。

Experts rely on embodied experience, which enables them to reach the state of virtuosity. An expert in academic writing has a feel for the process, an acquired intuition for which task will bring one closer to the finished manuscript and what is only a distraction. There can be no universally applicable rule about which step has to be taken when. Each new project is different, and at each stage of the project, it might be best to read up on something, to review a passage, to discuss an idea or to change the outline of the manuscript. There is no universal rule that could tell one upfront at

which stage it wouldn't make sense to follow up on an idea, a possible contradiction or a footnote.

专家依靠的是_身临其境的经验，这使他们能够达到德艺双馨的状态。学术写作的专家对这个过程有一种感觉，有一种后天的直觉，知道哪些任务会让人更接近于成稿，哪些只是一种干扰。关于什么时候必须采取哪一步，不可能有普遍适用的规则。每个新的项目都是不同的，在项目的每一个阶段，可能最好是阅读一些东西，回顾一段话，讨论一个想法，或者改变稿件的大纲。没有一个通用的规则，可以预先告诉人们在哪个阶段跟进一个想法、一个可能的矛盾或一个脚注是没有意义的。

To be able to become an expert, we need the freedom to make our own decisions and all the necessary mistakes that help us learn. Like bicycling, it can only be learned by doing it. Most study guides and academic writing teachers are trying very hard to spare you from that experience by telling you what, when and how to write instead. But they are keeping you from learning the very thing academia and writing is all about: gaining insight and making it public.

为了能够成为专家，我们需要自由地做出自己的决定和所有必要的错误，这有助于我们学习。就像骑自行车一样，只有在实践中才能学会。大多数学习指南和学术写作老师都在非常努力地告诉你写什么、什么时候写、怎么写，以使你免于这种经历。但他们却让你无法学到学术和写作所要做的事情：获得洞察力并将其公开。

And this, by the way, is the reason why you should never ask the teachers of paramedics for help if you find yourself in the admittedly unlikely situation where you can choose the person who should perform CPR on you.

顺便说一下，这就是为什么你永远不应该向医护人员的老师寻求帮助，如果你发现自己处于公认的不太可能的情况下，你可以选择谁应该对你进行心肺复苏。

In an experiment, beginner and expert paramedics and their teachers were shown scenes of CPR performed by either experienced paramedics or those who had just finished their training (Flyvbjerg 2001).[19]

在一项实验中，向初学者和专业辅助医疗人员及其老师展示了由有经验的辅助医疗人员或刚完成培训的辅助医疗人员进行心肺复苏的场景（Flyvbjerg 2001）。[19]

As you might expect, the experienced paramedics were able to spot their kind correctly in almost all cases (~90%), while the beginners were more or less just guessing (~50%). So far, so good. But when the teachers watched the videos, they systematically mistook the beginners for experts and the experts for beginners. They were wrong in most of the cases (and only right in about a third of all the cases).

正如你所预料的那样，有经验的医护人员几乎在所有情况下都能正确地发现他们的同类（约90%），而初学者或多或少只是猜测（约50%）。到目前为止，情况还不错。但是，当老师们观看视频时，他们系统地将初学者误认为是专家，将专家误认为是初学者。他们在大多数情况下都是错误的（只有三分之一的情况下是正确的）。

Hubert and Stuart Dreyfus, researchers on expertise, have a simple explanation: Teachers tend to mistake the ability to follow (their) rules with the ability to make the right choices in real situations. Unlike the expert paramedics, they did not look at the unique circumstances and check if the paramedics in the videos did the best thing possible in each individual situation. Instead, they focused on the question of whether the people in the videos acted according to the rules they taught.

专业知识的研究者Hubert和Stuart Dreyfus有一个简单的解释。教师们往往会把遵循规则的能力 与在实际情况下做出正确选择的能力弄错。与专家型医护人员不同的是，他们并没有审视独特的环境，检查视频中的医护

人员是否在每个单独的情况下做了最好的事情。相反，他们关注的是视频中的人是否按照他们所教的规则行事。

Because trainees lack the experience to judge a situation correctly and confidently, they need to stick to the rules they were taught, much to the delight of their teachers. According to the Dreyfuses, the correct application of teachable rules enables you to become a competent “performer” (which corresponds to a “3” on their five-grade expert scale), but it won’t make you a “master” (level 4) and certainly won’t turn you into an “expert” (level 5).

由于受训者缺乏正确和自信地判断情况的经验，他们需要坚持他们所教的规则，这让他们的老师很高兴。德雷福斯认为，正确运用可教的规则，可以使你成为一个称职的 "执行者"（相当于他们的五级专家量表中的 "3"），但它不会使你成为 "大师"（4级），当然也不会使你变成 "专家"（5级）。

Experts, on the other hand, have internalised the necessary knowledge so they don’t have to actively remember rules or think consciously about their choices. They have acquired enough experience in various situations to be able to rely on their intuition to know what to do in which kind of situation. Their decisions in complex situations are explicitly not made by long rational-analytical considerations, but rather come from the gut (cf. Gigerenzer, 2008a, 2008b).

另一方面，专家已经内化了必要的知识，所以他们不需要主动记住规则，也不需要有意识地思考自己的选择。他们已经在各种情况下获得了足够的经验，能够依靠自己的_直觉知道在哪种情况下应该做什么。他们在复杂情境中的决定显然不是通过长时间的理性分析考虑而做出的，而是来自于直觉（参见Gigerenzer，2008a，2008b）。

Here, gut feeling is not a mysterious force, but an incorporated history of experience. It is the sedimentation of deeply learned practice through numerous feedback loops on success or failure.

[20] Even a rational and analytical endeavour like science does not function without expertise, intuition and experience — which is one of the most interesting outcomes of the empirical research on natural scientists in their laboratories (Rheinberger 1997). Chess players seem to think less than beginners. Rather, they see patterns and let themselves be guided by their experience from the past rather than attempt to calculate turns far into the future.

在这里，直觉不是一种神秘的力量，而是一种融入了历史的经验。它是经过无数次对成功或失败的反馈循环而沉淀下来的深层学习实践。[20]即使像科学这样的理性和分析性的努力，如果没有专业知识、直觉和经验，也是无法运作的--这也是对自然科学家在实验室中的实证研究的最有趣的成果之一(莱茵伯格1997)。国际象棋棋手似乎比初学者思考得更少。相反，他们看到的是模式，让自己在过去的经验指导下，而不是试图计算未来的转折。

But like in professional chess, the intuition of professional academic and nonfiction writing can also only be gained by systematic exposure to feedback loops and experience, which means that success in academic writing depends to a great degree on the organization of its practical side. The workflow around the slip-box is not a prescription that tells you what to do at what stage of writing. On the contrary: It gives you a structure of clearly separable tasks, which can be completed within reasonable time and provides you with instant feedback through interconnected writing tasks. It allows you to become better by giving you the opportunity for deliberate practice. The more experience you gain, the more you will be able to rely on your intuition to tell you what to do next. Instead of taking you “from intuition to professional writing strategies”, as the title of a typical study guide promises, it is here all about becoming a professional by acquiring the skills and experience to judge situations correctly and intuitively so you can chuck misleading study guides for good. Real experts, Flyvbjerg writes unambiguously, don’t make plans (Flyvbjerg 2001, 19).

但就像在专业的国际象棋中一样，专业的学术和非虚构写作的直觉也只有通过系统地接触反馈回路和经验才能获得，这意味着学术写作的成功在很大程度上取决于其实践方面的_整理_。围绕着滑箱的工作流程，并不是告诉你在写作的什么阶段应该做什么的处方。恰恰相反。它为你提供了一个清晰可分的任务结构，可以在合理的时间内完成，并通过相互关联的写作任务为你提供即时反馈。它通过给你刻意练习的机会，让你变得更好。经验积累得越多，你就越能依靠直觉告诉你下一步该怎么做。它不是像典型学习指南的标题所承诺的那样，带你 "从直觉到专业的写作策略"，而是在这里，通过掌握正确和直觉判断情况的技能和经验，成为一个专业的人，这样你就可以永远扔掉误导性的学习指南。真正的专家，Flyvbjerg 毫不含糊地写道，不做计划（Flyvbjerg 2001，19）。

9.5 Get Closure

9.5 获取封闭。

Attention is not our only limited resource. Our short-term memory is also limited. We need strategies not to waste its capacity with thoughts we can better delegate to an external system. While the estimations of our long-term memory capacity are wildly diverse and rather speculative, psychologists used to tend to agree on a very specific number when it came to short-term memory: We can hold a maximum of seven things in our head at the same time, plus/minus two (Miller 1956).

注意力不是我们唯一有限的资源。我们的短期记忆也是有限的。我们需要制定策略，不要把它的容量浪费在我们可以更好地委托给外部系统的想法上。虽然对我们长期记忆能力的估计是千差万别的，而且颇具猜测性，但心理学家在谈到短期记忆时，曾经倾向于同意一个非常具体的数字。我们最多可以同时在脑海中保存七件事情，加上/减去两件（米勒1956）。

Information cannot be saved in short-term memory like on a memory stick. Rather, it kind of floats around in our heads, seeks our attention and occupies valuable mental resources until it is either forgotten, replaced by something more important (according

to our brains) or moved into long-term memory. When we try to remember something, say items on a shopping list, we just keep repeating the items mentally, instead of storing them temporarily in some corner of our brains where we can pick them up later and think about something more interesting in the meantime.

信息不能像记忆棒一样保存在短期记忆中。相反，信息会在我们的脑海中漂浮，寻求我们的关注，并占据宝贵的精神资源，直到它被遗忘，被更重要的东西所取代（根据我们的大脑），或者被转移到长期记忆中。当我们试图记住一些东西时，比如说购物清单上的项目，我们只是在精神上不断重复这些项目，而不是将它们暂时储存在大脑的某个角落，以便我们以后可以拿起它们，同时思考一些更有趣的东西。

But what about memory artists? It might seem like we can increase the number of things we can remember by employing memo techniques — and not just a bit, but significantly. But what we actually do when we use memo techniques is to bundle items together in a meaningful way and remember the bundles — up to about seven (Levin and Levin, 1990). Or, if recent research is right and the participants in earlier tests have always already bundled things together, then the maximum capacity of our working memory is not seven plus/minus two, but more like a maximum of four (Cowan 2001).

但记忆艺术家呢？看起来，我们似乎可以通过运用备忘录技术来增加我们能记住的东西的数量--而且不只是一点点，而是大大增加。但是，当我们使用备忘录技术时，我们实际做的是以一种有意义的方式将项目捆绑在一起，并记住这些捆绑的项目--最多可记住7个左右（Levin和Levin，1990）。或者，如果最近的研究是正确的，而且早期测试的参与者总是已经把东西捆绑在一起，那么我们工作记忆的最大容量不是七加/减二，而更像是最大的_四_（Cowan 2001）。

Have a look at the following number sequence only once and try to remember it right away: 11 95 82 19 62 31 96 64 19 70 51 97 4.

只看一次下面的数字序列，并试着马上记住它。11 95 82 19 62 31 96 64 19 70 51 97 4.

That’s difficult, as it has clearly more than seven digits. But it is quite easy when you realise that these are just five years of the World Cup numbered consecutively. Therefore, you have to remember much less than seven individual items. You only have to remember two — the rule and the starting year.[21]

这是很难的，因为它显然有超过7位的数字。但当你意识到这只是连续编号的5年世界杯时，就很容易了。因此，你要记住的远不止7个单独的项目。你只需要记住两个--规则和起始年份。[21]

This is why it is so much easier to remember things we understand than things we don’t. It is not that we have to choose to focus either on learning or understanding. It is always about understanding — and if it is only for the sake of learning. Things we understand are connected, either through rules, theories, narratives, pure logic, mental models or explanations. And deliberately building these kinds of meaningful connections is what the slip- box is all about.

这就是为什么我们理解的东西比我们不理解的东西更容易记住。这并不是说我们必须选择专注于学习或理解。它总是关于理解--如果它只是为了学习。我们所理解的事物都是_联系在一起的，_无论是通过规则、理论、叙述、纯逻辑、心理模型还是解释。而刻意建立这些种类的有意义的联系正是滑箱的目的。

Every step is accompanied by questions like: How does this fact fit into my idea of …? How can this phenomenon be explained by that theory? Are these two ideas contradictory or do they complement each other? Isn’t this argument similar to that one? Haven’t I heard this before? And above all: What does x mean for y? These questions not only increase our understanding, but facilitate learning as well. Once we make a meaningful connection to an idea or fact, it

is difficult not to remember it when we think about what it is connected with.

每一步都伴随着这样的问题。这个事实如何符合我对... ...的想法？这个现象如何用那个理论来解释？这两个观点是矛盾的还是相辅相成的？这个论点不是和那个论点类似吗？难道我以前没有听说过吗？而最重要的是。X对Y意味着什么？这些问题不仅能增加我们的理解，还能促进学习。一旦我们对一个想法或事实产生了有意义的联系，当我们思考它与什么有关时，很难不记住它。

While we want to remember some things as long as possible, we don't want to clog our brains with irrelevant information. And the way we organise everyday information makes a big difference not only for long-term memories, but short- term as well.

虽然我们希望尽可能长时间地记住一些事情，但我们不想用不相关的信息堵塞我们的大脑。而我们组织日常信息的方式，不仅对长期记忆，对短期记忆也有很大的影响。

Here, we have to thank Soviet psychologist Bluma Zeigarnik for her insight and observational skills. The story goes that she went for lunch with her colleagues and was very impressed by the waiter's ability to remember correctly who ordered what without the need to write anything down. It is said that she had to go back to the restaurant to get the jacket she left there. Much to her surprise, the waiter she admired just minutes ago for his great memory didn't even recognise her. Questioned about what seemed to her a contradiction, he explained that all the waiters had no problem remembering the orders and matching them with the guests at the table. But the very second diners left the restaurant, the waiters all forgot them completely and focused on the next group.

在这里，我们要感谢前苏联心理学家布卢玛-泽加尼克的洞察力和观察力。据说，她和同事们一起去吃午饭，服务员不用写任何东西，就能正确地记住谁点了什么菜，给她留下了非常深刻的印象。据说，她要回餐厅拿

她留在那里的外套。令她惊讶的是，几分钟前她还很佩服服务员的超强记忆力，却连她都不认识了。被问及在她看来很矛盾的问题时，他解释说，所有的服务员都没有问题，他们都能记住订单，并与桌上的客人进行匹配。但就在食客离开餐厅的那一瞬间，服务员们都完全忘记了他们，而专注于下一批客人。

Zeigarnik successfully reproduced what is now known as the Zeigarnik effect: Open tasks tend to occupy our short-term memory — until they are done. That is why we get so easily distracted by thoughts of unfinished tasks, regardless of their importance. But thanks to Zeigarnik's follow-up research, we also know that we don't actually have to finish tasks to convince our brains to stop thinking about them. All we have to do is to write them down in a way that convinces us that it will be taken care of. That's right: The brain doesn't distinguish between an actual finished task and one that is postponed by taking a note. By writing something down, we literally get it out of our heads. This is why David Allen's "Getting things done" system works: The secret to have a "mind like water" is to get all the little stuff out of our short-term memory. And as we can't take care of everything once and for all right now, the only way to do that is to have a reliable external system in place where we can keep all our nagging thoughts about the many things that need to be done and trust that they will not be lost.

Zeigarnik成功地再现了现在所谓的Zeigarnik效应。开放式任务往往会占据我们的短期记忆--直到它们完成。这就是为什么我们很容易被未完成的任务的想法分散注意力，无论其重要性如何。但得益于Zeigarnik的后续研究，我们也知道，其实我们并不一定要完成任务才能说服我们的大脑停止思考它们。我们所要做的就是把它们写下来，让我们相信它会被处理掉。这就对了。大脑并不区分一个实际完成的任务 和一个通过记笔记而推迟的任务. 通过写下一些东西，我们真的把它从脑子里赶出来了。这就是为什么大卫-艾伦的 "把事情做完 "系统有效的原因。拥有 "心如止水 "的秘诀是把所有的小东西从我们的短期记忆中清除掉。而我们现在不可能一劳永逸地处理所有的事情，唯一的办法就是有一个可靠的外部系统，我

们可以把我们对许多需要做的事情的纠结的想法都保存在这个系统中，并相信它们不会丢失。

And the same is true for the work with the slip-box. To be able to focus on the task at hand, we have to make sure other, unfinished tasks are not lingering in our head and wasting precious mental resources.

而对于滑箱的工作也是如此。为了能够专注于手头的工作，我们必须确保其他未完成的任务不会在我们的脑海中挥之不去，浪费宝贵的精神资源。

The first step is to break down the amorphous task of “writing” into smaller pieces of different tasks that can be finished in one go. The second step is to make sure we always write down the outcome of our thinking, including possible connections to further inquiries. As the outcome of each task is written down and possible connections become visible, it is easy to pick up the work any time where we left it without having to keep it in mind all the time. [22] Possible subsequent tasks are open questions or connections to other notes, which we could elaborate on further or not. It also comes up in explicit reminders like “review this chapter and check for redundancies,” which belong into the project folder. Or the third option is the simple fact that something is still in our in-box waiting to be turned into a permanent note — a quick and not-yet-crossed-out note in our notebook, or literature notes not yet archived in our reference system.

第一步是将 "写作 "这一无定形的任务分解成可以一次性完成的小块_不同的任务。第二步是确保我们始终写下思考的结果，包括可能与进一步探究的联系。当每项任务的结果被写下来，可能的联系变得清晰可见，我们就可以很容易地随时在离开的地方拾起工作，而不必一直记在心里。[22]可能的后续任务是开放性的问题或与其他笔记的联系，我们可以进一步阐述或不阐述。也会出现明确的提醒，比如 "复习本章，检查是否有多余的内容"，这属于项目文件夹。或者第三种选择是简单的事实，有些东西还在

我们的收件箱中，等待着变成永久的笔记--笔记本中快速而尚未划掉的笔记，或者参考系统中尚未存档的文献笔记。

All this enables us to later pick up a task exactly where we stopped without the need to “keep in mind” that there still was something to do. That is one of the main advantages of thinking in writing — everything is externalised anyway.

所有这些都使我们以后能够准确地在停止的地方捡起一项任务，而不需要 "牢记 "还有事情要做。这也是书面思考的主要优势之一--反正一切都外化了。

Conversely, we can use the Zeigarnik effect to our advantage by deliberately keeping unanswered questions in our mind. We can ruminate about them, even when we do something that has nothing to do with work and ideally does not require our full attention. Letting thoughts linger without focusing on them gives our brains the opportunity to deal with problems in a different, often surprisingly productive way. While we have a walk or a shower or clean the house, the brain cannot help but play around with the last unsolved problem it came across. And that is why we so often find the answer to a question in rather casual situations.

反过来说，我们可以利用齐加尼克效应的优势，刻意在脑海中保留未解答的问题。我们可以对它们进行反思，即使是在做一些与工作无关的事情时，最好也不需要我们全神贯注。让思绪萦绕而不去关注它们，让我们的大脑有机会以一种不同的、往往是出人意料的方式来处理问题。当我们在散步、洗澡或打扫屋子的时候，大脑会情不自禁地玩味着上次遇到的未解决的问题。这也是为什么我们常常在比较随意的情况下找到问题的答案。

By taking into account these little insights into how our brains work, we can make sure that we will not get distracted by thoughts of what we need from the supermarket when we sit at the desk. Rather, we may solve a crucial problem while we run errands.

通过考虑到这些关于我们大脑工作方式的小见解，我们可以确保当我们坐在办公桌前时，不会因为想到超市里需要什么而分心。相反，我们可能会在跑腿的时候解决一个关键问题。

9.6 Reduce the Number of Decisions

9.6 减少决定的次数。

Next to the attention that can only be directed at one thing at a time and the short-term memory that can only hold up to seven things at once, the third limited resource is motivation or willpower. Here, too, the environmental design of our workflow makes all the difference. It shouldn't come as a surprise anymore that a close cooperation with the slip-box turns out to be far superior to any sophisticated planning.

除了一次只能针对一件事的注意力和一次最多只能容纳七件事的短期记忆之外，第三种有限的资源是动机或意志力。在这里，我们工作流程的环境设计也会带来不同的影响。与滑板箱的紧密配合，原来远胜于任何复杂的规划，这已经不奇怪了。

For the longest time, willpower was seen more as a character trait than a resource. This has changed. Today, willpower is compared to muscles: a limited resource that depletes quickly and needs time to recover. Improvement through training is possible to a certain degree, but takes time and effort. The phenomenon is usually discussed under the term "ego depletion": "We use the term ego depletion to refer to a temporary reduction in the self's capacity or willingness to engage in volitional action (including controlling the environment, controlling the self, making choices, and initiating action) caused by prior exercise of volition." (Baumeister et al., 1998, 1253)

长期以来，意志力更多地被视为一种性格特征，而不是一种资源。这种情况已经发生了变化。今天，意志力被比作肌肉：一种有限的资源，消耗得很快，需要时间来恢复。通过训练在一定程度上可以改善，但需要时间和

努力。这种现象通常用 "自我消耗 "一词来讨论。"我们使用的术语_自我耗竭_指的是自我的能力或意愿的暂时减少从事意志行动（包括控制环境，控制自我，做出选择，并启动行动）造成的先前行使的意志。" (Baumeister等人，1998，1253)

One of the most interesting findings of the research on ego depletion is the broad variety of things that can have a depleting effect.

关于自我消耗的研究中，最有趣的发现之一是可以产生消耗作用的事情种类繁多。

“Our results suggest that a broad assortment of actions make use of the same resource. Acts of self–control, responsible decision making, and active choice seem to interfere with other such acts that follow soon after. The implication is that some vital resource of the self becomes depleted by such acts of volition. To be sure, we assume that this resource is commonly replenished, although the factors that might hasten or delay the replenishment remain unknown, along with the precise nature of this resource.” (Baumeister et al., 1998, 1263f)

"我们的结果表明，各种各样的行为都在利用同一种资源。自我控制、负责任的决策和积极选择的行为似乎会干扰其他不久之后的此类行为。其含义是，自我的某种重要资源因这种意志行为而变得枯竭。可以肯定的是，我们假设这种资源通常会得到补充，尽管可能加速或延迟补充的因素以及这种资源的确切性质仍然是未知的。" (Baumeister等人，1998年，1263f)

Even something seemingly unrelated like being the victim of prejudices can have a significant effect (Inzlicht, McKay, and Aronson, 2006) as “controlling the influence of stereotypes (… may rely on the same…) limited–strength resource on which people draw for self–regulation” (Govorun and Payne 2006, 112).

即使是一些看似无关的事情，如成为偏见的受害者，也会产生显著的影响（Inzlicht, McKay, and Aronson, 2006），因为 "控制刻板印象的影响（.....可能依赖于同样的.....）有限的强度资源，而人们正是依靠这种资源进行自我调节的"（Govorun and Payne 2006, 112）。

The smartest way to deal with this kind of limitation is to cheat. Instead of forcing ourselves to do something we don't feel like doing, we need to find a way to make us feel like doing what moves our project further along. Doing the work that need to be done without having to apply too much willpower requires a technique, a ruse.

处理这种限制的最聪明的方法是作弊。与其强迫自己去做一些我们不喜欢做的事情，不如想办法让自己觉得做的事情能让我们的项目更进一步。做需要做的工作，而不需要运用过多的意志力，这就需要一种技巧，一种诡计。

Even though results of these studies are currently under intense scrutiny and have to be taken with a grain of salt (Carter and McCullough 2014; Engber and Cauterucci 2016; Job, Dweck and Walton 2010), it is safe to argue that a reliable and standardised working environment is less taxing on our attention, concentration and willpower, or, if you like, ego. It is well known that decision-making is one of the most tiring and wearying tasks, which is why people like Barack Obama or Bill Gates only wear two suit colours: dark blue or dark grey. This means they have one less decision to make in the morning, leaving more resources for the decisions that really matter.

即使这些研究的结果目前正在受到严格的审查，并且必须带着盐分（卡特和麦卡洛2014年; Engber和Cauterucci 2016年; Job，Dweck和Walton 2010年），但可以肯定的是，一个可靠和标准化的工作环境对我们的注意力，注意力和意志力，或者，如果你喜欢，_自我_的税收较少。众所周知，决策是最累人的工作之一，这也是为什么像奥巴马或比尔-盖茨这样

的人只穿两种颜色的西装：深蓝色或深灰色。这意味着他们早上少了一个决策，把更多的资源留给真正重要的决策。

In the way we organise our research and writing, we too can significantly reduce the amount of decisions we have to make. While content-related decisions have to be made (on what is more and what is less important in an article, on the connections between notes, the structure of a text, etc.), most organisational decisions can be made up front, once and for all, by deciding on one system. By always using the same notebook for making quick notes, always extracting the main ideas from a text in the same way and always turning them into the same kind of permanent notes, which are always dealt with in the same manner, the number of decisions during a work session can be greatly reduced. That leaves us with much more mental energy that we can direct towards more useful tasks, like trying to solve the problems in question.

在组织研究和写作的方式上，我们也可以大大减少我们必须做出的决定。虽然与内容有关的决定必须要做（关于一篇文章中哪些是比较重要的，哪些是不那么重要的，关于笔记之间的联系，文本的结构等等），但大多数组织上的决定可以在前面做出，一劳永逸，通过决定_一个系统。通过总是使用同一个笔记本做快速笔记，总是以同样的方式从文本中提取主要观点，并总是将其转化为同一种永久性的笔记，并总是以同样的方式进行处理，可以大大减少工作会议期间的决策次数。这样一来，我们就有更多的精神力量，可以把这些精神力量用于更有用的任务，比如努力解决有关问题。

Being able to finish a task in a timely manner and to pick up the work exactly where we left it has another enjoyable advantage that helps to restore our attention: We can have breaks without fear of losing the thread. Breaks are much more than just opportunities to recover. They are crucial for learning. They allow the brain to process information, move it into long-term memory and prepare it for new information (Doyle and Zakrajsek 2013, 69).[23] If we don't give ourselves a break in between work sessions, be it out of

eagerness or fear of forgetting what we were doing, it can have a detrimental effect on our efforts. To have a walk (Ratey, 2008) or even a nap[24] supports learning and thinking.[25]

能够及时完成一项任务，并在我们离开的地方重新开始工作，还有一个令人愉快的优势，有助于恢复我们的注意力。我们可以有休息时间，而不用担心失去线索。休息时间不仅仅是恢复的机会。它们对学习至关重要。它们让大脑处理信息，将其移入长期记忆，并为新信息做好准备(Doyle and Zakrajsek 2013，69)。[23]如果我们在工作间隙不给自己休息的机会，无论是出于急切还是害怕忘记我们正在做的事情，都会对我们的努力产生不利影响。散散步(Ratey，2008)，甚至打个盹[24]可以支持学习和思考。[25]

10 Read for Understanding

10阅读理解

“I would advise you to read with a pen in your hand and enter in a little book short hints of what you feel that is common or that may be useful; for this will be the best method of imprinting such portcullis in your memory.” — Benjamin Franklin[26]

"我建议你用手中的笔阅读，并在一个小本子上输入你觉得常见的或可能有用的简短提示；因为这将是把这种港湾印在你的记忆中的最好方法。" – 本杰明–富兰克林[26]

10.1 Read With a Pen in Hand

10.1手握钢笔阅读。

To get a good paper written, you only have to rewrite a good draft; to get a good draft written, you only have to turn a series of notes into a continuous text. And as a series of notes is just the

rearrangement of notes you already have in your slip-box, all you really have to do is have a pen in your hand when you read.

要想写出一篇好的论文，你只需要重写一篇好的草稿；要想写出一篇好的草稿，你只需要把一系列的笔记变成连续的文字。而由于一系列笔记只是你的便签箱里已经有的笔记的重新整理，你所要做的_真正要做的就是在你阅读的时候手里有一支笔。

If you understand what you read and translate it into the different context of your own thinking, materialised in the slip-box, you cannot help but transform the findings and thoughts of others into something that is new and your own. It works both ways: The series of notes in the slip-box develops into arguments, which are shaped by the theories, ideas and mental models you have in your head. And the theories, ideas and mental models in your head are also shaped by the things you read. They are constantly changing and challenged by the surprising connections with which the slip-box confronts you. The richer the slip-box becomes, the richer your own thinking becomes. The slip-box is an idea generator that develops in lockstep with your own intellectual development. Together, you can turn previously separated or even isolated facts into a critical mass of interconnected ideas.

如果你理解了你所读到的东西，并把它转化为自己思维的不同背景，物化在便笺盒中，你就不能不把别人的发现和思想转化为新的、属于你自己的东西。它是双向的。滑匣中的一系列笔记会发展成论点，这些论点是由你脑海中的理论、想法和心理模型所形成的。而你脑海中的理论、想法和心理模型也是由你阅读的东西所塑造的。它们不断地变化，并被滑箱与你面对面的惊人联系所挑战。滑箱越丰富，你的思维就越丰富。便利箱是一个想法的生成器，它与您自己的智力发展同步发展。你们可以一起把以前分离的甚至是孤立的事实，变成大量相互联系的思想。

The step from the slip-box to the final text is pretty straightforward. The content is already meaningful, thought through and in many parts already put into well-connected sequences. The notes only

need to be put into a linear order. While the notes themselves are formulated so that they can be understood on their own, they are at the same time embedded in one or more contexts that enrich their meaning. Drawing from the slip-box to develop a draft is more like a dialogue with it than a mechanical act. Therefore, the outcome is never a copy of previous work, but always comes with surprises. There will always be something you couldn't have anticipated. Obviously, the same applies to every single step before. The outcome of reading with a pen in the hand is not possible to anticipate either, and here, too, the idea is not to copy, but to have a meaningful dialogue with the texts we read.

从滑箱到最终文本的步骤非常简单。内容已经是有意义的，经过深思熟虑的，而且在许多地方已经被放到了良好的连接序列中。笔记只需要放在一个线性的顺序中。虽然笔记本身的表述使它们可以单独理解，但它们同时又被嵌入一个或多个语境中，丰富了它们的意义。从滑稽箱中抽丝剥茧地拟定草稿，与其说是一种机械的行为，不如说是一种与之对话的过程。因此，结果永远不是前人作品的复制，而总是伴随着惊喜。总会有一些你无法预料的东西。显然，之前的每一步也是如此。手中拿笔阅读的结果也不可能预料到，这里也不是要复制，而是要与我们阅读的文本进行有意义的对话。

When we extract ideas from the specific context of a text, we deal with ideas that serve a specific purpose in a particular context, support a specific argument, are part of a theory that isn't ours or written in a language we wouldn't use. This is why we have to translate them into our own language to prepare them to be embedded into new contexts of our own thinking, the different context(s) within the slip-box. Translating means to give the truest possible account of the original work, using different words — it does not mean the freedom to make something fit. As well, the mere copying of quotes almost always changes their meaning by stripping them out of context, even though the words aren't changed. This is a common beginner mistake, which can only lead to a patchwork of ideas, but never a coherent thought.

当我们从文本的具体语境中提取观点时，我们处理的是在特定语境中服务于特定目的、支持特定论点的观点，是不属于我们的理论的一部分，或者是用我们不会使用的语言写成的。这就是为什么我们必须将它们翻译成我们自己的语言，以准备将它们嵌入到我们自己的思维的新语境中，即滑箱内的不同语境（s）。翻译的意思是用不同的文字，尽可能真实地描述原作--它并不意味着自由地使一些东西适合。同样，仅仅复制引文几乎总是通过将其从上下文中剥离出来而改变其含义，即使单词没有改变。这是初学者常犯的错误，这只能导致思路的拼凑，却永远无法形成连贯的思路。

While the literature notes will be stored within the reference system together with the bibliographic details, separate from the slip-box, but still close to the context of the original text, they are already written with an eye towards the lines of thoughts within the slip-box. Luhmann describes this step as follows: “I always have a slip of paper at hand, on which I note down the ideas of certain pages. On the backside I write down the bibliographic details. After finishing the book I go through my notes and think how these notes might be relevant for already written notes in the slip-box. It means that I always read with an eye towards possible connections in the slip-box.” (Luhmann et al., 1987, 150)

虽然文献笔记会和书目细节一起存放在参考系统内，与滑箱分开，但仍然贴近原文的上下文，但在写的时候已经注意到了滑箱内的行文思路。卢曼对这一步骤的描述如下。"我手边总是有一张纸条，我在上面记下某些页面的想法。在背面我写下书目细节。看完书后，我就会翻阅我的笔记，并思考这些笔记与纸条箱里已经写好的笔记有什么关联。这意味着，我在阅读时总是着眼于便签盒中可能的联系"。(Luhmann等人，1987，150)

How extensive the literature notes should be really depends on the text and what we need it for. It also depends on our ability to be concise, the complexity of the text and how difficult it is to understand. As literature notes are also a tool for understanding and grasping the text, more elaborate notes make sense in more challenging cases, while in easier cases it might be sufficient to just

jot down some keywords. Luhmann, certainly being on the outer spectrum of expertise, contented himself with pretty short notes and was still able to turn them into valuable slip-box notes without distorting the meaning of the original texts.[27] It is mainly a matter of having an extensive latticework of mental models or theories in our heads that enable us to identify and describe the main ideas quickly (cf. Rickheit and Sichelschmidt, 1999). Whenever we explore a new, unfamiliar subject, our notes will tend to be more extensive, but we shouldn't get nervous about it, as this is the deliberate practice of understanding we cannot skip. Sometimes it is necessary to slowly work our way through a difficult text and sometimes it is enough to reduce a whole book to a single sentence. The only thing that matters is that these notes provide the best possible support for the next step, the writing of the actual slip-box notes. And what is most helpful is to reflect on the frame, the theoretical background, methodological approach or perspective of the text we read. That often means to reflect as much on what is not mentioned as what is mentioned.

文献注释的内容应该有多广泛，其实取决于文本和我们需要它的目的。也要看我们的简明能力、文本的复杂程度和理解难度。因为文献笔记也是理解和把握文本的工具，在比较有难度的情况下，更详尽的笔记是有意义的，而在比较容易的情况下，可能只需要记下一些关键词就可以了。卢曼当然是在专业知识的外围，他满足于相当简短的笔记，而且还能在不歪曲原文意思的情况下，把它们变成有价值的滑箱笔记。[27]这主要是在我们的脑海里有一个广泛的心理模型或理论的网格，使我们能够迅速地识别和描述主要观点（参见Rickheit和Sichelschmidt，1999）。每当我们探索一个新的、陌生的主题时，我们的笔记往往会更多，但我们不应该为此而紧张，因为这是我们不能跳过的理解的刻意练习。有时候，我们需要慢慢地把一篇难懂的文章看完，有时候把整本书的内容缩成一句话就可以了。唯一重要的是，这些笔记为下一步，也就是实际滑箱笔记的写作提供了最好的支持。而最有帮助的是反思我们所读文本的框架、理论背景、方法论或视角。这往往意味着要反思_没有提到的东西和提到的东西一样多。

Taking literature notes this way is very different from the way literature notes are taken by most students, which is either not systematic enough or overly systematic. Most often, it is just systematic in the wrong way: By employing often–recommended reading techniques like SQ3R or SQ4R, they treat every text the same, regardless of the content. They do not clearly decide on the format and the organisation of their notes and do not have a plan for what to do with them afterwards. Without a clear purpose for the notes, taking them will feel more like a chore than an important step within a bigger project. Sometimes, long excerpts are written with good intentions, but that is not sustainable. Sometimes the only thing that is done is underlining sentences and making some comments in the margins of a book, which is almost like taking no notes at all. And more often than not, reading is not accompanied by taking notes, which is, in terms of writing, almost as valuable as not having read at all. Here, everything is about building up a critical mass of useful notes in the slip–box, which gives us a clear idea of how to read and how to take literature notes.

这样做文献笔记与大多数学生做文献笔记的方式有很大的不同，要么不够系统，要么过于系统。大多数情况下，只是系统的方式不对。通过采用经常被推荐的阅读技巧，如SQ3R或SQ4R，他们对待每一篇文章都是一样的，不管内容如何。他们没有明确地决定笔记的格式和组织方式，也没有计划事后如何处理笔记。如果没有一个明确的目的，做笔记会感觉更像是一件苦差事，而不是一个大项目中的重要步骤。有时候，写长篇摘抄的意图是好的，但这是不可持续的。有时，只在书的空白处划下句子，做一些注释，这几乎等于没有做笔记。而更多的时候，读书的同时并没有做笔记，就写作而言，这几乎和根本没有读过书一样可贵。在这里，_一切都要在滑箱中建立起足够数量的有用笔记，这让我们对如何阅读和如何做文学笔记有了清晰的认识。

While the purpose of taking literature notes is as clear as the procedure, you are free to use whatever technique helps the most with understanding what you are reading and getting to useful notes — even if you use ten different colours for underlining and a SQ8R

reading technique. But all of this would be just an extra step before you do the only step that really counts, which is to take the permanent note that will add value to the actual slip-box. You need to take some form of literature note that captures your understanding of the text, so you have something in front of your eyes while you are making the slip-box note. But don't turn it into a project in itself. Literature notes are short and meant to help with writing slip-box notes. Everything else either helps to get to this point or is a distraction.

虽然做文献笔记的目的和程序一样明确，你可以自由地使用任何对理解你所读的内容和获得有用的笔记最有帮助的技术--即使你用十种不同的颜色做下划线和SQ8R阅读技术。但所有这些都将只是在你做真正重要的唯一步骤之前的一个额外步骤，即采取永久的笔记，这将增加实际滑箱的价值。你需要采取某种形式的文献笔记，抓住你对文本的理解，这样你在做滑箱笔记的时候，眼前就会有一些东西。但不要把它本身变成一个项目。文学笔记很短，是为了帮助写滑箱笔记。其他的一切要么有助于达到这个目的，要么就是分散注意力。

You can type a literature note directly into Zotero, where it will be stored with the bibliographic details. You might want to write them by hand, though. Different independent studies indicate that writing by hand facilitates understanding. In a small but fascinating study, two psychologists tried to find out if it made a difference if students in a lecture took notes by hand or by typing them into their laptops (Mueller and Oppenheimer 2014). They were not able to find any difference in terms of the number of facts the students were able to remember. But in terms of understanding the content of the lecture, the students who took their notes by hand came out much, much better. After a week, this difference in understanding was still clearly measurable.

你可以直接在Zotero中输入文献笔记，在那里它将和书目细节一起存储。不过，你可能想用手写它们。不同的独立研究表明，手写有利于理解。在一项小规模但引人入胜的研究中，两位心理学家试图找出在讲座中学生是

用手写笔记还是通过将笔记打入笔记本电脑的方式来做笔记是否有区别（Mueller和Oppenheimer，2014）。他们没能发现在学生能够记住的事实数量上有什么不同。但是在_理解讲座内容方面，手写笔记的学生的表现要好很多很多。一周后，这种理解上的差异仍然可以清晰地测量出来。

There is no secret to it and the explanation is pretty simple: Handwriting is slower and can't be corrected as quickly as electronic notes. Because students can't write fast enough to keep up with everything that is said in a lecture, they are forced to focus on the gist of what is being said, not the details. But to be able to note down the gist of a lecture, you have to understand it in the first place. So if you are writing by hand, you are forced to think about what you hear (or read) — otherwise you wouldn't be able to grasp the underlying principle, the idea, the structure of an argument. Handwriting makes pure copying impossible, but instead facilitates the translation of what is said (or written) into one's own words. The students who typed into their laptops were much quicker, which enabled them to copy the lecture more closely but circumvented actual understanding. They focused on completeness. Verbatim notes can be taken with almost no thinking, as if the words are taking a short cut from the ear to the hand, bypassing the brain.

这没有什么秘诀，解释起来也很简单。手写的速度比较慢，而且不能像电子笔记那样快速纠正。因为学生写得不够快，跟不上讲课的所有内容，所以他们不得不把注意力放在讲课的要点上，而不是细节上。但是，要想记下讲课的要点，首先要理解它。所以，如果你是手写，你就会_被迫去思考你所听到（或读到）的东西--否则你就无法把握一个论点的基本原理、思想、结构。手写使纯粹的抄写成为不可能，反而有利于将所说（或所写）的内容转化为自己的语言。打入笔记本电脑的学生速度更快，这使他们能够更紧密地抄写讲稿，但规避了实际理解。他们注重的是完整性。逐字记录几乎可以不需要思考，仿佛文字从耳朵到手的捷径，绕过了大脑。

If you decide to write your notes by hand, just keep them in one place and sort them alphabetically in the usual way: "SurnameYear".

Then you can easily match them with the bibliographic details in your reference system. But whether you write them by hand or not, keep in mind that it is all about the essence, the understanding and preparation for the next step — the transferring of ideas into the context of your own lines of thoughts in the slip-box.

_如果你决定用手写笔记，只需把它们放在一个地方，并按通常的方式按字母顺序分类。"SurnameYear". 然后你就可以很容易地将它们与参考系统中的书目细节进行匹配。但无论您是否手写，请记住，这都是关于本质的，理解并为下一步做准备--将想法转移到您自己在滑箱中的思路中。

10.2 Keep an Open Mind

10.2 保持开放的心态。

While selectivity is the key to smart note-taking, it is equally important to be selective in a smart way. Unfortunately, our brains are not very smart in selecting information by default. While we should seek out dis-confirming arguments and facts that challenge our way of thinking, we are naturally drawn to everything that makes us feel good, which is everything that confirms what we already believe we know.

虽然选择性是聪明记笔记的关键，但聪明的选择性同样重要。不幸的是，我们的大脑在选择信息方面默认不是很聪明。虽然我们应该寻找那些挑战我们思维方式的不确凿的论点和事实，但我们却自然而然地被一切让我们感觉良好的东西所吸引，也就是一切能证实我们已经相信自己知道的东西。

The very moment we decide on a hypothesis, our brains automatically go into search mode, scanning our surroundings for supporting data, which is neither a good way to learn nor research. Worse, we are usually not even aware of this confirmation bias (or myside bias[28]) that surreptitiously meddles with our life. Somehow, we just seem to happen to be surrounded by people who all think alike. (Not on purpose, of course. We just spend our time

with people we like. And why do we like them? Correct: Because they think like us.) We just seem to happen to read the publications that tend to confirm what we already know. (Not on purpose, of course. We just try to stick with good, intelligent texts. And what makes us think these texts are good and intelligent? Correct: because they make sense to us.) We look around and just cut out dis-confirming facts without even noticing what we don't see, very much like the same city can one day be full of happy people and the other day full of miserable ones, depending on our mood.

在我们决定一个假设的那一刻，我们的大脑就会自动进入搜索模式，扫描周围的环境，寻找支持数据，这既不是一种好的学习和研究方式。更糟糕的是，我们通常甚至没有意识到这种_确认偏差_（或myside bias[28]），它暗中干扰着我们的生活。不知道为什么，我们似乎只是碰巧被周围的人所包围，他们的想法都是一样的。(当然，不是故意的。我们只是把时间花在我们喜欢的人身上。为什么我们会喜欢他们呢？正确：因为他们的想法和我们一样）。) 我们似乎只是碰巧读到了那些倾向于证实我们已经知道的出版物。当然，不是故意的。我们只是试图坚持阅读好的、有智慧的文本。是什么让我们认为这些文本是好的、聪明的呢？正确：因为它们对我们有意义。) 我们环顾四周，只顾着剔除不确认的事实，却根本没有注意到自己没有看到的东西，很像同一座城市可以有一天满是快乐的人，有一天满是悲惨的人，这取决于我们的心情。

Confirmation bias is a subtle but major force. As the psychologist Raymond Nickerson puts it: “If one were to attempt to identify a single problematic aspect of human reasoning that deserves attention above all others, the confirmation bias would have to be among the candidates for consideration” (Nickerson 1998, 175).

确认偏差是一种微妙而主要的力量。正如心理学家雷蒙德-尼克森所说的那样。"如果有人试图找出人类推理中最值得关注的一个有问题的方面，确认偏差将是考虑的候选人之一"（尼克森1998，175）。

Even the best scientists and thinkers are not free from it. What sets them apart is the mere fact that they are aware of the problem and

do something about it. The classic role model would be Charles Darwin. He forced himself to write down (and therefore elaborate on) the arguments that were the most critical of his theories. “I had [...] during many years followed a golden rule, namely, that whenever a published fact, a new observation or thought came across me, which was opposed to my general results, to make a memorandum of it without fail and at once; for I had found by experience that such facts and thoughts were far more apt to escape from the memory than favorable ones. Owing to this habit, very few objections were raised against my views, which I had not at least noticed and attempted to answer.” (Darwin 1958, 123)

即使是最优秀的科学家和思想家也无法摆脱它。他们的与众不同之处，仅仅是他们意识到了这个问题，并对此有所行动。经典的榜样是查尔斯-达尔文。他强迫自己把对他的理论最具批判性的论点写下来（因此要详细说明）。"我曾[.....]在许多年中遵循了一条金科玉律，即每当我遇到与我的一般结果相反的已发表的事实、新的观察或思想时，都要不失时机地立即把它记下来；因为我根据经验发现，这种事实和思想比有利的事实和思想更容易从记忆中逃脱。由于这种习惯，很少有人对我的观点提出反对意见，而我至少没有注意到这些反对意见，并试图回答这些反对意见。" (达尔文1958，123)

This is a good (primarily mental) technique to deal with confirmation bias. But we are looking for ways to implement insight into our psychological limitations in an external system. We want to make the right decisions without too much mental effort — very much like Odysseus, who made it impossible for himself to follow the luring singing of the Sirens by getting himself lashed to the mast of his ship. With a good system, the mere necessities of the workflow will force us to act more virtuously without actually having to become more virtuous. Confirmation bias is tackled here in two steps: First, by turning the whole writing process on its head, and secondly, by changing the incentives from finding confirming facts to an indiscriminate gathering of any relevant information regardless of what argument it will support.

这是一种很好的（主要是心理）处理确认偏差的技术。但我们要寻找的是如何在外部系统中实施对我们心理局限性的洞察。我们希望不需要付出太多心理努力就能做出正确的决定--很像奥德修斯，他通过让自己被绑在船的桅杆上，使自己无法跟随海妖们的诱人歌声。有了一个好的系统，仅仅是工作流程的需要，就会迫使我们更加良性地行动，而实际上不必变得更加良性。确认偏差在这里分两步解决。首先，把整个写作过程颠倒过来， 其次，把激励机制从寻找确认事实转变为不分青红皂白地收集任何相关信息，不管它能支持什么论点。

The linear process promoted by most study guides, which insanely starts with the decision on the hypothesis or the topic to write about, is a sure-fire way to let confirmation bias run rampant. First, you basically fix your present understanding, as the outcome instead of using it as the starting point, priming yourself for one-sided perception. Then you artificially create a conflict of interest between getting things done (finding support for your preconceived argument) and generating insight, turning any departure from your preconceived plan into a mutiny against the success of your own project. This is a good rule of thumb: If insight becomes a threat to your academic or writing success, you are doing it wrong.

大多数学习指南所提倡的线性过程，疯狂地从决定假设或主题开始写，是让确认偏差肆虐的必经之路。首先，你基本固定了你现在的理解，作为结果，而不是把它作为出发点，为自己的片面认知做好了铺垫。然后，你人为地在完成任务（为你的预设论点寻找支持）和产生洞察力之间制造了利益冲突，将任何偏离你预设计划的行为变成了对自己项目成功的叛变。这是一个很好的经验法则：如果洞察力成为对你的学术或写作成功的威胁，你就做错了。

Developing arguments and ideas bottom-up instead of top-down is the first and most important step to opening ourselves up for insight. We should be able to focus on the most insightful ideas we encounter and welcome the most surprising turns of events without jeopardizing our progress or, even better, because it brings our project forward. We postpone the decision on what to write about

specifically and focus on building a critical mass within the slip-box. Instead of having the hypothesis in mind all the time, we want to:

自下而上而不是自上而下地发展论点和想法，是我们打开自己洞察力的第一步，也是最重要的一步。我们应该能够专注于我们遇到的最有洞察力的想法，并欢迎最令人惊讶的事件转折，而不会危及我们的进展，甚至更好的是，因为它使我们的项目向前发展。我们推迟决定具体写什么，集中精力在滑箱内建立临界质量。而不是一直在脑海里想着假设，我们要。

· Confirm that we have separated tasks and focus on understanding the text we read,

- 确认我们已经分清了任务，专注于理解我们所读的文章。

· Make sure we have given a true account of its content

- 确保我们已经如实说明了其内容。

· Find the relevance of it and make connections.

- 找到其中的关联性，并建立联系。

Only then do we take a step back to look at what developed, then make a decision on what conclusions are to be drawn from that.

只有这样，我们才会后退一步，看看发展了什么，然后再决定从中得出什么结论。

The slip-box forces us to be selective in reading and note-taking, but the only criterion is the question of whether something adds to a discussion in the slip-box. The only thing that matters is that it connects or is open to connections. Everything can contribute to the development of thoughts within the slip-box: an addition as well as a contradiction, the questioning of a seemingly obvious idea as well as the differentiation of an argument. What we are looking for are facts and information that can add something and therefore enrich the slip-box. One of the most important habitual changes when

starting to work with the slip-box is moving the attention from the individual project with our preconceived ideas towards the open connections within the slip-box.

滑箱迫使我们有选择地阅读和记笔记，但唯一的标准是_某件事情是否对滑箱中的讨论有所补充_的问题。唯一重要的是它_有联系或者是开放的联系_。任何东西都可以促进滑箱中思想的发展：既可以是补充，也可以是矛盾，既可以是对一个看似明显的想法的质疑，也可以是对一个论点的区分。我们要寻找的是能够增加_东西的事实和信息，从而丰富滑板箱的内容。当开始使用滑箱时，最重要的一个习惯性改变是将注意力从带有我们先入为主想法的单个项目转向滑箱内的开放性联系。

After aligning our interests, we can go a step further and prime ourselves for seeking out dis-confirming facts. Collecting only one-sided ideas wouldn't be very enriching. Yes, we have to be selective, but not in terms of pros and cons, but in terms of relevant or irrelevant. And as soon we focus on the content of the slip-box, dis-confirming data becomes suddenly very attractive, because it opens up more possible connections and discussions within the slip- box, while mere confirming data does not. It becomes easier to seek out dis- confirming data with practice and can become quite addictive. The experience of how one piece of information can change the whole perspective on a certain problem is exciting. And the more diverse the content of the slip-box is, the further it can bring our thinking forward — provided we haven't decided on the direction upfront. Contradictions within the slip-box can be discussed on follow-up notes or even in the final paper. It is so much easier to develop an interesting text from a lively discussion with a lot of pros and cons than from a collection of one-sided notes and seemingly fitting quotes. In fact, it is almost impossible to write anything interesting and worth publishing (and therefore motivating) if it is based on nothing else than an idea we were able to come up with up front before elaborating on the problem.

在利益一致之后，我们就可以更进一步，为寻求非证实性的事实做好准备。只收集片面的想法不会很充实。是的，我们要有所选择，但不是以利弊为标准，而是以相关或不相关为标准。而只要我们把注意力放在滑箱的内容上，不确认的数据就会突然变得非常有吸引力，因为它在滑箱内打开了更多可能的联系和讨论，而单纯的确认数据则不然。随着实践的进行，寻找不确认的数据会变得更加容易，并且会变得相当容易上瘾。一条信息如何改变对某一问题的整个看法，这种体验是令人兴奋的。滑动箱的内容越是多样化，它就能把我们的思维带得更远--前提是我们事先还没有决定方向。滑箱内的矛盾可以在后续的笔记中甚至在最后的论文中讨论。从充满利弊的热烈讨论中发展出一篇有趣的文章，比起收集片面的笔记和看似合适的名言，要容易得多。事实上，如果在阐述问题之前，写出任何有趣的、值得发表的东西（因此也是激励性的），几乎是不可能的，因为它所基于的只是我们前期能够想到的一个想法。

The slip-box is pretty agnostic about the content it is fed. It just prefers relevant notes. It is a fter reading and collecting relevant data, connecting thoughts and discussing how they fit together that it is time to draw conclusions and develop a linear structure for the argument.

滑盖箱对它所收到的内容是相当不可知的。它只是更喜欢_相关的笔记。在阅读和收集相关数据、连接思想并讨论它们如何结合在一起之后，才是得出结论并为论点制定线性结构的时候。

10.3 Get the Gist

10.3掌握要点。

The ability to distinguish relevant from less relevant information is another skill that can only be learned by doing. It is the practice of looking for the gist and distinguishing it from mere supporting details. As we are forced to make this distinction when we read with a pen in our hand and write permanent note after permanent note, it is more than mere practice: it is deliberate practice repeated multiple times a day. Extracting the gist of a text or an idea and

giving an account in writing is for academics what daily practice on the piano is for pianists: The more often we do it and the more focused we are, the more virtuous we become.

区分相关信息和不太相关信息的能力是另一项只能通过实践才能学会的技能。它是一种寻找要点并将其与单纯的辅助细节区分开来的做法。当我们用手中的笔进行阅读，写下一张又一张的永久笔记时，我们就不得不做出这种区分，这不仅仅是练习：而是每天重复多次的刻意练习。提取一篇文章或一种思想的要点，并以书面形式加以说明，对于学者来说，就像每天的钢琴练习对于钢琴家一样。我们做得越多，越专注，我们就越有德行。

Patterns that help us navigate texts and discourses are not only theories, concepts or the respective terminology, but also typical mistakes we automatically scan an argument for, general categories we apply, writing styles that indicate a certain school of thought or mental models we learn or develop from different insights and can collect like a great and ever- increasing set of thinking tools. Without these tools and reference points, no professional reading or understanding would be possible. We would read every text in the same way: like a novel. But with the learned ability of spotting patterns, we can enter the circle of virtuosity: Reading becomes easier, we grasp the gist quicker, can read more in less time, and can more easily spot patterns and improve our understanding of them. And along the way, we increase our set of thinking tools, which will not only help with academic work, but with thinking and understanding in general. That is why Berkshire Hathaway vice chairman Charlie Munger describes as worldly-wise someone who has a broad set of these tools and knows how to apply them.

帮助我们驾驭文本和话语的模式不仅是理论、概念或相应的术语，还包括我们自动扫描论点的典型错误、我们应用的一般类别、表明某一学派的写作风格或我们从不同的见解中学习或发展出来的心智模式，可以像一套伟大的、不断增加的思维工具一样收集起来。如果没有这些工具和参考点，就不可能有专业的阅读和理解。我们会以同样的方式阅读每一篇文字：像读小说一样。但是，如果学会了发现模式的能力，我们就可以进入德艺双

馨的圈子。阅读变得更容易，我们能更快地掌握要点，能在更短的时间内读到更多的内容，并且能更容易地发现模式，提高我们对它们的理解。而在这一过程中，我们增加了一套思维工具，这不仅对学术工作有帮助，而且对一般的思考和理解也有帮助。这就是为什么伯克希尔-哈撒韦公司副董事长查理-芒格将拥有广泛的这些工具并知道如何应用它们的人描述为具有世界智慧的人。

But this dynamic can only start if we ourselves deliberately decide to take on the task of reading and being selective about it, relying on nothing other than our own judgement of what is important and what is not. Textbooks or secondary literature in general cannot take this off our hands, and students who solely rely on them have no chance of becoming “worldly wise.” This is not far off from what philosopher Immanuel Kant described in his famous text about the Enlightenment: “Nonage [immaturity] is the inability to use one’s own understanding without another’s guidance. This nonage is self-imposed if its cause lies not in lack of understanding but in indecision and lack of courage to use one’s own mind without another’s guidance. Dare to know! (Sapere aude.) ‘Have the courage to use your own understanding,’ is therefore the motto of the Enlightenment.” (Kant 1784)

但是，只有当我们_自己刻意决定承担起阅读的任务，并对其进行选择性阅读，除了依靠自己对什么是重要的、什么是不重要的判断之外，这种动态才能开始。教科书或一般的二次文献都不能把这一切从我们手中夺走，单纯依靠教科书的学生是没有机会成为 "世俗的智者 "的。这与哲学家伊曼纽尔-康德在其关于启蒙运动的名篇中的描述不谋而合。"非年龄[不成熟]是指在没有他人指导的情况下 无法使用自己的理解。这种不成熟是自作自受的，如果它的原因不在于缺乏理解，而在于犹豫不决，没有勇气在没有他人指导的情况下使用自己的思想。敢于了解！ (Sapere aude. (Sapere aude.)'有勇气使用自己的理解'，因此是启蒙运动的座右铭。" (康德1784年)

I suggest taking this literally. The ability to use one's own understanding is a challenge, not a given. Luhmann stresses the importance of permanent notes in this regard:

我建议从字面上理解。能否运用自己的理解，是一个挑战，而不是一个必然。卢曼在这方面强调了永久笔记的重要性。

"The problem with reading academic texts seems to be that we need not the short-term memory, but the long-term memory to develop reference points for distinguishing the important things from the less important, the new information from the mere repeated. But it is of course impossible to remember everything. That would be rote learning. To put it differently: One has to read extremely selectively and extract widespread and connected references. One has to be able to follow recurrences. But how to learn it if guidance is impossible? [...] Probably the best method is to take notes — not excerpts, but condensed reformulated accounts of a text. Rewriting what was already written almost automatically trains one to shift the attention towards frames, patterns and categories in the observations, or the conditions/assumptions, which enable certain, but not other descriptions. It makes sense to always ask the question: What is not meant, what is excluded if a certain claim is made? If someone speaks of 'human rights:' What distinction is made? A distinction towards 'non-human rights?' 'Human duties?' Is it a cultural comparison or one with some historic people who didn't have the concept of human rights, but lived okay together anyway? Often, the text does not give an answer or a clear answer to this question. But then one has to resort to one's own imagination." (Luhmann 2000, 154f)

"阅读学术文章的问题似乎是，我们不需要短期记忆，而是需要长期记忆，以发展参考点，区分重要的东西和不重要的东西，新的信息和单纯的重复。但当然不可能记住所有的东西。那就是死记硬背。换一种说法。一个人必须极度有选择地阅读 并提取广泛而有联系的参考资料. 必须能按照复现的方法来学习。但是，如果指导是不可能的，如何学习呢? [.....]最

好的方法可能是做笔记--不是摘录，而是对文本的浓缩重写。重写已经写过的东西，几乎自动地训练人们把注意力转向观察中的框架、模式和类别，或条件/假设，这些条件使某些而不是其他描述成为可能。总是提出这样的问题是有意义的。如果提出某项主张，什么是没有意义的，什么是被排除在外的？如果有人说到'人权'：'要做什么区分？是对'非人权'的区分？""人的义务"？是文化上的比较，还是与一些历史上没有人权概念，但还是一起生活得还不错的人比较？对于这个问题，文本往往没有给出答案，也没有明确的答案。但人们就只能借助于自己的想象力"。(Luhmann 2000，154f)

The better you become in doing this, the quicker you can jot down notes, which are still helpful. Luhmann's notes are very condensed (Schmidt 2015). With practice comes the ability to find the right words to express something in the best possible way, which means in a simple, but not simplified way. Not only will the readers of your text appreciate your ability to explain something clearly, those you talk to will benefit from this ability as well, as it is not limited to writing. It spills over into speaking and thinking. It is proven that readers regard an author and an audience a speaker as more intelligent the more clear and to the point their expressions are (Oppenheimer 2006).

做得越好，你就能越快地记下笔记，这对你还是很有帮助的。Luhmann的笔记非常精炼（Schmidt 2015）。有了练习，就有能力找到合适的词语以最好的方式表达某件事情，也就是用简单但不简化的方式。不仅你的文本读者会欣赏你清楚解释某事的能力，那些与你交谈的人也会从这种能力中受益，因为它不仅限于写作。它还会波及到说话和思考。事实证明，读者认为一个作者和一个听众，一个演讲者，他们的表达越清晰、越有针对性，就越有智慧（Oppenheimer，2006）。

The ability to spot patterns, to question the frames used and detect the distinctions made by others, is the precondition to thinking critically and looking behind the assertions of a text or a talk. Being able to re-frame questions, assertions and information is even more important than having an extensive knowledge, because without this

ability, we wouldn't be able to put our knowledge to use. The good news is that these skills can be learned. But it requires deliberate practice (Ericsson, Krampe, and Tesch-Römer 1993; Anders Ericsson 2008). Taking smart notes is the deliberate practice of these skills. Mere reading, underlining sentences and hoping to remember the content is not.

发现模式、质疑所使用的框架和发现他人所做的区分的能力，是批判性思考和审视文本或谈话的断言背后的先决条件。能够对问题、论断和信息进行重新构架，甚至比拥有广泛的知识更重要，因为没有这种能力，我们就无法将知识用于实践。好消息是，这些技能是可以学习的。但这需要刻意的练习（Ericsson, Krampe, and Tesch-Römer 1993; Anders Ericsson 2008）。做智能笔记就是这些技能的刻意练习。单纯的阅读、在句子上划线并希望记住内容不是。

10.4 Learn to Read

10.4 学会阅读。

“If you can't say it clearly, you don't understand it yourself.” (John Searle)

"如果你说不清楚，你自己也不明白。" (John Searle)

Physicist and Nobel Prize winner Richard Feynman once said that he could only determine whether he understood something if he could give an introductory lecture on it. Reading with a pen in your hand is the small-scale equivalent of a lecture. Permanent notes, too, are directed towards an audience ignorant of the thoughts behind the text and unaware of the original context, only equipped with a general knowledge of the field. The only difference is that the audience here consists of our future selves, which will very soon have reached the same state of ignorance as someone who never had access to what we have written about. Of course, it would be helpful to involve other people at all stages of the writing process, because then we can see in their faces how well we have put

something or how convincing our arguments are, but that is rather impractical.

物理学家、诺贝尔奖获得者理查德-费曼曾经说过，只有当他能对某件事情进行介绍性演讲时，才能确定自己是否理解。用手中的笔阅读，小范围内相当于一次演讲。永久的笔记，也是面向对文本背后的思想一无所知，不知道原文背景的听众，只具备该领域的一般知识。唯一不同的是，这里的听众由我们未来的自己组成，他们很快就会和从未接触过我们所写的东西的人一样，达到无知的状态。当然，让其他人参与到写作过程的各个阶段会很有帮助，因为这样我们就可以从他们的脸上看到我们把一些东西写得有多好，或者我们的论点有多有说服力，但这是相当不切实际的。

Also, we shouldn't underestimate the advantages of writing. In oral presentations, we easily get away with unfounded claims. We can distract from argumentative gaps with confident gestures or drop a casual "you know what I mean" irrespective of whether we know what we meant. In writing, these manoeuvres are a little too obvious. It is easy to check a statement like: "But that is what I said!" The most important advantage of writing is that it helps us to confront ourselves when we do not understand something as well as we would like to believe.

另外，我们也不应该低估写作的优势。在口头陈述中，我们很容易摆脱毫无根据的说法。我们可以用自信的手势来分散论点的注意力，或者随便说一句 "你知道我的意思"，而不管我们是否知道我们的意思。在写作中，这些手法有点太明显了。要检查这样的声明很容易。"但那是我说的！" 写作最重要的好处是，当我们对某件事情的理解不如我们愿意相信的时候，它可以帮助我们正视自己。

"The principle is that you must not fool yourself, and you are the easiest person to fool," Feynman stressed in a speech to young scientists (Feynman 1985, 342). Reading, especially rereading, can easily fool us into believing we understand a text. Rereading is especially dangerous because of the mere- exposure effect: The moment we become familiar with something, we start believing we

also understand it. On top of that, we also tend to like it more (Bornstein 1989).

费曼在一次对青年科学家的演讲中强调："原则是你不能欺骗自己，你是最容易被欺骗的人。"（费曼1985，342）。阅读，尤其是重读，很容易使我们上当受骗，以为自己理解了一篇文章。重读是特别危险的，因为梅里-暴露效应。当我们熟悉某件事情的时候, 我们开始相信我们也理解了它. 除此之外，我们还倾向于更喜欢它（Bornstein 1989）。

While it is obvious that familiarity is not understanding, we have no chance of knowing whether we understand something or just believe we understand something until we test ourselves in some form. If we don't try to verify our understanding during our studies, we will happily enjoy the feeling of getting smarter and more knowledgeable while in reality staying as dumb as we were. This warm feeling disappears quickly when we try to explain what we read in our own words in writing. Suddenly, we see the problem. The attempt to rephrase an argument in our own words confronts us without mercy with all the gaps in our understanding. It certainly feels less good, but this struggle is the only chance we have to improve our understanding, to learn and move forward (cf. below). This, again, is deliberate practice. Now we are faced with a clear choice: We have to choose between feeling smarter or becoming smarter. And while writing down an idea feels like a detour, extra time spent, not writing it down is the real waste of time, as it renders most of what we read as ineffectual.

虽然很明显，熟悉并不是理解，但在我们以某种形式测试自己之前，我们没有机会知道自己是否理解某件事情，或者只是相信自己理解某件事情。如果我们在学习过程中不尝试验证自己的理解，我们就会愉快地享受着变得更聪明、更有知识的感觉，而实际上却一直和以前一样笨。当我们试图用自己的语言在书面上解释我们读到的东西时，这种温暖的感觉很快就消失了。突然间，我们_看到了问题所在。试图用我们自己的话重新表述一个论点，毫不留情地面对我们理解上的所有差距。这当然感觉不太好，但这种斗争是我们提高理解力、学习和前进的唯一机会（参见下文）。这又

是刻意的练习。现在，我们面临着一个明确的选择。我们必须在感觉更聪明或变得更聪明之间做出选择。而把一个想法写下来，感觉就像走了个弯路，多花了时间，但不写下来才是真正的浪费时间，因为它使我们读到的大部分内容变得无效。

Understanding is not just a precondition to learning something. To a certain degree, learning is understanding. And the mechanisms are not so different, either: We can only improve our learning if we test ourselves on our progress. Here, too, rereading or reviewing does not confront us with the things we haven't learned yet, although it makes us feel like we have. Only the actual attempt to retrieve information will clearly show us if we have learned something or not. The mere-exposure effect would fool us here, too: Seeing something we have seen before causes the same emotional reaction as if we had been able to retrieve the information from our memory. Rereading, therefore, makes us feel we have learned what we read: "I know that already!" Our brains are terrible teachers in this regard. We face here the same choice between methods that make us feel like we learned something and methods that truly do make us learn something.

理解不仅仅是学习某样东西的前提条件。在一定程度上，学习_就是理解_，而且机制也不太一样。只有当我们检验自己的进步时，我们才能改进我们的学习。在这里，重读或复习也不会让我们面对我们还没有学会的东西，尽管它让我们觉得自己已经学会了。只有实际尝试检索信息，才会清楚地告诉我们是否学到了什么。美好的暴露效应在这里也会欺骗我们。看到我们以前看过的东西 会引起同样的情绪反应 就像我们能够从记忆中找回信息一样 因此，重读会让我们觉得我们已经学会了我们读过的东西。" 我已经知道了！" 在这方面，我们的大脑是可怕的老师。在这里，我们面临着同样的选择：让我们觉得自己学到了什么的方法和真正让我们学到了什么的方法。

If you now think: "That's ridiculous. Who would want to read and pretend to learn just for the illusion of learning and understanding?" please look up the statistics: The majority of students chooses every

day not to test themselves in any way. Instead, they apply the very method research has shown again (Karpicke, Butler, and Roediger 2009) and again (Brown 2014, ch. 1) to be almost completely useless: rereading and underlining sentences for later rereading. And most of them choose that method, even if they are taught that they don't work. Consciously, we probably would all choose the same, but what really matters are the many small, implicit choices we have to make every day, and they are most often made unconsciously.

如果你现在觉得："太可笑了。谁会愿意为了学习和理解的假象而读书和假装学习呢？"请查一下统计数据。大多数学生每天都选择不以任何方式测试自己。相反，他们应用的正是研究已经再次（Karpicke, Butler, and Roediger 2009）和再次（Brown 2014, ch.1）表明几乎完全无用的方法：重读并在句子上划线，以便以后重读。而他们中的大多数人都会选择这种方法，即使他们被教导说这些方法没有用。在意识上，我们可能都会选择同样的方法，但真正重要的是我们每天要做的许多小的、隐性的选择，而这些选择多半是在无意识中做出的。

This is why choosing an external system that forces us to deliberate practice and confronts us as much as possible with our lack of understanding or not- yet-learned information is such a smart move. We only have to make the conscious choice once.

这就是为什么选择一个外在的系统，迫使我们刻意练习，并尽可能面对我们的不理解或尚未学会的信息，是如此明智之举。我们只需要做一次有意识的选择。

10.5 Learn by Reading

10.5 通过阅读来学习。

Learning itself requires deliberate practice, and I mean actual learning that helps us to increase our understanding of the world, not just the learning that makes us pass a test. And deliberate practice is demanding; it requires effort. Trying to skip this step would be like going to the gym and trying to work out with the least

effort possible. That just doesn't make sense, just like it wouldn't make sense to hire a coach to do the heavy lifting. A coach is not there to do the work, but to show us how to use our time and effort in the most effective way. What is self-evident in sports we are only starting to realise is true for learning as well. "The one who does the work does the learning," writes Doyle (2008, 63). It is hard to believe, but in education that is still a revolutionary idea.

学习本身就需要刻意练习，我指的是帮助我们增加对世界理解的实际学习，而不仅仅是让我们通过考试的学习。而刻意练习的要求很高，它需要努力。试图跳过这一步，就像去健身房，试图用最少的努力去锻炼一样。这样做是没有意义的，就像请一个教练来做重活是没有意义的一样。教练不是来做工作的，而是告诉我们如何以最有效的方式利用时间和精力。在运动中不言而喻的事情，我们才开始意识到，对于学习也是如此。多伊尔（2008，63）写道："做工作的人做学习"。这很难让人相信，但在教育中，这还是一个革命性的理念。

Learning requires effort, because we have to think to understand and we need to actively retrieve old knowledge to convince our brains to connect it with new ideas as cues. To understand how groundbreaking this idea is, it helps to remember how much effort teachers still put into the attempt to make learning easier for their students by prearranging information, sorting it into modules, categories and themes. By doing that, they achieve the opposite of what they intend to do. They make it harder for the student to learn because they set everything up for reviewing, taking away the opportunity to build meaningful connections and to make sense of something by translating it into one's own language. It is like fast food: It is neither nutritious nor very enjoyable, it is just convenient.

学习需要努力，因为我们必须思考才能理解，我们需要主动检索旧的知识，以说服我们的大脑将其与新的想法联系起来作为线索。为了理解这个想法有多突破性，我们可以回忆一下老师们还在付出多少努力，试图通过预先安排信息，将其分类为模块、类别和主题，让学生的学习变得更容易。通过这样做，他们达到了与他们意图相反的效果。他们使学生更难学

习，因为他们把所有的东西都设定为复习，剥夺了建立有意义的联系的机会，也剥夺了通过把它翻译成自己的语言来理解某些东西的机会。这就像快餐一样：它既没有营养，也不是很享受，只是_方便。

It would be surprising if teachers changed the topic in the middle of the lesson, moving on to the next chapter before anyone had the chance to really understand the first one, only to come back to the previous topic later. It would also be unexpected to test the students constantly, half of the time about things that weren't even mentioned yet. But as much as it would probably annoy the students, who are used to having their material presented in neat categories, it would force them to make sense of what they encounter — and that would make them really learn it.

如果教师在上课时中途改变话题，在大家还没来得及真正理解上一章的内容时就转入下一章，后来又回到上一章的话题，那就太出人意料了。如果不断地考查学生，半天都是一些还没有提到的东西，也会让人意想不到。不过，尽管这样做可能会让学生们很烦，因为他们已经习惯了把材料以整齐的类别呈现出来，但这样做会迫使他们把遇到的东西弄明白--这样才能让他们真正学会。

“Manipulations such as variation, spacing, introducing contextual interference, and using tests, rather than presentations, as learning events, all share the property that they appear during the learning process to impede learning, but they then often enhance learning as measured by post-training tests of retention and transfer. Conversely, manipulations such as keeping conditions constant and predictable and massing trials on a given task often appear to enhance the rate of learning during instruction or training, but then typically fail to support long-term retention and transfer” (Bjork, 2011, 8).

"变式、间隔、引入情境干扰，以及用测试而不是演示作为学习事件等操纵，都有一个共同的特性，即它们在学习过程中出现阻碍学习，但它们随后往往会增强学习，正如训练后的保持和转移测试所衡量的那样。相反，

诸如保持条件恒定和可预测，以及在某一任务上进行大量试验等操作，往往在教学或训练过程中出现增强学习速度，但随后通常无法支持长期的保持和转移"（Bjork，2011，8）。

When we try to answer a question before we know how to, we will later remember the answer better, even if our attempt failed (Arnold and McDermott 2013). If we put effort into the attempt of retrieving information, we are much more likely to remember it in the long run, even if we fail to retrieve it without help in the end (Roediger and Karpicke 2006). Even without any feedback, we will be better off if we try to remember something ourselves (Jang et al. 2012). The empirical data is pretty unambiguous, but these learning strategies do not necessarily feel right. Intuitively, most students resort to cramming, which is just another term for reading something again and again in a failed attempt to learn it (Dunlosky et al. 2013). And as much as rereading doesn't help with learning, it certainly doesn't help with understanding. Admittedly, cramming does get information into your head for a short while — usually long enough to stay in there to pass a test. But cramming won't help you learn. As Terry Doyle and Todd Zakrajsek put it: "If learning is your goal, cramming is an irrational act" (Doyle and Zakrajsek 2013).[29]

当我们在知道如何回答一个问题之前就尝试回答，即使我们的尝试失败了，我们以后也会更好地记住答案（Arnold和McDermott，2013）。如果我们在检索信息的尝试中付出努力，从长远来看，我们更有可能记住它，即使最后在没有帮助的情况下检索失败（Roediger和Karpicke，2006）。即使在没有任何反馈的情况下，如果我们自己尝试去记忆一些东西，也会有更好的效果（Jang等，2012）。经验数据非常明确，但这些学习策略并不一定是正确的感觉。直觉上，大多数学生会诉诸于补习，补习只是另一个术语，指的是在失败的情况下反复阅读某样东西（Dunlosky等人，2013）。而重读虽然对学习没有帮助，但对理解肯定没有帮助。诚然，补习确实能让信息短时间内进入你的脑海--通常足够长的时间留在里面，以便通过考试。但是，补习不会帮助你学习。正如Terry Doyle和Todd Zakrajsek所说的那样。"如果学习是你的目标，补习是一种非理性的行为"（Doyle和Zakrajsek 2013）。[[29]

Instead of reviewing a text, you could just as well play a round of ping-pong. In fact, chances are it would help you more because exercise helps to transfer information into long-term memory (cf. Ratey 2008). Plus, exercise reduces stress, which is good, because stress floods our brains with hormones that suppress learning processes (Baram et al. 2008).

与其复习课文，你还不如去打一圈乒乓球。事实上，这有可能会对你有更大的帮助，因为运动有助于将信息转移到长期记忆中（参见Ratey 2008）。另外，运动可以减少压力，这是很好的，因为压力会让我们的大脑中充斥着抑制学习过程的荷尔蒙（Baram等人，2008）。

In short: Pure re-viewing just doesn't make any sense, neither for understanding nor for learning. It is debatable if we even can call it learning.

简而言之：单纯的重看是没有任何意义的，无论是对理解还是对学习都是如此。我们甚至可以称之为学习，这一点值得商榷。

It is not surprising, therefore, that the best-researched and most successful learning method is elaboration. It is very similar to what we do when we take smart notes and combine them with others, which is the opposite of mere re- viewing (Stein et al. 1984) Elaboration means nothing other than really thinking about the meaning of what we read, how it could inform different questions and topics and how it could be combined with other knowledge. In fact, "Writing for Learning" is the name of an "elaboration method" (Gunel, Hand, and Prain 2007). But there is a caveat. Even though elaboration works verifiably well for deep understanding, it might not be the best choice if you just want to learn isolated encyclopaedic facts (Rivard 1994). But as long as you are not striving for a career as a quiz show candidate, why would you want that, anyway? The slip-box takes care of storing facts and information. Thinking and understanding is what it can't take off your shoulders, which is why it makes sense to focus on this part of the work. That it facilitates

learning as well is a nice side effect. Luhmann almost never read a text twice (Hagen 1997) and was still regarded as an impressive conversation partner who seemed to have all information ready to hand.[30]

因此，研究得最好、最成功的学习方法是阐述，这并不奇怪。它非常类似于我们做智能笔记并与他人结合起来的做法，这与单纯的再看是相反的（Stein等，1984）阐释的意思无非是指真正思考我们所读到的东西的意义，如何为不同的问题和主题提供信息，以及如何与其他知识结合。事实上，"为学习而写作 "是一种 "阐释法 "的名称（Gunel, Hand, and Prain 2007）。但是有一个注意事项。即使阐述法对于深入理解有很好的验证作用，但如果你只是想学习孤立的百科全书式的事实，它可能不是最好的选择（Rivard，1994）。但只要你不是为了成为问答节目的候选人而努力，你为什么要这样做呢？滑箱负责储存事实和信息。思考和理解是它无法从你的肩上卸下的，这就是为什么专注于这部分工作的原因。它还能促进学习，这是一个不错的副作用。卢曼几乎从不把一篇课文读两遍（哈根1997年），而且仍然被认为是一个令人印象深刻的对话伙伴，他似乎把所有的信息都准备好了。[30]

Working with the slip-box, therefore, doesn't mean storing information in there instead of in your head, i.e. not learning. On the contrary, it facilitates real, long-term learning. It just means not cramming isolated facts into your brain — something you probably wouldn't want to do anyway. The objection that it takes too much time to take notes and sort them into the slip-box is therefore short-sighted. Writing, taking notes and thinking about how ideas connect is exactly the kind of elaboration that is needed to learn. Not learning from what we read because we don't take the time to elaborate on it is the real waste of time.

因此，使用滑板箱工作并不意味着将信息储存在那里，而不是储存在你的脑海中，即不学习。相反，它能促进真正的、长期的学习。它只是意味着不要把孤立的事实塞进你的大脑--这是你可能无论如何都不想做的事情。因此，认为做笔记并将其整理到滑盖箱中需要花费太多时间的反对意见是短视的。写作、做笔记和思考想法如何联系起来，正是学习所需要的

阐述。因为我们没有花时间去阐述，而没有从阅读中学习到东西，才是真正的浪费时间。

There is a clear division of labour between the brain and the slip-box: The slip-box takes care of details and references and is a long-term memory resource that keeps information objectively unaltered. That allows the brain to focus on the gist, the deeper understanding and the bigger picture, and frees it up to be creative. Both the brain and the slip-box can focus on what they are best at.

大脑和滑箱之间有明确的分工。大脑和滑匣有明确的分工： 滑匣负责处理细节和参考资料，是一种长期的记忆资源，它能保持信息的客观性，不被改变。这使得大脑可以专注于要点、更深层次的理解和更大的画面，并释放出它的创造力。大脑和滑盖箱都可以专注于自己最擅长的事情。

11 Take Smart Notes

11 聪明地做笔记

The educational psychologist Kirsti Lonka compared the reading approach of unusually successful doctoral candidates and students with those who were much less successful. One difference stood out as critical: The ability to think beyond the given frames of a text (Lonka 2003, 155f).

教育心理学家Kirsti Lonka比较了异常成功的博士候选人和学生与那些不那么成功的人的阅读方法。其中一个关键的区别是：超越文本既定框架的思考能力（Lonka 2003，155f）。

Experienced academic readers usually read a text with questions in mind and try to relate it to other possible approaches, while inexperienced readers tend to adopt the question of a text and the

frames of the argument and take it as a given. What good readers can do is spot the limitations of a particular approach and see what is not mentioned in the text.

有经验的学术读者通常是带着问题去阅读文本，并试图将其与其他可能的方法联系起来，而没有经验的读者则倾向于采用文本的问题和论证的框架，并将其作为既定的内容。优秀的读者能做的是发现某种方法的局限性，看看文中有哪些_没有提到的地方。

Even more problematic than staying within the given frame of a text or an argument is the inability to interpret particular information in the text within the bigger frame or argument of the text. Even doctoral students sometimes just collect de-contextualised quotes from a text — probably the worst possible approach to research imaginable. This makes it almost impossible to understand the actual meaning of information. Without understanding information within its context, it is also impossible to go beyond it, to reframe it and to think about what it could mean for another question.

比停留在文本或论点的既定框架内更麻烦的是，无法在文本的大框架或论点中解释文本中的特定信息。即使是博士生有时也只是从文本中收集去语境化的引文--这可能是可以想象的最糟糕的研究方法。这使得我们几乎不可能理解信息的实际意义。如果不在语境中理解信息，也就不可能超越它，不可能重构它，不可能思考它对另一个问题可能意味着什么。

Jerome Bruner, a psychologist Lonka refers to, goes a step further and says that scientific thinking is plainly impossible if we can't manage to think beyond a given context and we only focus on the information as it is given to us (Bruner, 1973, quoted after ibid.) It is not surprising, therefore, that Lonka recommends what Luhmann recommends: Writing brief accounts on the main ideas of a text instead of collecting quotes. And she also stresses that it is no less important to do something with these ideas — to think hard about how they connect with other ideas from different contexts and could

inform questions that are not already the questions of the author of the respective text.

龙卡提到的心理学家杰罗姆–布鲁纳(Jerome Bruner)更进一步说，如果我们不能设法超越给定的语境进行思考，而只关注给我们的信息，那么科学思考显然是不可能的(布鲁纳，1973年，转引自同上之后。)因此，龙卡推荐卢曼的建议也就不足为奇了。写下对文本主要观点的简要描述，而不是收集引文。而且她还强调，用这些思想做一些事情也同样重要--认真思考它们如何与不同语境中的其他思想相联系，并且可以为那些还不是相应文本的作者的问题提供信息。

This is exactly what we do when we take the next step, in which we write and add permanent notes to the slip–box. We don't just play with ideas in our heads, but do something with them in a very concrete way: We think about what they mean for other lines of thoughts, then we write this explicitly on paper and connect them literally with the other notes.

这正是我们下一步要做的，我们要在滑板箱中写下并添加永久的注释。我们不只是在脑海中玩弄想法，而是以一种非常具体的方式对它们做些什么。我们思考它们对其他思路的意义 然后我们把这些明确地写在纸上 把它们和其他笔记联系在一起

11.1 Make a Career One Note at a Time

11.1一次一个音符成就事业。

The first time one faces the challenge of writing a long text, say a dissertation, it is pretty normal to feel intimidated by the prospective of filling a few hundred pages with well–conceived ideas, source–based research and correct references on every page. If you don't feel some kind of respect for this task, there is something wrong with you. On the other hand, most people feel that writing a page a day (and having a day a week off) is quite manageable, not realising that this would mean finishing a doctoral thesis within a year — something that does not happen very often in reality.

第一次面对写长篇文章的挑战，比如说一篇论文，面对要在几百页的文章中填满构思精巧的观点、基于源头的研究和每一页都要有正确的参考文献，感到恐惧是很正常的。如果你对这项任务不感到某种程度的尊重，那你就有问题了。另一方面，大多数人觉得每天写一页纸（每周休息一天）是很容易管理的，却不知道这意味着要在一年内完成一篇博士论文--这在现实中并不经常发生。

The technique of writing a certain amount every day was perfected by Anthony Trollope, one of the most popular and productive authors of the 19th century: He would start every morning at 5:30 a.m. with a cup of coffee and a clock in front of him. Then he would write at least 250 words every 15 minutes. This, he writes in his autobiography: “allowed me to produce over ten pages of an ordinary novel volume a day, and if kept up through ten months, would have given as its results three novels of three volumes each in the year” (Trollope, 2008, 272). And that, mind you, was before breakfast.

安东尼-特罗洛普（Anthony Trollope）完善了每天写一定量的技巧，他是19世纪最受欢迎和最有成效的作家之一：他每天早上5点半开始，面前放着一杯咖啡和一个时钟。然后，他会每15分钟至少写250字。他在自传中写道："这让我能够写出十多页的文章。"让我每天能写出超过10页的普通小说卷 如果能坚持10个月的话，一年就能写出三部三卷的小说" (Trollope, 2008, 272). 而这，要知道，这是_早餐之前。

Academic or nonfiction texts are not written like this because in addition to the writing, there is the reading, the research, the thinking and the tinkering with ideas. And they almost always take significantly more time than expected: If you ask academic or nonfiction writers, students or professors how much time they expect it would take them to finish a text, they systematically underestimate the time they need — even when they are asked to estimate the time under the worst-case scenario and if the real conditions turned out to be quite favourable (Kahneman 2013, 245ff). On top of that: half of all doctoral theses will stay unfinished

forever (Lonka, 2003, 113). Academic and nonfiction writing is not as predictable as a Trollope novel and the work it involves certainly can't be broken down to something like "one page a day."

学术或非小说类文本不是这样写的，因为除了写作，还有阅读、研究、思考和构思。而且它们所花费的时间几乎总是大大超过预期。如果你问学术或非小说作家、学生或教授，他们预计完成一篇文章需要多少时间，他们会系统性地低估所需的时间--即使要求他们在最坏的情况下估计时间，如果真实条件相当有利的话（Kahneman，2013，245ff）。最重要的是：一半的博士论文将永远停留在未完成的状态_（Lonka，2003，113）。学术和非虚构写作并不像特洛洛普小说那样可以预测，它所涉及的工作当然不能分解为 "每天一页 "这样的东西。

It does make sense to break down the work into manageable and measurable steps, but pages per day don't work that well as a unit when you also have to read, do research and think. But even though academic and nonfiction writing involve more of other types of work than fiction writing, Luhmann managed to beat Trollope in productivity if you count his articles as well as his books. Luhmann wrote 58 books and hundreds of articles, while Trollope wrote 47 novels plus 16 other books. Granted, it might have something to do with the fact that Luhmann did some work after breakfast as well. But the main reason is the slip-box, which compares to Trollope's technique as investing with compounded interest compares to a piggy-bank. Trollope is like a diligent saver who puts a little sum to the side every day, which adds up over time toward something impressive. Three dollars put aside each day (say, one takeout coffee) add up over the year to a small vacation ($1,000) and over a working life to a deposit on a flat as a permanent holiday retreat.[31] Putting notes into the slip- box, however, is like investing and reaping the rewards of compounded interest (which would in this example almost pay for the whole flat).[32]

将工作分解成可管理、可衡量的步骤确实很有意义，但当你还得阅读、做研究和思考时，每天的页数作为一个单位并不那么好用。但尽管学术和非

小说写作比小说写作涉及更多的其他类型的工作，但如果你把他的文章以及他的书计算在内，卢曼还是成功地在生产力上击败了特罗洛普。卢曼写了58本书和数百篇文章，而特罗洛普写了47本小说外加16本其他书籍。当然，这可能与卢曼在早餐后也做了一些工作有关。但最主要的原因是滑箱，把特罗洛普的技术比作复利投资比作猪储蓄。特罗洛普就像一个勤奋的储户，每天在旁边放一点钱，久而久之就会累积起来，朝着令人印象深刻的方向发展。每天放出三块钱（比如说，一杯外卖咖啡），一年下来，就会累积成一个小假期（1000美元），工作一辈子下来，就会累积成一个单位的存款，作为永久的度假疗养地。[[31]](part0000_split_023.html#_ftn31）然而，把钞票放进滑箱，就像投资一样，可以获得复利的回报（在这个例子中，几乎可以支付整个单位的费用）。[32]

And likewise, the sum of the slip-box content is worth much more than the sum of the notes. More notes mean more possible connections, more ideas, more synergy between different projects and therefore a much higher degree of productivity. Luhmann's slip-box contains about 90,000 notes, which sounds like an incredibly large number. But it only means that he wrote six notes a day from the day he started to work with his slip-box until he died.

同样，滑箱内容的总和也比笔记的总和价值高得多。更多的笔记意味着更多可能的联系、更多的想法、更多不同项目之间的协同作用，从而大大提高了工作效率。Luhmann的便签箱里有大约9万张笔记，听起来是一个非常庞大的数字。但这只意味着他从开始使用他的便笺盒工作的那天起，直到他去世，每天都要写6张笔记。

If you, by any chance, don't have the ambition to compete with him in terms of books per year, you could settle for three notes a day and still build up a significant critical mass of ideas in a very reasonable time. And you could settle for less than one book every twelve months. In contrast to manuscript pages per day, a certain number of notes a day is a reasonable goal for academic writing. And that is because taking a note and sorting it into the slip-box can be done in one go, while writing a manuscript page could involve weeks and months of preparation involving other tasks as

well. You could therefore measure your daily productivity by the number of notes written.

如果你没有雄心壮志与他竞争每年的书籍，你可以满足于每天写三本笔记，并且仍然可以在非常合理的时间内建立起大量的思想。而且你可以满足于每十二个月不到一本书。与每天的稿件页数相比，每天做一定数量的笔记是学术写作的合理目标。这是因为记笔记并将其整理到便签箱中可以一次完成，而写一页稿子可能需要几个星期和几个月的准备，还涉及到其他任务。因此，你可以通过写笔记的数量来衡量你每天的工作效率。

11.2 Think Outside the Brain

11.2 跳出大脑思考。

Taking literature notes is a form of deliberate practice as it gives us feedback on our understanding or lack of it, while the effort to put into our own words the gist of something is at the same time the best approach to understanding what we read.

做文学笔记是一种刻意练习的形式，因为它可以反馈我们的理解或不理解，而努力用自己的语言来表达一些东西的要点，同时也是理解我们阅读内容的最好方法。

Taking permanent notes of our own thoughts is a form of self-testing as well: do they still make sense in writing? Are we even able to get the thought on paper? Do we have the references, facts and supporting sources at hand? And at the same time, writing it is the best way to get our thoughts in order. Writing here, too, is not copying, but translating (from one context and from one medium into another). No written piece is ever a copy of a thought in our mind.

把自己的想法永久地记录下来，也是一种自我检验的方式：这些想法写出来还有意义吗？我们甚至能够把思想写在纸上吗？我们手头是否有参考文献、事实和佐证来源？而同时，写出来也是让我们的思路井然有序的最好

方法。这里的写作，也不是复制，而是翻译（从一种语境，从一种媒介到另一种媒介）。任何书面作品都不可能是我们脑海中思想的复制。

When we take permanent notes, it is much more a form of thinking within the medium of writing and in dialogue with the already existing notes within the slip-box than a protocol of preconceived ideas. Any thought of a certain complexity requires writing. Coherent arguments require the language to be fixed, and only if something is written down is it fixed enough to be discussed independently from the author. The brain alone is too eager to make us feel good — even if it is by politely ignoring inconsistencies in our thinking. Only in the written form can an argument be looked at with a certain distance — literally. We need this distance to think about an argument — otherwise the argument itself would occupy the very mental resources we need for scrutinizing it.

当我们做永久的笔记时，与其说是预设的协议，不如说是在写作的媒介内，与滑箱内已有的笔记对话的一种思维形式。任何具有一定复杂性的思想都需要写作。连贯的论证需要语言的固定，只有当某件事情被写下来，它才有足够的固定性，才能脱离作者独立讨论。仅仅是大脑太渴望让我们感觉良好--哪怕是礼貌地忽略我们思维中的不一致。只有在书面形式下，才能以一定的距离--从字面上看--来看待一个论点。我们需要这种距离来思考_一个论点--否则论点本身就会占据我们审视论点所需要的精神资源。

As we write notes with an eye towards existing notes, we take more into account than the information that is already available in our internal memory. That is extremely important, because the internal memory retrieves information not in a rational or logical way, but according to psycho-logical rules. The brain also doesn't store information neurally and objectively. We reinvent and rewrite our memory every time we try to retrieve information. The brain works with rules of thumb and makes things look as if they fit, even if they don't. It remembers events that never happened, connects unrelated episodes to convincing narratives and completes incomplete images.

It cannot help but see patterns and meaning everywhere, even in the most random things (cf. Byrne, 2008). The brain, as Kahneman writes, is “a machine for jumping to conclusions” (Kahneman, 2013, 79). And a machine that is designed for jumping to conclusions is not the kind of machine you want to rely on when it comes to facts and rationality — at least, you would want to counterbalance it. Luhmann states as clearly as possible: it is not possible to think systematically without writing (Luhmann 1992, 53). Most people still think about thinking as a purely internal process, and believe that the only function of the pen is to put finished thoughts on paper. Richard Feynman once had a visitor in his office, a historian who wanted to interview him. When he spotted Feynman’s notebooks, he said how delighted he was to see such “wonderful records of Feynman’s thinking.”

当我们在写笔记时，着眼于现有的笔记，我们考虑到的更多的是我们内部记忆中已有的信息。这一点极为重要，因为内部记忆检索信息的方式不是理性的或逻辑的，而是按照心理逻辑规则进行的。大脑也不是神经性地、客观地存储信息。我们每次试图检索信息时，都会重新发明和重写记忆。大脑用经验法则工作，让事情看起来好像符合，即使它们不符合。它记住从未发生过的事件，将不相关的情节连接成令人信服的叙述，并完成不完整的图像。它不能不看到无处不在的模式和意义，即使在最随机的事物中也是如此（参见Byrne，2008）。正如卡尼曼所写的那样，大脑是 "一台用于跳跃结论的机器"（Kahneman，2013，79）。而一台为跳到结论而设计的机器，在涉及事实和理性的时候，并不是你想要依赖的机器--至少，你会想要反制它。卢曼尽可能明确地指出：不写作就不可能进行系统的思考（Luhmann 1992，53）。大多数人仍然认为思考是一个纯粹的内部过程，并认为笔的唯一功能是把完成的思想写在纸上。理查德-费曼的办公室曾经有一位访客，是一位历史学家，他想采访他。当他发现费曼的笔记本时，他说看到这样 "费曼思维的精彩记录"，他是多么高兴。

“No, no!” Feynman protested. “They aren’t a record of my thinking process. They are my thinking process. I actually did the work on the paper.”

"不，不！" 费曼抗议道。"它们不是我思维过程的记录。它们是我的思维过程。实际上是我在论文上做的工作。"

“Well,” the historian said, “the work was done in your head, but the record of it is still here.”

"好吧，"历史学家说，"工作是在你的脑子里完成的，但它的记录还在这里。"

“No, it’s not a record, not really. It’s working. You have to work on paper, and this is the paper.”[33]

"不，这不是记录，不是真的。它在工作。你必须在纸上工作，这就是纸。"[33]

This, obviously, was a very important distinction to Feynman, much more than just a linguistic difference — and for a good reason: It is the distinction that makes all the difference when it comes to thinking.

显然，这对费曼来说是一个非常重要的区别，远不止是语言上的区别--而且有一个很好的理由：当涉及到思考时，正是这种区别使所有的区别变得不同。

Philosophers, neuroscientists, educators and psychologists like to disagree in many different aspects on how the brain works. But they no longer disagree when it comes to the need for external scaffolding. Almost all agree nowadays that real thinking requires some kind of externalization, especially in the form of writing. “Notes on paper, or on a computer screen [...] do not make contemporary physics or other kinds of intellectual endeavour easier, they make it possible” is one of the key takeaways in a contemporary handbook of neuroscientists (Levy 2011, 290) Concluding the discussions in this book, Levy writes: “In any case, no matter how internal processes are implemented, insofar as thinkers are genuinely concerned with what enables human beings

to perform the spectacular intellectual feats exhibited in science and other areas of systematic enquiry, as well as in the arts, they need to understand the extent to which the mind is reliant upon external scaffolding.” (Ibid.) In our system, the scaffolding is done explicitly by connecting the thoughts within the external memory of the slip-box. Luhmann writes: “Somehow one has to mark differences, keep track of distinctions, either explicitly or implicitly in concepts,” because only if the connections are somehow fixed externally can they function as models or theories to give meaning and continuity for further thinking (Luhmann, 1992, 53).

哲学家、神经科学家、教育家和心理学家喜欢在许多不同的方面对大脑的工作方式产生分歧。但是，当涉及到外部脚手架的必要性时，他们不再有分歧。现在几乎所有的人都同意，真正的思考需要某种外在化，特别是以写作的形式。"纸上的笔记，或电脑屏幕上的笔记[...]。]并没有使当代物理学或其他种类的智力努力变得更容易，而是使之成为可能。"这是当代神经科学家手册中的一个重要观点（Levy，2011，290）在总结本书的讨论时，Levy写道："在任何情况下，无论内部过程是如何实施的，只要思想家们真正关心的是什么使人类能够在科学和其他系统性探究领域以及艺术中表现出壮观的智力壮举，他们就需要了解思想在多大程度上依赖于外部支架。 ”(同上。)在我们的系统中，脚手架是通过在滑箱的外部记忆中连接思想来明确完成的。卢曼写道："人们必须以某种方式标记差异，跟踪区别，无论是明确的还是隐含在概念中的。"因为只有当这些联系以某种方式固定在外部时，它们才能作为模型或理论发挥作用，为进一步的思考赋予意义和连续性（卢曼，1992，53）。

A common way to embed an idea into the context of the slip-box is by writing out the reasons of its importance for your own lines of thought. For example, I recently read the book “Scarcity: Why Having Too Little Means So Much” (2013) by Mullainathan and Shafir. They investigate how the experience of scarcity has cognitive effects and causes changes in decision-making processes. They help the reader understand why people with almost no time or money sometimes do things that don’t seem to make any sense to outside observers. People facing deadlines sometimes switch

frantically between all kinds of tasks. People with little money sometimes spend it on seeming luxuries like take-away food. From the outside, it would make more sense to do one thing at a time, or buy food in bulk and cook for yourself. The book is interesting, because the authors don't question this behavior rhetorically or even in a judgemental way, but investigate it as a universal human phenomenon.

将一个概念嵌入到滑箱的语境中，一个常见的方法是写出它对自己的思路的重要性的原因。例如，我最近读了《稀缺。Why Having Too Little Means So Much》（2013），作者是Mullainathan和Shafir。他们研究了匮乏的体验如何产生认知效应，并导致决策过程的变化。他们帮助读者理解为什么几乎没有时间或金钱的人有时会做一些在外界观察者看来毫无意义的事情。面对最后期限的人有时会在各种任务之间疯狂切换。钱少的人有时会把钱花在外卖等看似奢侈的事情上。从外界看来，一次只做一件事，或者大量购买食物，自己做饭，会更有意义。这本书很有意思，因为作者并没有对这种行为进行反问甚至是评判，而是把它作为一种普遍的人类现象进行研究。

I took some literature notes collecting reasons how and why humans act so very differently when they experience scarcity. This was step one, done with an eye towards the argument of the book. I had questions in mind like: Is this convincing? What methods do they use? Which of the references are familiar?

我做了一些文献笔记，收集人类在经历匮乏时如何以及为什么会有如此截然不同的行为的原因。这是第一步，是针对书中的论点来做的。我心里有一些问题，比如 这有说服力吗？他们用的是什么方法？哪些参考文献是熟悉的?

But the first question I asked myself when it came to writing the first permanent note for the slip-box was: What does this all mean for my own research and the questions I think about in my slip-box? This is just another way of asking: Why did the aspects I wrote down catch my interest?

但是，当我为滑板箱写下第一张永久说明的时候，我问自己的第一个问题是。这对我自己的研究和我在信箱里思考的问题意味着什么？这只是另一种问法。为什么我写下的内容能引起我的兴趣?

If I were a psychologist, this book would interest me for completely different reasons than if I were a politician or a debt adviser, or if I had bought it out of personal interest. As someone with a sociological perspective on political questions and an interest in the project of a theory of society, my first note reads plainly: “Any comprehensive analysis of social inequality must include the cognitive effects of scarcity. Cf. Mullainathan and Shafir 2013.” This immediately triggers further questions, which I can discuss on following notes, starting with: “Why?”

如果我是一个心理学家，这本书引起我的兴趣的原因与我是一个政治家或债务顾问，或者是我出于个人兴趣而购买的原因完全不同。作为一个从社会学角度看待政治问题的人，以及对社会理论项目感兴趣的人，我的第一条说明写得很清楚。"任何对社会不平等的综合分析 都必须包括对匮乏的认知效应" "Cf. Mullainathan和Mullainathan 参见Mullainathan和Shafir 2013"。这立即引发了进一步的问题，我可以在下面的笔记中讨论，首先是。"为什么？ "

Now, I already have two notes in my slip-box, based on the literature notes I took while reading the book, but written along the lines of my own thinking. One note states the relevance of the book for my own thinking and one explains my idea in more detail. Here I could draw from my literature notes as a source of valuable facts and insight. Even though the answers to the question of why scarcity is relevant to the study of social inequality are all in the book, they are not just there to be copied. They need to be made explicit. That means to think about how the insight into cognitive effects of scarcity affects the analysis of social inequality.

现在，我的便签箱里已经有了两份笔记，基于我在阅读本书时的文献笔记，但是是按照自己的思路写的。一张纸条写明了这本书与我自己思考的

关联性，一张纸条更详细地解释了我的想法。在这里，我可以从我的文献笔记中汲取宝贵的事实和见解。尽管关于为什么稀缺性与社会不平等研究相关的问题的答案都在书中，但它们并不只是在那里被复制。它们需要被明确化。这意味着要_思考对稀缺性认知效应的洞察如何影响对社会不平等的分析。

While I am writing these notes, it becomes obvious that the answer to the question “why” has already triggered more follow-up questions, like: Isn’t this already discussed in theories of social inequality? If yes: Who discussed it? If not: Why not? And where do I turn to, to find answers to these questions? Correct: The first choice for further inquiry is the slip-box. Maybe there is already something on social inequality that helps me to answer these questions, or at least an indication of where to look.

当我在写这些笔记的时候，很明显，对 "为什么 "这个问题的回答已经引发了更多的后续问题，比如。这在社会不平等的理论中不是已经讨论过了吗？如果是：谁讨论的？如果没有：是谁讨论的？为什么没有？我又该到哪里，去寻找这些问题的答案呢？正确：进一步探究的首选是滑箱。也许已经有一些关于社会不平等的东西可以帮助我回答这些问题，或者至少说明了从哪里找。

By skimming through the slip-box, I might discover that these ideas could also be helpful for another topic I haven’t thought about. One example is the question of personal responsibility, which is discussed on the example of obesity and the influence of hormones as a sub-topic to a philosophical discussion on free will. None of it needs to be discussed right away, especially as most of these ideas would require more research and reading. But there is also no reason not to write down these possible connections and come back to them later, if my research points me back to them. The more notes the slip-box contains, the more interesting and prolific this step will become and the more research questions will be triggered.

通过浏览滑箱，我可能会发现，这些观点对另一个我没有想到的话题也有帮助。其中一个例子是个人责任的问题，以肥胖和激素的影响为例，作为自由意志哲学讨论的一个子题进行讨论。这些都不需要马上讨论，尤其是这些观点大多需要更多的研究和阅读。但也没有理由不把这些可能的联系写下来，以后如果我的研究又指出来，再来讨论它们。便条箱里的笔记越多，这个步骤就越有趣，越多产，引发的研究问题就越多。

Just by writing down these questions and making possible connections explicit in writing are the concepts and theories being investigated. Their limitations become as visible as their particular angle on a problem. By explicitly writing down how something connects or leads to something else, we force ourselves to clarify and distinguish ideas from each other.

只要把这些问题写下来，并把可能的联系以书面形式明确下来，就是正在研究的概念和理论。它们的局限性就会变得和它们对问题的特殊角度一样明显。通过明确地写下某件事情是如何联系或导致其他事情的，我们就会强迫自己澄清和区分彼此的想法。

11.3 Learn by not Trying

11.3 学而不试。

“Selection is the very keel on which our mental ship is built. And in this case of memory its utility is obvious. If we remembered everything, we should on most occasions be as ill off as if we remembered nothing. It would take as long for us to recall a space of time as it took the original time to elapse, and we should never get ahead with our thinking.” (William James 1890, 680).

"选择是我们精神之船的龙骨。在记忆这个问题上，它的作用是显而易见的。如果我们记住了所有的东西，我们在大多数场合应该和什么都不记得一样。我们回忆一个时间空间所需要的时间，将和原来的时间经过的时间一样长，我们应该永远不会在思维上取得进步。" 威廉-詹姆斯1890年，680）。

We have seen in the first step that elaboration through taking smart literature notes increases the likelihood that we will remember what we read in the long term. But this was only the first step. Transferring these ideas into the network of our own thoughts, our latticework of theories, concepts and mental models in the slip-box brings our thinking to the next level. Now we elaborate these ideas within different contexts and connect them with other ideas in a durable fashion. The literature notes are going to be archived, which means the ideas would be lost in the reference system if we didn't do something with them. That is why we transfer them into our external memory, the slip-box, with which we have an ongoing dialogue and where they can become part of our active set of ideas.

我们在第一步中已经看到，通过做聪明的文献笔记来进行_阐述，会增加我们长期记住所读内容的可能性。但这只是第一步。将这些想法转移到我们自己的思想网络中，我们在滑箱中的理论、概念和心理模型的网格，将我们的思维带入下一个层次。现在，我们在不同的语境中阐述这些思想，并将它们与其他思想持久地联系起来。文献笔记将被存档，这意味着如果我们不对它们做一些事情，这些想法将在参考系统中消失。这就是为什么我们要把它们转移到我们的外部记忆中，也就是滑箱中，我们与滑箱进行持续的对话，在那里它们可以成为我们一套活跃的想法的一部分。

Transferring ideas into the external memory also allows us to forget them. And even though it sounds paradoxical, forgetting actually facilitates long-term learning. It is important to understand why, because there are still many students who shy away from using an external memory. They fear that they would have to choose between remembering things in their heads (which wouldn't require an external memory) or in the external memory (which then would be forgotten in the internal memory). That this is a false choice becomes obvious as soon as we understand how our memory truly works.

将想法转移到外部记忆中，也使我们能够忘记它们。尽管这听起来很矛盾，但遗忘实际上有利于长期学习。理解其中的原因很重要，因为仍有很

多学生对使用外部记忆望而却步。他们担心，他们将不得不在脑海中的记忆（这就不需要外部记忆了）或外部记忆中的东西（然后在内部记忆中被遗忘）之间做出选择。只要我们了解了我们的记忆真正的工作原理，这就是一个错误的选择，就会变得很明显。

To be able to remember everything and not having to resort to any external memory sounds great initially. But you might think differently if you are familiar with the story of a man who was really able to remember almost everything. The reporter Solomon Shereshevsky (Lurija 1987) is one of the most famous figures in the history of psychology. When his supervisor saw that he didn't take any notes during their meetings, he first doubted Shereshevsky's dedication to the job, but shortly after, it was rather his own sanity that he doubted.

能够记住一切，不用借助任何外在的记忆，最初听起来很不错。但如果你熟悉一个人的故事，你可能会有不同的想法，他真的能够记住几乎所有的事情。记者所罗门-谢列舍夫斯基（Lurija 1987）是心理学史上最著名的人物之一。当他的上司看到他在他们开会时没有做任何笔记时，他首先怀疑谢列舍夫斯基对工作的敬业精神，但不久之后，他怀疑的反而是自己的理智。

When he confronted Shereshevsky with what seemed to him like lazy behaviour, Shereshevsky started to recount every single word that was spoken during the meeting and continued to recount verbatim all the meetings they had ever had. His colleagues were astonished, but the person most astonished was Shereshevsky himself. It was the first time he realised that everyone else seemed to have forgotten almost everything. Even those who had taken notes couldn't remember even a fraction of what seemed normal for him.

当他用在他看来是偷懒的行为来质问谢列舍夫斯基时，谢列舍夫斯基开始回忆起会议中的每一句话，并继续逐字逐句地回忆他们曾经开过的所有会议。他的同事们都很吃惊，但最吃惊的是谢列舍夫斯基自己。他第一次意

识到，其他人似乎几乎都忘了一切。即使是那些做了笔记的人，也记不起哪怕一小部分对他来说似乎很正常的东西。

Aleksandr Romanovich Luria, the psychologist who subsequently tested him in all conceivable ways, couldn't find any of the usual restrictions people normally have in their memories. But it also became clear that this advantage came at a huge cost: It wasn't just that Shereshevsky was able to remember so much, he had trouble forgetting anything. The important things got lost under a pile of irrelevant details that involuntarily came to his mind. Although he was very good at remembering facts, Shereshevsky was almost incapable of getting the gist of something, the concepts behind the particulars and distinguishing the relevant facts from minor details. He had great trouble relating to literature or poetry. He could repeat a novel word by word, but the greater meaning would be lost on him. While Romeo and Juliet is for most of us a story of love and tragedy, for him it would be the story of "Two households, both alike in dignity, In fair Verona where we lay our scene, From ancient grudge break to new mutiny, Where civil blood makes civil hands unclean..." It should be obvious that for academic thinking and writing, the gift of being able to remember everything is a serious liability.

亚历山大-罗曼诺维奇-卢里亚，这位心理学家后来用各种可以想象的方法对他进行了测试，却找不到人们通常在记忆中的任何限制。但也很明显，这种优势是以巨大的代价换来的：不仅仅是谢列舍夫斯基能够记住这么多东西，他还难以忘记任何东西。重要的东西在一堆不相关的细节下，不由自主地浮现在他的脑海里，就会丢失。虽然他很善于记忆事实，但谢列舍夫斯基几乎无法掌握某件事情的要点，无法掌握细节背后的概念，也无法将相关事实与次要细节区分开来。他在与文学或诗歌的关系上有很大的困难。他可以一个字一个字地重复一篇小说，但更大的意义会被他遗忘。虽然《罗密欧与朱丽叶》对我们大多数人来说是一个关于爱情和悲剧的故事，但对他来说，这将是一个关于 "两户人家，都有同样的尊严，在美丽的维罗纳，我们在那里摆放着我们的场景，从古老的怨恨破裂到新的

叛变，在那里，平民的血使平民的手不干净..... "的故事。应该很明显，对于学术思想和写作来说，能记住一切的天赋是一种严重的负担。

The science of learning is still undecided on the question of whether we all share Shereshevsky's ability to memorise virtually everything we ever have encountered, but are only better at suppressing it. After all, sometimes we suddenly remember scenes from the past in great detail, triggered by a cue like the scent of a madeleine in Proust's recherche. These moments of involuntary memory might be like small cracks in the mental barrier through which we can catch a glimpse of all the memories we have collected over our lifetimes, but might never again have access to.

对于我们是否都和谢列舍夫斯基一样，能够记住几乎所有我们曾经遇到过的事情，只是更善于压制而已，这个问题，学习科学至今没有定论。毕竟，有时我们会突然想起过去的场景，非常详细，这是由普鲁斯特的rechitecture中的madeleine的香味等线索引发的。这些不由自主的记忆时刻可能就像心理屏障上的小裂缝，我们可以通过它瞥见我们一生中收集的所有记忆，但可能永远不会再有机会获得。

Forgetting, then, would not be the loss of a memory, but the erection of a mental barrier between the conscious mind and our long-term memory. Psychologists call this mechanism active inhibition (cf. MacLeod, 2007). It is easy to understand what it is good for: Without a very thorough filter, our brains would constantly be flooded by memories, making it impossible to focus on anything in our surroundings. That is what Shereshevsky struggled with in his life: There were moment where he tried to buy an ice cream, but some random word of the vendor triggered such an enormous amount of associations and memories that he would have to leave the shop, so overwhelming was this experience.

那么，遗忘就不是记忆的丧失，而是在意识与我们的长期记忆之间竖起了一道心理屏障。心理学家称这种机制为主动抑制（参见MacLeod，2007）。这很容易理解它的好处。如果没有一个非常彻底的过滤器， 我

们的大脑会不断地被记忆所淹没， 使其无法集中在我们周围的任何东西上。这就是谢列舍夫斯基在生活中的苦恼。有的时候，他想买一个冰激凌， 但一些小贩随意的话语 触发了大量的联想和记忆 他将不得不离开商店， 如此压倒性的经验。

We are very dependent on a subconscious mechanism that reliably inhibits almost every memory every moment except the very, very few that are truly helpful in a situation. Unfortunately, we cannot just consciously pluck from our memory what we need like from a folder in an archive. That would require the memory we can choose from to be already in our conscious mind, which would render the mechanism of remembering redundant. Remembering is the very mechanism to bring a memory back into our conscious mind. Therefore, Shereshevsky might not have had an ability most of us do not possess, but lacked an ability we all possess: The ability to forget systematically — to inhibit most irrelevant information from being remembered.

我们非常依赖一种潜意识机制，这种机制每时每刻都会可靠地抑制几乎所有的记忆，除了极少数真正对情境有帮助的记忆。不幸的是，我们不可能只是有意识地从记忆中像从档案馆的文件夹中拔出我们需要的东西。那就需要我们能从中选择的记忆已经在我们的意识中，这将使记忆的机制变得多余。记忆正是把记忆带回我们意识中的机制。因此，谢列舍夫斯基可能并不具备我们大多数人所不具备的能力，而是_缺乏我们都具备的能力。系统性遗忘的能力 – 抑制大多数不相关的信息被记住。

Shereshevsky was still capable of inhibiting information, but even being much less fine-tuned can have serious consequences. Being too often overwhelmed by memories, associations and synesthetic experiences made it difficult for him to stay in a job and enjoy many of the things we highly value. Above all, it made it almost impossible for him to think in abstract terms.

谢列舍夫斯基仍然能够抑制信息，但即使是少得多的微调，也会产生严重的后果。由于太过频繁地被记忆、联想和同感经验所淹没，使得他很难在

工作中坚持下去，也很难享受许多我们高度重视的东西。最重要的是，这让他几乎无法进行抽象的思考。

Robert and Elizabeth Ligon Bjork from the University of California suggest distinguishing between two different measurements when it comes to memory: Storage strength and retrieval strength (Bjork 2011). They speculate that storage strength, the ability to store memories, only becomes greater over one's lifetime. We add more and more information to our long-term memory. Just by looking at the physical capacity of our brains, we can see that we could indeed probably store a lifetime and a bit of detailed experiences in it (Carey 2014, 42).

来自加州大学的Robert和Elizabeth Ligon Bjork建议在记忆方面区分两种不同的测量方法。储存强度和检索强度（Bjork 2011）。他们推测，存储强度，即存储记忆的能力，只会在人的一生中变得更大。我们会在长期记忆中添加越来越多的信息。只要看看我们大脑的物理容量，我们就可以看到，我们确实可能可以把一生和一点详细的经历储存在里面（Carey 2014，42）。

It is difficult, if not impossible, to verify this claim, but it does make sense to shift the attention from storage strength to retrieval strength. Learning would be not so much about saving information, like on a hard disk, but about building connections and bridges between pieces of information to circumvent the inhibition mechanism in the right moment. It is about making sure that the right "cues" trigger the right memory, about how we can think strategically to remember the most useful information when we need it.

要验证这个说法是很困难的，甚至是不可能的，但把注意力从存储强度转移到检索强度上确实是有意义的。学习将不是像保存在硬盘上那样保存信息，而是在信息碎片之间建立连接和桥梁，在合适的时刻规避抑制机制。它是关于确保正确的 "线索 "触发正确的记忆，关于我们如何在需要的时候，通过战略思考来记住最有用的信息。

This is far from self-evident. If we look at the current state of education, especially the learning strategies most students employ, we see that the vast majority of all learning still aims to improve “storage strength,” even though it cannot be improved. It is still mostly about remembering isolated facts and not so much about building connections. This is what learning psychologists have rightfully given the derogative term “cramming:” the attempt to reinforce and solidify information in the brain by repetition. It is basically hammering facts into the brain as if they were carvings on an ancient stone tablet. Using fancy words and describing it as a “strengthening of the connections between neurons” does not change the fact that this attempt is futile.

这一点远非不言而喻。如果我们看看目前的教育现状，尤其是大多数学生所采用的学习策略，就会发现，绝大多数的学习仍然是以提高 "存储强度 "为目的，尽管它无法提高。它主要还是为了记住孤立的事实，而不是为了建立联系。这也是学习心理学家们理所当然地赋予 "补习 "这个贬义词的原因：试图通过重复来强化和巩固大脑中的信息。它基本上是把事实敲入大脑，就像在古老的石碑上刻字一样。使用花哨的词语，并将其描述为 "加强神经元之间的联系"，并不能改变这样的事实：这种尝试是徒劳的。

If we instead focus on “retrieval strength,” we instantly start to think strategically about what kind of cues should trigger the retrieval of a memory. There are no natural cues: Every piece of information can become the trigger for another piece of information. These can be associations like the scent of a sweet, as the madeleine triggered childhood memories for Proust, but this kind of flashback is called “involuntary memory” for a reason: we can’t retrieve it on purpose. Then there are the accidental cues that become attached to information when we learn something in a particular environment. It is, for example, easier to remember something we have learned in school if we are tested for it in the same room with the same noise in the background (Bjork 2011, 14). Likewise, sometimes it is difficult

to remember something from school when we are not sitting in the classroom where we learned it.

如果我们转而专注于 "检索强度"，我们马上就会开始战略性地思考应该用什么样的线索来触发记忆的检索。没有天然的线索。每一个信息都可以成为另一个信息的触发器. 这些可以是联想，比如甜食的香味，就像玛德琳触发了普鲁斯特的童年记忆，但这种回想被称为 "非自愿记忆 "是有原因的：我们无法刻意去检索它。还有当我们在特定的环境中学习某样东西时，偶然的提示会成为信息的附庸。例如，如果我们在同一间背景噪音相同的房间里接受测试，就会更容易记住我们在学校里学过的东西（Bjork 2011，14）。同样，有时候，当我们不坐在我们学过的教室里时，很难记住学校里学过的东西。

Obviously, we don't want to have to rely on cues in the environment. This is not only impractical, but highly misleading: If we test ourselves repeatedly in the same context and environment in which we have learned something, it would make us overconfident in terms of learning success, because we would not be able to discount the environmental cues that probably won't exist in the context in which we want to remember what we learned.

显然，我们不希望必须依赖环境中的提示。这不仅不切实际，而且有很大的误导性。如果我们在同样的背景和环境中反复测试自己，在那里我们学到了一些东西，它会使我们对学习的成功过于自信，因为我们无法忽视环境线索，而这些线索很可能不会存在于我们想要记住我们所学的东西的环境中。

What does help for true, useful learning is to connect a piece of information to as many meaningful contexts as possible, which is what we do when we connect our notes in the slip-box with other notes. Making these connections deliberately means building up a self-supporting network of interconnected ideas and facts that work reciprocally as cues for each other.

对真正的、有用的学习确实有帮助的是把一条信息与尽可能多的_有意义的_情境联系起来，这就是我们把我们在滑板箱里的笔记与其他笔记联系起来的做法。刻意地建立这些联系意味着建立一个由相互联系的思想和事实组成的自我支持网络，这些思想和事实相互作用，互为线索。

Mistaking learning with cramming is still very much ingrained in our educational culture. When Hermann Ebbinghaus, the godfather of learning theory, tried to understand the basics of learning and measuring learning progress, he deliberately used meaningless bits of information like random letter combinations and made sure they bore no accidental meaning. From his understanding, meaning would distract from the actual learning process. But he didn't realise that he was stripping the learning process from the very thing that is learning, which is making meaningful connections.

将学习误认为是补习，这在我们的教育文化中还是非常根深蒂固的。当学习理论教父赫尔曼-艾宾浩斯（Hermann Ebbinghaus）试图理解学习的基本原理和衡量学习进度时，他故意使用一些无意义的信息，比如随机的字母组合，并确保它们不带有意外的意义。从他的理解来看，意义会分散实际学习过程的注意力。但他并没有意识到，他正在将学习过程从学习的事情中剥离出来，也就是建立有意义的联系。

From the standpoint of evolution, it makes sense that our brains have a built- in preference to learn meaningful information and a disregard for meaningless letter combinations. But Ebbinghaus laid the foundation for a long-lasting and influential tradition of learning theories that separates understanding from learning.

从进化论的角度来看，这是有道理的，我们的大脑有一个内置的偏好，学习有意义的信息和无视无意义的字母组合。但艾宾浩斯为一个持久的、有影响力的学习理论传统奠定了基础，将理解与学习分开。

Our fascination with memory artists can also be explained by this tradition. There is nothing interesting about the capability of a normal person to remember thousands of words, countless facts,

numerous subjects, the names of celebrities, friends, family members and colleagues over a long period of time. But when someone is able to remember a series of twenty or thirty seemingly meaningless bits of information almost instantly, it fascinates us and reminds us of our struggles at school.

我们对记忆艺术家的迷恋也可以用这个传统来解释。一个正常人能够在很长一段时间内记住成千上万的单词、无数的事实、众多的主题、名人、朋友、家人和同事的名字，这没有什么有趣的。但是，当一个人几乎瞬间就能记住一连串二三十个看似毫无意义的信息时，就会让我们着迷，让我们想起在学校的奋斗历程。

The trick, of course, is not to learn like Ebbinghaus thought we would learn: by banging the information into our heads. Memory artists instead attach meaning to information and connect it to already known networks of connections in a meaningful way. One piece of information can become the cue for another and strings or networks of cues can be built. Those kinds of memory techniques are great in case you need to learn information that bears no meaning in itself or has no logical or meaningful connection to other things you already know. But why would you want to learn something like that — except when you happen to be a memory artist?

当然，诀窍是不要像艾宾浩斯认为的那样学习：把信息敲进我们的脑袋。记忆艺术家而是将意义附加在信息上，并以一种有意义的方式将其与已经知道的联系网络连接起来。一条信息可以成为另一条信息的线索，并建立起线索串或网络。在你需要学习本身没有意义或者与其他已经知道的事物没有逻辑或意义联系的信息时，这类记忆技术是很好的。但你为什么要学习这样的东西--除非你恰好是一个记忆艺术家?

Memory techniques are the fix for a rather artificial situation. When it comes to academic writing, we don't have the need for this trick, as we can choose to build and think exclusively within meaningful contexts. Abstract information like bibliographic references can be

stored externally — there is no benefit in knowing them by heart. Everything else better bear meaning.

记忆术是解决一个相当人为的情况。当涉及到学术写作时，我们没有必要使用这种技巧，因为我们可以选择完全在有意义的语境中建立和思考。像书目参考资料这样的抽象信息可以对外存储--背熟它们没有任何好处。其他的一切最好都要有意义。

The challenge of writing as well as learning is therefore not so much to learn, but to understand, as we will already have learned what we understand. The problem is that the meaning of something is not always obvious and needs to be explored. That is why we need to elaborate on it. But elaboration is nothing more than connecting information to other information in a meaningful way. The first step of elaboration is to think enough about a piece of information so we are able to write about it. The second step is to think about what it means for other contexts as well.

因此，写作以及学习的挑战不在于学习，而在于理解，因为我们会已经学会了我们理解的东西。问题是，有些东西的意义不一定是显而易见的，需要我们去探究。所以我们需要对其进行阐述。但阐述无非是将信息与其他信息以一种_有意义的方式连接起来。阐述的第一步是对一个信息有足够的思考，这样我们就能写出它。第二步是思考它对其他语境的意义。

This is not so different from when elaboration is recommended as a “learning method.” As a method, it has been proven to be more successful than any other approach (McDaniel and Donnelly 1996). This is not a new insight, either. After looking at various studies from the 1960s until the early 1980s, Barry S. Stein et al. summarises: “The results of several recent studies support the hypothesis that retention is facilitated by acquisition conditions that prompt people to elaborate information in a way that increases the distinctiveness of their memory representations.” (Stein et al. 1984, 522)

这与阐述被推荐为 "学习方法 "时并无太大区别。作为一种方法，它已被证明比其他任何方法都要成功（McDaniel and Donnelly 1996）。这也不是一个新的见解。巴里-S-斯坦因等人在考察了从20世纪60年代到80年代初的各种研究后，总结道。"最近几项研究的结果支持这样的假设：获取条件会促进记忆的保持，促使人们以增加记忆表征的独特性的方式来阐述信息。" (Stein等人，1984，522)

Stein et al. illustrate how commonsensical this is on the example of a biology novice who learns the difference between veins and arteries: “[he] may find it difficult at first to understand and remember that arteries have thick walls, are elastic, and do not have valves, whereas veins are less elastic, have thinner walls, and have valves” (ibid.). But by elaborating a little bit on this difference and asking the right questions, like “why?” the students can connect this knowledge with prior knowledge, like their understanding of pressure and the function of the heart. Just by making the connection to the common knowledge that the heart presses the blood into the arteries, they immediately know that these walls need to sustain more pressure, which means they need to be thicker than veins, in which the blood flows back to the heart with less pressure. And, of course, this makes valves necessary to keep the blood from flowing back. Once understood, the attributes and differences are almost impossible to disentangle from the knowledge of veins and arteries.

Stein等人以一个生物学新手学习静脉和动脉之间的区别为例，说明了这一点的常识性。"[他]可能会发现一开始很难理解和记住，动脉壁厚，有弹性，没有瓣膜，而静脉弹性较差，壁较薄，有瓣膜"（同上）。但只要稍微阐述一下这种区别，并提出适当的问题，比如 "为什么？"学生就可以把这些知识与之前的知识联系起来，比如对压力的理解和心脏的功能。只要将心脏将血液压入动脉这一常识联系起来，他们马上就会知道，这些动脉壁需要承受更多的压力，这意味着它们需要比静脉更厚，在静脉中，血液流回心脏的压力更小。当然，这也就需要有瓣膜来防止血液回流。一旦明白了，这些属性和区别几乎无法脱离静脉和动脉的知识。

Learned right, which means understanding, which means connecting in a meaningful way to previous knowledge, information almost cannot be forgotten anymore and will be reliably retrieved if triggered by the right cues. Moreover, this new learned knowledge can provide more possible connections for new information. If you focus your time and energy on understanding, you cannot help but learn. But if you focus your time and energy on learning without trying to understand, you will not only not understand, but also probably not learn. And the effects are cumulative.

学对了，也就是理解了，也就是以一种有意义的方式与以前的知识联系起来，信息几乎不能再被遗忘，如果被正确的线索触发，就会被可靠地检索出来。而且，这些新学的知识可以为新信息提供更多可能的联系。如果你把时间和精力集中在理解上，你就不能不学习。但如果你把时间和精力集中在学习上，而不去理解，你不仅不会理解，还可能学不会。而且这种影响是累积的。

There is a reason why the best scientists are also often very good teachers. For someone like Richard Feynman, everything was about understanding, regardless of whether he was doing research or teaching. His famous Feynman diagrams are primarily tools to make understanding easier and his lectures are famous because they help students to really understand physics. It is not surprising, therefore, that he was passionate about challenging traditional education methods. He couldn't stand textbooks full of pseudo-explanations (Feynman 1985) and teachers who tried to make learning easier for students by using artificial "real-life" examples instead of using their actual prior understanding as a connection point (Feynman 1963).

最好的科学家往往也是非常好的老师，这是有原因的。对于像理查德-费曼这样的人来说，不管他是做研究还是教学，一切都是为了理解。他著名的费曼图主要是让学生更容易理解的工具，他的讲座之所以著名，是因为他的讲座能帮助学生真正理解物理学。因此，他热衷于挑战传统教育方法也就不足为奇了。他无法忍受满是伪解释的教科书（费曼1985年），也

无法忍受那些试图用人为的 "现实生活 "例子而不是用学生之前的实际理解作为连接点来让学生更容易学习的教师（费曼1963年）。

Writing notes and sorting them into the slip-box is nothing other than an attempt to understand the wider meaning of something. The slip-box forces us to ask numerous elaborating questions: What does it mean? How does it connect to … ? What is the difference between … ? What is it similar to? That the slip-box is not sorted by topics is the precondition for actively building connections between notes. Connections can be made between heterogeneous notes — as long as the connection makes sense. This is the best antidote to the impeding way most information is given to us in our learning institutions. Most often, it comes in modular form, sorted by topic, separated by disciplines and generally isolated from other information. The slip-box is forcing us to do the exact opposite: To elaborate, to understand, to connect and therefore to learn seriously.

写下笔记，并将其整理到便签箱中，无非是想了解某件事的更广泛意义。滑箱迫使我们提出许多精心设计的问题。它是什么意思？它与.....有什么联系？它与.....有什么区别？它与什么相似？滑箱没有按主题分类，这是积极建立笔记之间联系的前提条件。异质笔记之间可以建立联系--只要联系有意义。这是对学习机构中大多数信息给我们的阻碍方式的最好解药。大多数情况下，它是以模块化的形式出现的，按主题分类，按学科分开，通常与其他信息隔离。而滑盖箱则迫使我们做完全相反的事情。去阐述，去理解，去联系，从而去认真学习。

The fact that too much order can impede learning has become more and more known (Carey 2014). Conversely, we know that the deliberate creation of variations and contrasts can facilitate learning. Nate Kornell and Bjork showed this when they experimentally taught students different art styles. First, they used the traditional approach of showing students one art style at a time using different paintings. Then, they deliberately mixed up the styles and shuffled the paintings around. The students who were presented

paintings from different styles in no particular order learned to distinguish styles faster and were also much more successful at matching paintings to styles and artists they had never seen before. This shows that elaborating on the differences and similarities of notes instead of sorting them by topic not only facilitates learning, but facilitates the ability to categorise and create sensible classifications!

太多的秩序会阻碍学习，这一事实已被越来越多的人所熟知（Carey，2014）。相反，我们知道，刻意制造变化和对比可以促进学习。Nate Kornell和Bjork在实验性地教给学生不同的艺术风格时，就表明了这一点。首先，他们采用传统的方法，用不同的画作一次向学生展示一种艺术风格。然后，他们故意把风格混在一起，把画作洗牌。那些不按特定顺序展示不同风格的画作的学生更快地学会了区分风格，而且在将画作与他们从未见过的风格和艺术家相匹配方面也更加成功。由此可见，阐述笔记的异同，而不是按主题分类，不仅有利于学习，而且有利于培养学生的分类能力，建立合理的分类方法!

11.4 Adding Permanent Notes to the Slip-Box

11.4 为滑板箱添加永久笔记。

The next step after writing the permanent notes is to add them to the slip- box.

写完永久笔记后，下一步就是将其添加到滑箱中。

1. Add a note to the slip-box either behind the note you directly refer to or, if you do not follow up on a specific note, just behind the last note in the slip-box. Number it consecutively. The Zettelkasten numbers the notes automatically. “New note” will just add a note with a new number. If you click “New note sequence,” the new note will be registered at the same time as the note that follows the note currently active on the screen. But you can always add notes “behind” other notes anytime

later. Each note can follow multiple other notes and therefore be part of different note sequences.

2. 在便笺盒中添加一张便笺，可以在你直接提及的便笺后面添加，如果你不跟进某张便笺，则在便笺盒中最后一张便笺后面添加。连续地给它编号。Zettelkasten会自动给笔记编号。"新笔记 "只是添加一个带有新编号的笔记。如果您点击 "新音符序列"，新音符将与屏幕上当前活动的音符后面的音符同时注册。但你可以随时在以后添加 "跟在 "其他音符后面的音符。每个音符可以跟在多个其他音符后面，因此是不同音符序列的一部分。

3. Add links to other notes or links on other notes to your new note.

4. 将其他笔记的链接或其他笔记上的链接添加到你的新笔记上。

5. Make sure it can be found from the index; add an entry in the index if necessary or refer to it from a note that is connected to the index.

6. 确保可以从索引中找到它；必要时在索引中添加一个条目，或者从与索引相连的笔记中引用它。

7. Build a Latticework of Mental Models

8. 构建心理模型的网格结构

12 Develop Ideas

#12发展理念

“Every note is just an element in the network of references and back references in the system, from which it gains its quality.” (Luhmann 1992)

"每一个音符都只是系统中的参考和后参考网络中的一个元素，它的质量就是从这个网络中获得的"。"（Luhmann，1992年）

Ideally, new notes are written with explicit reference to already existing notes. Obviously, this is not always possible, especially in the beginning when the slip-box is still in its infancy, but it will very soon become the first option most of the time. Then you can put the new note “behind” an existing, related note straight away. Luhmann, working with pen and paper, would put a note behind an existing one and number it accordingly. If the existing note bore the number 21, he numbered the new note 22. If note number 22 already existed, he would still add it behind 21, but number it 21a. By alternating numbers and letters, he was able to branch out into an infinite number of sequences and sub-sequences internally with no hierarchical order.

理想的情况是，在编写新的笔记时，明确参考已有的笔记。显然，这并不总是可能的，尤其是在滑盖箱还处于起步阶段的时候，但它很快就会成为大多数时候的第一选择。然后，你可以直接把新的笔记 "放在 "现有的相关笔记后面。卢曼用纸笔工作时，会把一张纸条放在现有纸条的后面，并给它编上相应的编号。如果现有的纸条上有数字21，他就把新的纸条编号为22。如果22号纸条已经存在，他仍会把它加在21号纸条后面，但编号为21a。通过数字和字母的交替，他能够在内部分支出无限多的序列和子序列，而且没有等级顺序。

An initial subsequence that attracts more and more follow-up notes can easily become a main topic with many subtopics over time (Schmidt 2013, 172). The digital Zettelkasten makes things easier: numbers are assigned automatically, note sequences can be constructed any time later and one note can become the follow-up note to different notes at the same time.

一个初始的子序列会吸引越来越多的后续笔记，随着时间的推移，很容易成为一个有许多子序列的主话题（Schmidt 2013，172）。数字化的

Zettelkasten让事情变得更简单：编号被自动分配，音符序列可以在以后的任何时间被构建，一个音符可以同时成为不同音符的后续音符。

These note sequences are the backbone of text development. They combine the advantages of an abstract with a topic-related order. A pure topic-related order would have to be organised top down and requires a hierarchical order up front. A pure abstract order would not allow idea clusters and topics to be built bottom up. The individual notes would stay mostly independent and isolated with only one-dimensional references — pretty much like a one-person Wikipedia stripped of the knowledge and fact-checking abilities of the community.

这些音符序列是文本开发的骨干。它们结合了摘要与主题相关顺序的优点。纯粹的主题相关顺序将不得不自上而下地组织，并且要求在前面有一个层次性的顺序。纯粹的抽象顺序将不允许自下而上地建立思想群和主题。单个的笔记将大多保持独立和孤立，只有一维的参考资料--差不多就像一个被剥夺了社区知识和事实核查能力的一人维基百科。

But a loose order of sequences allows freedom to change course when necessary and provides enough structure to build up complexity. Notes are only as valuable as the note and reference networks they are embedded in.

但松散的顺序允许在必要时自由地改变方向，并提供足够的结构来建立复杂性。注释的价值只与它们所嵌入的注释和参考网络一样。

Because the slip-box is not intended to be an encyclopaedia, but a tool to think with, we don't need to worry about completeness. We don't need to write anything down just to bridge a gap in a note sequence. We only write if it helps us with our own thinking. The gaps we do need to concern ourselves with are the gaps in the arguments in the final manuscript — but these gaps will only become obvious in the next step, when we take the relevant notes for an

argument out of the network of the slip-box and sort them into the linear order for the rough draft.

因为滑匣的目的不是要成为一部百科全书，而是一个思考的工具，所以我们不需要担心完整性。我们不需要为了弥补笔记序列中的空白而写下任何东西。只有当它对我们自己的思考有帮助时，我们才会写。我们确实需要关注的空白是最终稿件中论点的空白--但这些空白只有在下一步中才会变得明显，即当我们将某个论点的相关笔记从滑匣的网络中取出，并将其整理成粗稿的线性顺序。

As the slip-box is not a book with just one topic, we don't need to have an overview of it. On the contrary, we are much better off accepting as early as possible that an overview of the slip-box is as impossible as having an overview of our own thinking while we are thinking. As an extension of our own memory, the slip-box is the medium we think in , not something we think about. The note sequences are the clusters where order emerges from complexity. We extract information from different linear sources and mix it all up and shake it until new patterns emerge. Then, we form these patterns into new linear texts.

由于滑箱不是一本只有一个主题的书，我们不需要对它有一个概述。相反，我们最好尽早接受这样的事实：对滑匣的概述就像我们在思考时对自己的思维有一个概述一样，是不可能的。作为我们自己记忆的延伸，滑箱是我们思考的媒介，而不是我们思考的东西。音符序列是复杂中产生秩序的集群。我们从不同的线性来源中提取信息，并将其混合起来，摇动它，直到出现新的模式。然后，我们将这些模式形成新的线性文本。

12.1 Develop Topics

12.1 开发主题。

After adding a note to the slip-box, we need to make sure it can be found again. This is what the index is for. Luhmann wrote an index with a typewriter on index cards. In the Zettelkasten, keywords can easily be added to a note like tags and will then show up in the

index. They should be chosen carefully and sparsely. Luhmann would add the number of one or two (rarely more) notes next to a keyword in the index (Schmidt 2013, 171). The reason he was so economical with notes per keyword and why we too should be very selective lies in the way the slip-box is used. Because it should not be used as an archive, where we just take out what we put in, but as a system to think with, the references between the notes are much more important than the references from the index to a single note. Focusing exclusively on the index would basically mean that we always know upfront what we are looking for — we would have to have a fully developed plan in our heads. But liberating our brains from the task of organizing the notes is the main reason we use the slip-box in the first place.

在滑箱中添加注解后，我们需要确保它可以再次被找到。这就是索引的作用。Luhmann用打字机在索引卡上写了一个索引。在Zettelkasten中，关键词可以很容易地像标签一样添加到便条上，然后会显示在索引中。它们的选择要慎重，而且要稀少。Luhmann会在索引中的关键词旁边加上一两个（很少更多）笔记的编号（Schmidt 2013，171）。他对每个关键词的注释如此节约，为什么我们也应该非常有选择性，原因就在于滑箱的使用方式。因为它不应该被当作一个档案馆，我们只是把放进去的东西拿出来，而是作为一个系统来思考，笔记之间的引用比索引对单个笔记的引用要重要得多。如果只关注索引，基本上就意味着我们总是事先知道自己要找什么--我们必须在脑子里有一个完整的计划。但把我们的大脑从整理笔记的任务中解放出来，才是我们使用滑箱的主要原因。

The file-box can do much more than just hand out what we request. It can surprise and remind us of long-forgotten ideas and trigger new ones. This crucial element of surprise comes into play on the level of the interconnected notes, not when we are looking for particular entries in the index. Most notes will be found through other notes. The organisation of the notes is in the network of references in the slip-box, so all we need from the index are entry points. A few wisely chosen notes are sufficient for each entry point. The quicker we get from the index to the concrete notes, the

quicker we move our attention from mentally preconceived ideas towards the fact-rich level of interconnected content, where we can conduct a fact-based dialogue with the slip-box.

文件箱能做的远远不止是分发我们要求的东西。它可以让我们感到惊讶，让我们想起久违的想法，并引发新的想法。这种关键的惊喜因素在相互关联的笔记层面上发挥作用，而不是当我们在索引中寻找特定的条目时。大多数笔记会通过其他笔记找到。笔记的组织在滑匣中的参考文献网络中，所以我们从索引中需要的只是入口点。对于每个切入点，明智地选择几个笔记就足够了。从索引到具体的笔记，我们的注意力就越快从头脑中的先入为主转向事实丰富的相互联系的内容层面，在这里我们可以与滑匣进行基于事实的对话。

Even though we will not get an overview of the whole slip-box (as we certainly will never get an overview of our whole internal memory), we can get an overview of a specific topic. But because the structure of topics and subtopics is not a given, but the outcome of our thinking, they too are subject to ongoing considerations and alteration. The consideration of how to structure a topic, therefore, belongs on notes as well — and not on a meta-hierarchical level. We can provide ourselves with a (temporarily valid) overview over a topic or subtopic just by making another note. If we then link from the index to such a note, we have a good entry point. If the overview on this note ceases to correctly represent the state of a cluster or topic, or we decide it should be structured differently, we can write a new note with a better structure and update the respective link from the index. This is important: Every consideration on the structure of a topic is just another consideration on a note — bound to change and dependent on the development of our understanding.

即使我们不会得到整个滑箱的概况（因为我们当然永远也不会得到我们整个内部记忆的概况），但我们可以得到一个特定主题的概况。但由于题目和副题目的结构不是必然的，而是我们思考的结果，所以它们也是要不断考虑和改变的。因此，对如何架构一个主题的考虑，也属于笔记上的--

而不是元层次的。我们只需再做一个笔记，就可以为自己提供一个关于一个主题或子主题的（暂时有效的）概览。如果我们再从索引中链接到这样一个笔记，我们就有了一个很好的切入点。如果这个笔记上的概述不再正确地代表一个群组或主题的状态，或者我们决定它应该有不同的结构，我们可以写一个结构更好的新笔记，并从索引中更新相应的链接。这一点很重要：对主题结构的每一个考虑都只是对笔记的另一个考虑--必然会改变，并且取决于我们理解的发展。

The way people choose their keywords shows clearly if they think like an archivist or a writer. Do they wonder where to store a note or how to retrieve it? The archivist asks: Which keyword is the most fitting? A writer asks: In which circumstances will I want to stumble upon this note, even if I forget about it? It is a crucial difference.

人们选择关键词的方式清楚地显示出他们是否像一个档案管理员或作家那样思考。他们是想知道在哪里_存储一个笔记，还是如何_检索它？档案管理员会问：哪一个关键词最合适？哪个关键词最合适？作家问：哪一个关键词最合适？在什么情况下，我会想偶然发现这个笔记， 即使我忘记了它？这是一个至关重要的区别。

Let's assume I want to add a short note that says: "Tversky/Kahneman (1973) showed in an experiment that people are more likely to overestimate the likelihood of an event to happen if they are able to conceive it well and in detail than if it were abstract." If you think in terms of archiving, you might feel keywords like "misjudgements," "experimental psychology" or "experiment" would be fitting. In this case, you would think in general categories like "subject," "discipline" or "method." It is rather unlikely that you will ever think of writing an article based on all notes to "experimental psychology" or see the need for retrieving all notes filed under "experiment." Maybe you will think about a book that collects "misjudgements," but it is unlikely that you could turn any of these piles of notes into a structured argument.

假设我想添加一个简短的笔记，上面写着："Tversky/Kahneman(1973)在一个实验中表明，如果人们能够很好地、详细地构思一个事件，比起抽象的事件，人们更容易高估它发生的可能性。" 如果从存档的角度考虑，你可能会觉得 "误判"、"实验心理学 "或 "实验 "这样的关键词比较合适。在这种情况下，你会用 "主体"、"学科 "或 "方法 "等一般类别来思考。你相当不可能想到根据所有的笔记写一篇文章给 "实验心理学"，或者认为需要检索所有归档在 "实验 "下的笔记。也许你会想到写一本收集 "误判 "的书，但你不太可能把这些堆积如山的笔记中的任何一个变成结构化的论点。

As writers, we approach the question of keywords differently. We look at our slip-box for already existing lines of thought and think about the questions and problems already on our minds to which a new note might contribute.

作为作家，我们对待关键词问题的态度是不同的。我们查看我们的滑箱中已经存在的思路，并思考我们头脑中已经存在的问题和难题，一个新的笔记可能会对这些问题有所贡献。

If you are an economist working on decision-making, you might think of the preferences management often shows for projects with an easy-to-visualise outcome over more profitable ones. A fitting keyword would then be “capital allocation problems.” By assigning the keyword alone, the note is already put into a specific context, which gives it a particular meaning and triggers context-specific questions like: If this is a systematic effect, can it be measured? Has someone already measured it? Does the effect show up in available data, like the market value of publicly listed companies, and if so, is it that companies with products that are easy to visualise have richer valuations than those who offer services or products that are rather difficult to grasp? And if not: Is it because the experimental findings cannot be extrapolated or is it because the knowledge is already publicly available and therefore priced in? If not, is it another argument against the Efficient Market hypothesis

or just a good way to stack the odds in the stock market in your favour?

如果你是一个从事决策工作的经济学家，你可能会想到管理层经常表现出对容易看到结果的项目的偏好，而不是对更有利可图的项目的偏好。那么一个合适的关键词就是 "资本分配问题"。仅仅是分配关键词，就已经把笔记放到了一个特定的语境中，从而赋予了它特定的意义，并引发了特定语境的问题，比如。如果这是一个系统性的影响， 它可以测量？是否已经有人测量过它？这种效应是否在现有的数据中显示出来，比如上市公司的市值，如果有，是不是那些产品容易可视化的公司比那些提供服务或产品相当难以把握的公司有更丰富的估值？而如果不是这样。是因为实验结果无法外推 还是因为知识已经公开，所以已经被定价了？如果不是，那它是反对有效市场假说的另一个论据，还是只是一个在股市中对自己有利的好办法?

By assigning this keyword, you might stumble upon already existing notes on capital allocation, which either help to answer these questions or trigger new ones. But maybe you are a political scientist and read this note as an answer to the question of why certain topics are discussed during an election and others not, or why it could be politically more sensible to promote easy-to-visualise solutions over solutions that really work. Fitting keywords here might be “political strategies,” “elections” or “dysfunctionalities, political.”

通过指定这个关键词，你可能会偶然发现已有的关于资本配置的笔记，这些笔记要么有助于回答这些问题，要么引发新的问题。但是，也许你是一个政治学家，读到这篇笔记的时候，你会发现它是对以下问题的一个回答：为什么在选举期间会讨论某些话题，而其他话题却不讨论，或者为什么在政治上，推广易于视觉化的解决方案比真正有效的解决方案更明智。这里合适的关键词可能是 "政治战略"、"选举 "或 "功能障碍，政治"。

Keywords should always be assigned with an eye towards the topics you are working on or interested in, never by looking at the note in isolation. This is also why this process cannot be automated or

delegated to a machine or program — it requires thinking. The Zettelkasten does make suggestions based on existing keywords and scans for keywords in the text you wrote. But it makes sense to see these suggestions more as a warning sign than an invitation to use them: these are the most obvious ideas and probably not the best ones. Good keywords are usually not already mentioned as words in the note. Assume I have the note “A sudden increase of ad-hoc theories is for Kuhn a sign that a normal-science phase might be in crisis (Kuhn 1967, 96).” A fitting keyword might be “paradigm change,” but that phrase is not in the note and therefore would not be suggested by the program.

分配关键词时一定要着眼于自己正在研究的课题或感兴趣的课题，千万不要孤立地看笔记。这也是为什么这个过程不能自动或委托给机器或程序--它需要思考。Zettelkasten确实会根据现有的关键词提出建议，并扫描你写的文本中的关键词。但是，将这些建议更多地看作是一个警告信号，而不是邀请使用它们是有道理的：这些是最明显的想法，可能不是最好的。好的关键词通常不是已经在备注中提到的词。假设我有这样的注解："突然增加的特设理论对库恩来说是一个正常科学阶段可能处于危机的标志（库恩1967，96）"。一个合适的关键词可能是 "范式变化"，但这个短语不在注释中，因此不会被程序建议。

Assigning keywords is much more than just a bureaucratic act. It is a crucial part of the thinking process, which often leads to a deeper elaboration of the note itself and the connection to other notes.

分配关键词不仅仅是一种官僚行为。它是思维过程中至关重要的一部分，它往往会导致对笔记本身以及与其他笔记的联系进行更深入的阐述。

12.2 Make Smart Connections

12.2 进行智能连接。

In the digital version of the Zettelkasten, all we need to do is to click on “Links” and add the number of the note we want to refer to. It then automatically adds a backlink to the note we refer from. Even

though the Zettelkasten makes suggestions here, too, for example based on joint literature references, making good cross-references is a matter of serious thinking and a crucial part of the development of thoughts.

在数字版的Zettelkasten中，我们只需要点击 "链接"，并添加我们要参考的注释的编号。然后它就会自动为我们引用的注释添加一个反向链接。尽管Zettelkasten在这里也提出了一些建议，比如基于联合文献引用，但做好交叉引用是一个需要认真思考的问题，也是思想发展的重要组成部分。

Luhmann used four basic types of cross-references in his file-box (Schmidt 2013, 173f; Schmidt 2015, 165f). Only the first and last are relevant for the digital Zettelkasten, the other two are merely compensating for restrictions of the analogue pen and paper version. You don't need to concern yourself with them if you use the digital program.

Luhmann在他的文件箱中使用了四种基本的交叉引用类型（Schmidt 2013，173f；Schmidt 2015，165f）。只有第一种和最后一种与数字Zettelkasten有关，其他两种只是弥补模拟笔和纸质版的限制。如果你使用数字程序，你不需要关注它们。

1. The first type of links are those on notes that are giving you the overview of a topic. These are notes directly referred to from the index and usually used as an entry point into a topic that has already developed to such a degree that an overview is needed or at least becomes helpful. On a note like this, you can collect links to other relevant notes to this topic or question, preferably with a short indication of what to find on these notes (one or two words or a short sentence is sufficient). This kind of note helps to structure thoughts and can be seen as an in-between step towards the development of a manuscript. Above all, they help orientate oneself within the slip-box. You will know when you need to write one. Luhmann collected up to 25 links to other notes on these kind

of entry notes. They don't have to be written in one go as links can be added over time, which again shows how topics can grow organically. What we think is relevant for a topic and what is not depends on our current understanding and should be taken quite seriously: It defines an idea as much as the facts it is based on. What we regard as being relevant for a topic and how we structure it will change over time. This change might lead to another note with a different, more adequate topic structure, which then can be seen as a comment on the previous note. Thankfully, it won't make all the other notes redundant. As mentioned before: All we have to do is to change the entry in the index to this new note and/or indicate on the old note that we now consider a new structure more fitting.

2. 第一类链接是那些给你提供一个主题概述的笔记上的链接。这些是直接从索引中引用的笔记，通常作为进入一个主题的切入点，而这个主题已经发展到需要一个概述的程度，或者至少变得有用。在这样的笔记上，你可以收集与这个主题或问题相关的其他笔记的链接，最好是简短地说明在这些笔记上可以找到什么（一两个字或一句话就够了）。这种笔记有助于组织思路，可以看作是发展稿件的中间步骤。最重要的是，它们有助于在滑箱中定位自己。你会知道什么时候需要写一个。Luhmann收集了多达25个关于这类录入笔记的其他笔记的链接。它们不一定要一次写完，因为链接可以随着时间的推移而增加，这再次说明了主题是如何有机增长的。我们认为什么是与主题相关的，什么是不相关的，这取决于我们目前的理解，应该相当重视。它定义了一个想法，就像它所基于的事实一样。我们认为什么是与一个主题相关的，以及我们如何构建它将随着时间的推移而改变。这种变化可能会导致另一个具有不同的、更充分的主题结构的笔记，然后它可以被看作是对前一个笔记的评论。值得庆幸的是，它不会让其他所有的笔记变得多余。如前所述。我们要做的就是把索引中的条目改成这个新的注释，然后/或者在旧的注释上注明我们现在认为新的结构更合适。

3. A similar though less crucial kind of link collection is on those notes that give an overview of a local, physical cluster of the slip-box. This is only necessary if you work with pen and paper like Luhmann. While the first type of note gives an overview of a topic, regardless of where the notes are located within the slip-box, this type of note is a pragmatic way of keeping track of all the different topics discussed on the notes that are physically close together. As Luhmann put notes between notes to internally branch out subtopics and sub-subtopics, original lines of thoughts were often interrupted by hundreds of different notes. This second type of note keeps track of the original lines of thought. Obviously, we don't need to worry about this if we work with the digital version.

4. 类似的一种虽然不那么关键的链接收集是在那些对滑箱的局部、物理集群进行概述的注解上。只有当你像Luhmann那样用笔和纸工作时，这才是必要的。虽然第一种笔记给出了一个主题的概述，不管笔记在滑箱内的位置如何，但这种类型的笔记是一种实用的方式，以跟踪所有物理上接近的笔记上讨论的不同主题。由于卢曼将笔记放在笔记之间，以在内部分支出子主题和子主题，原来的思路经常被数百个不同的笔记所打断。这第二种笔记就能记录原有的思路。显然，如果我们使用数字版工作，就不需要担心这个问题。

5. Equally less relevant for the digital version are those links that indicate the note to which the current note is a follow-up and those links that indicate the note that follows on the current note. Again, this is only relevant to see which notes follow each other, even if they don't physically stand behind each other anymore. The digital Zettelkasten automatically adds these kinds of backlinks and presents you the relevant notes in a note sequence.

6. 同样与数字版关系不大的是那些表示当前笔记是后续的笔记的链接和表示当前笔记上后续的笔记的链接。同样，这只与查看哪些音符互相跟随有关，即使它们在物理上不再互相站在后面。数字

Zettelkasten会自动添加这类反向链接，并将相关笔记以笔记序列的形式呈现给你。

7. The most common form of reference is plain note–to–note links. They have no function other than indicating a relevant connection between two individual notes. By linking two related notes regardless of where they are within the slip–box or within different contexts, surprising new lines of thought can be established. These note–to–note links are like the “weak links” (Granovetter 1973) of social relationships we have with acquaintances: even though they are usually not the ones we turn to first, they often can offer new and different perspectives.

8. 最常见的参考形式是普通的音符与音符之间的联系。它们除了表明两个单独注释之间的相关联系外，没有其他功能。通过将两个相关的注解联系起来，无论它们在滑匣中的什么位置或在不同的背景下，都可以建立令人惊讶的新思路。这些笔记与笔记之间的联系就像我们与熟人之间的社会关系中的 "薄弱环节"（Granovetter，1973年）：尽管他们通常不是我们首先求助的对象，但他们往往能够提供新的不同的观点。

These links can help us to find surprising connections and similarities between seemingly unrelated topics. Patterns might not become visible right away, but they might emerge after multiple note–to–note links between two topics have been established. It is no coincidence that one of the main features of Luhmann’s theory of social systems is its discovery of structural patterns that could be found in very different parts of society. For example, he was able to show how vastly different things like money, power, love, truth and justice can be seen as social inventions that solve structurally similar problems (they all can be seen as media that make the acceptance of certain communication offers more likely, cf. Luhmann 1997, chapter 9—12). Observations like these could never be done nor explained by someone who is working with a system

that keeps things neatly separated by preconceived themes and topics.

这些链接可以帮助我们在看似不相关的话题之间找到令人惊讶的联系和相似之处。模式可能不会马上变得明显，但它们可能在两个主题之间建立起多个音符间的联系后出现。卢曼的社会系统理论的主要特点之一，就是发现了在社会中非常不同的地方都能找到的结构模式，这不是偶然的。例如，他能够表明，像金钱、权力、爱情、真理和正义这些迥然不同的东西是如何被看作是解决结构上相似问题的社会发明（它们都可以被看作是使人们更有可能接受某些传播要约的媒介，参见Luhmann 1997，第9–12章）。像这样的观察，永远不可能完成，也不可能由一个在一个系统中工作的人去解释，因为这个系统将事物用先入为主的主题和话题整齐地分开。

It is important to always keep in mind that making these links is not a chore, a kind of file-box maintenance. The search for meaningful connections is a crucial part of the thinking process towards the finished manuscript. But here, it is dealt with in a very concrete way. Instead of figuratively searching our internal memory, we literally go through the file-box and look for connections. By dealing with actual notes, we are also less prone to imagine connections where there aren't any, as we can see in black and white if something makes sense or not.

重要的是要始终牢记，建立这些联系并不是一件苦差事，是一种文件箱的维护。寻找有意义的联系是走向成稿的思维过程中的一个重要环节。但在这里，它是以一种非常具体的方式来处理的。我们不是形象地搜索我们的内部记忆，而是真正地通过文件箱来寻找联系。通过处理实际的笔记，我们也不容易想象出没有任何联系的地方，因为我们可以白纸黑字地看到一些东西是否有意义。

As we are making these connections, we build up an internal structure of the slip-box, which is shaped by our thinking. While this structure builds up externally and independently of our limited memory, it will, in return, shape our thinking as well and help us to

think in a more structured way. Our ideas will be rooted in a network of facts, thought-through ideas and verifiable references. The slip-box is like a well-informed but down-to-earth communication partner who keeps us grounded. If we try to feed it some lofty ideas, it will force us to check first: What is the reference? How does that connect to the facts and the ideas you already have?

当我们在建立这些联系的时候，我们建立了一个内部的滑箱结构，这个结构是由我们的思维形成的。虽然这个结构是在外部建立起来的，独立于我们有限的记忆，但反过来，它也会塑造我们的思维，帮助我们以更有条理的方式进行思考。我们的想法将根植于一个由事实、经过思考的想法和可验证的参照物组成的网络中。滑箱就像一个消息灵通但又平易近人的沟通伙伴，让我们立足于此。如果我们试图给它灌输一些高大上的想法，它就会逼着我们先去核实。什么是参考？如何与事实和你已有的想法联系起来？

12.3 Compare, Correct and Differentiate

12.3 比较、纠正和区别。

If you use the slip-box for a while, you will inevitably make a sobering discovery: The great new idea you are about to add to the slip-box turns out to be already in there. Even worse, chances are this idea wasn't even yours, but someone else's. Having the same thought twice or mistaking another person's idea with our own is far from unusual. Unfortunately, most people never notice this humbling fact because they have no system that confronts them with already thought thoughts. If we forget about an idea and have it again, our brains get as excited as if we are having it the first time. Therefore, working with the slip-box is disillusioning, but at the same time it increases the chance that we actually move forward in our thinking towards uncharted territory, instead of just feeling like we are moving forward.

如果你使用滑板箱一段时间后，你难免会有一个清醒的发现。伟大的新想法 你要添加到滑箱 原来是已经在那里。更糟糕的是，这个想法有可能根本不是你的，而是别人的。同样的想法有两次，或者把别人的想法误认为是我们自己的想法，这种情况绝非罕见。不幸的是，大多数人从来没有注意到这个令人惭愧的事实，因为他们没有系统来面对他们已经想到的想法。如果我们忘记了一个想法，又有了它，我们的大脑就会像第一次有这个想法一样兴奋。因此，与滑箱合作是令人幻灭的，但同时它也增加了我们在思考中真正向未知领域前进的机会，而不仅仅是_感觉我们在前进。

Sometimes, the confrontation with old notes helps to detect differences we wouldn't have noticed otherwise. What seems to be the same idea sometimes turns out to be slightly, but crucially, different. We then can explicitly discuss this difference on another note. This is especially helpful when two authors use the same concept in slightly different ways. The clarification of differences in the use of words and concepts is a major part of every serious academic work anyway — but it is so much easier if you have a nit-picking partner like the slip-box. If we had written just excerpts or notes that we had kept in separate places, these differences would only become obvious if we had all the relevant notes on our minds at the same time. It is much easier to detect these small but crucial differences when we literally have our notes in front of our eyes, comparing them during our attempts to connect them. The brain is very good at making associations and spotting patterns and similarities between seemingly different things and also very good in spotting differences between seemingly similar things, but it needs to have them presented objectively and externally. It is much easier to see differences and similarities than to detect them by mere thinking.

有时，与旧笔记的对峙有助于发现我们在其他情况下不会注意到的差异。看似相同的想法有时会被证明是略有不同，但关键是不同的。我们就可以在另一个笔记上明确地讨论这种差异。当两个作者以略微不同的方式使用同一个概念时，这一点尤其有帮助。反正澄清词语和概念使用上的差异是每一个严肃的学术工作的主要部分--但如果你有一个像滑稽盒一样的挑

剔伙伴，那就容易多了。如果我们写的只是摘录或分门别类保存的笔记，那么只有当我们把所有相关笔记同时记在脑海中时，这些差异才会变得明显。当我们真的将笔记摆在眼前，在试图将它们联系起来的过程中进行比较时，就会更容易发现这些微小但关键的差异。大脑非常善于进行联想，发现看似不同事物之间的模式和相似性，也非常善于发现看似相似事物之间的差异，但它需要让它们客观地从外部呈现出来。比起单纯的思考，看到差异和相似性要容易得多。

Comparing notes also helps us to detect contradictions, paradoxes or oppositions — important facilitators for insight. When we realise that we used to accept two contradicting ideas as equally true, we know that we have a problem — and problems are good because we now have something to solve. A paradox can be a sign that we haven't thought thoroughly enough about a problem or, conversely, that we exhausted the possibilities of a certain paradigm. Finally, oppositions help to shape ideas by providing contrast. Albert Rothenberg suggests that the construction of oppositions is the most reliable way of generating new ideas (Rothenberg 1971; 1996; 2015).

比较笔记还能帮助我们发现矛盾、悖论或对立--这是洞察力的重要促进因素。当我们意识到，我们曾经接受两个相互矛盾的观点，认为它们同样正确时，我们就知道我们有问题了--而问题是好的，因为我们现在有东西要解决。矛盾可能是我们对一个问题思考得不够透彻的标志，或者反过来说，我们用尽了某种范式的可能性。最后，对立面通过提供对比来帮助塑造思想。阿尔伯特-罗滕伯格提出，对立面的构建是产生新思想的最可靠的方式（罗滕伯格1971；1996；2015）。

The constant comparing of notes also serves as an ongoing examination of old notes in a new light. I am surprised how often the addition of one note leads to a correction, a complementation or an improvement of old ideas. Sometimes, we discover that the source given in a text is not the actual source. Sometimes, we discover that the interpretation of a study conflicts with another interpretation, making us realise that the study is so vague that it can be used as

proof for two contradicting interpretations. Sometimes, we find two unrelated studies that give proof to the same point, which is not a correction, but an indication that we are on to something. Adding new notes to old notes and being forced to compare them leads not only to a constant improvement of one's own work, but often discloses weaknesses in the texts we read. We have to compensate for that by being extra critical as readers and careful with extracting information from texts, and we always have to check the original source of a claim.[34]

对笔记的不断比较也是以新的视角对旧的笔记进行不断的审视。我惊奇地发现，往往一个注解的添加会导致旧观念的修正、补充或改进。有时，我们会发现，文中所给的来源并不是实际的来源。有时，我们发现一项研究的解释与另一项解释相冲突，使我们意识到这项研究是如此的模糊，以至于它可以作为两种相互矛盾的解释的证明。有时，我们发现两个不相关的研究给同一个观点提供了证明，这不是修正，而是说明我们有了发现。在旧的笔记中加入新的笔记，并被迫进行比较，这不仅会使自己的工作不断改进，而且往往会暴露出我们所读文本的弱点。我们要弥补这一点，作为读者要格外地挑剔，小心翼翼地从文本中提取信息，我们总是要查证一个说法的原始来源。[34]

The slip-box not only confronts us with dis-confirming information, but also helps with what is known as the feature-positive effect (Allison and Messick 1988; Newman, Wolff, and Hearst 1980; Sainsbury 1971). This is the phenomenon in which we tend to overstate the importance of information that is (mentally) easily available to us and tilts our thinking towards the most recently acquired facts, not necessarily the most relevant ones. Without external help, we would not only take exclusively into account what we know, but what is on top of our heads.[35] The slip-box constantly reminds us of information we have long forgotten and wouldn't remember otherwise — so much so, we wouldn't even look for it.

滑箱不仅让我们面对不确定的信息，而且还有助于实现所谓的特征正效应（Allison和Messick 1988；Newman、Wolff和Hearst 1980；Sainsbury 1971）。这是一种现象，即我们倾向于高估（精神上）容易获得的信息的重要性，并使我们的思维向最近获得的事实倾斜，而不一定是最相关的事实。如果没有外界的帮助，我们不仅会专门考虑我们所知道的东西，而且会考虑我们头上的东西。[35]滑箱不断地提醒我们早已忘记的信息，否则就不会记得--以至于我们根本不会去找它。

12.4 Assemble a Toolbox for Thinking

12.4 组装一个思考的工具箱。

Just by working with the slip-box, we retrieve old ideas and facts on an irregular basis and connect them with other bits of information — very much how experts recommend we learn (Bjork 2011, 8; Kornell and Bjork 2008). This is also the idea behind flashcards. But even though flashcards are much more effective than cramming or reviewing information within the context of a textbook, they also have a downside: The information on flashcards is neither elaborated on nor embedded in some form of context. Each flashcard stays isolated instead of being connected with the network of theoretical frames, our experiences or our latticework of mental models. This not only makes it much more difficult to learn, but also difficult to understand the implications and the meaning of information (cf. Birnbaum et al., 2013). A scientific term or concept only becomes meaningful within the context of a theory — otherwise it would just be a word.

通过使用闪卡，我们可以不定期地检索旧的想法和事实，并将它们与其他信息联系起来--这正是专家们推荐的学习方式（Bjork，2011，8；Kornell和Bjork，2008）。这也是闪卡背后的理念。但是，尽管闪卡比补习或在课本中复习信息要有效得多，它们也有一个缺点。闪卡上的信息既没有被详细说明 也没有嵌入某种形式的背景。每张闪卡都是孤立的，而不是与理论框架的网络、我们的经验或我们的心理模型的网格相联系。这不仅使学习的难度大大增加，而且也很难理解信息的含义和意义（参见

Birnbaum等人，2013）。一个科学术语或概念只有在理论的背景下才会变得有意义--否则它就只是一个词。

The same is true for everyday situations. Our ability to read a situation or to interpret information depends on our broader knowledge and how we make sense of it. Science and everyday life are in this regard not so different; both are intertwined. Scientific work is much more pragmatic and less determined by theory than outsiders would expect (Latour and Woolgar 1979). At the same time, we use scientific knowledge and theories to make sense of our surroundings every day. And some theories or theoretical models are surprisingly versatile, which is why it makes sense to assemble a toolbox of useful mental models (Manktelow and Craik 2004) that could help with our daily challenges and make sense of the things we learn and encounter.

日常情境也是如此。我们解读情境或解释信息的能力取决于我们更广泛的知识以及我们如何理解它。科学和日常生活在这方面并没有太大的不同，两者是相互交织的。科学工作比外人所期望的要务实得多，较少受理论的决定（Latour和Woolgar，1979）。同时，我们每天都在利用科学知识和理论来理解周围的环境。而一些理论或理论模型的通用性令人惊讶，这就是为什么要组建一个有用的心理模型工具箱的原因（Manktelow和Craik，2004），它可以帮助我们应对日常的挑战，并使我们学习和遇到的事情有意义。

Charlie Munger, Warren Buffett's partner and vice chairman of Berkshire Hathaway, stresses the importance of having a broad theoretical toolbox — not to be a good academic, but to have a good, pragmatic grip on reality. He regularly explains to students which mental models have proven most useful to help him understand markets and human behaviour. He advocates looking out for the most powerful concepts in every discipline and to try to understand them so thoroughly that they become part of our thinking. The moment one starts to combine these mental models and attach one's experiences to them, one cannot help but gain

what he calls “worldly wisdom.” The importance is to have not just a few, but a broad range of mental models in your head. Otherwise, you risk becoming too attached to one or two and see only what fits them. You would become the man with a hammer who sees nails everywhere (cf. Maslow, 1966, 15).

巴菲特的合伙人、伯克希尔-哈撒韦公司副董事长查理-芒格强调拥有广泛的理论工具箱的重要性--不是要成为一个好的学者，而是要对现实有一个良好的、务实的把握。他经常向学生解释哪些心理模型被证明对帮助他理解市场和人类行为最有用。他主张在每一门学科中寻找最强大的概念，并试图彻底理解它们，使它们成为我们思维的一部分。当一个人开始将这些思维模式结合起来，并将自己的经验附加在这些思维模式上的时候，就会不由自主地获得他所说的 "世界性的智慧"。重要的是，在你的脑海中不要只有几个，而是要有广泛的心理模型。否则，你就有可能过于执着于一两个，只看到适合它们的东西。你会变成拿着锤子到处看到钉子的人（参见马斯洛，1966，15）。

Munger writes: “Well, the first rule is that you can’t really know anything if you just remember isolated facts and try and bang ’em back. If the facts don’t hang together on a latticework of theory, you don’t have them in a usable form. You’ve got to have models in your head. And you’ve got to array your experience, both vicarious and direct, on this latticework of models. You may have noticed students who just try to remember and pound back what is remembered. Well, they fail in school and in life. You’ve got to hang experience on a latticework of models in your head.” (Munger 1994).

芒格写道："好吧，第一条规则是，如果你只是记住孤立的事实，并试图把它们撞回去，你就不可能真正知道什么。如果事实没有挂在理论的网格上，你就没有一个可用的形式。你必须在脑海中建立模型。你必须把你的经验，包括间接的和直接的，排列在这个模型的网格上。你可能已经注意到了那些只想记住的学生 You may have noticed students who just try to remember and pound back what is remembered. 然后把记住的东西打回去。好吧，他们在学校和生活中都失败了。你得把经验挂在脑海中的模型格子上"。芒格1994）。

A truly wise person is not someone who knows everything, but someone who is able to make sense of things by drawing from an extended resource of interpretation schemes. This stands in harsh contrast to the common but not- so-wise belief that we need to learn from experience. It is much better to learn from the experiences of others — especially when this experience is reflected on and turned into versatile “mental models” that can be used in different situations.

一个真正的智者不是一个什么都知道的人，而是一个能够通过从扩展的解释方案资源中获取意义的人。这与我们需要从经验中学习的常见但不那么明智的信念形成了鲜明的对比。从他人的经验中学习要好得多--尤其是当这种经验被反思并转化为可以在不同情况下使用的多功能 "心理模型 "时。

When we delegate the storage of knowledge to the slip-box and at the same time focus on the principles behind an idea while we write, add and connect notes, when we look for patterns and think beyond the most obvious interpretation of a note, when we try to make sense of something, combine different ideas and develop lines of thought, we do exactly that: we build up a “latticework of mental models” instead of just “remembering isolated facts and try and bang ’em back.”

当我们把储存知识的工作委托给滑箱，同时在书写、添加和连接笔记的同时，专注于一个想法背后的原理，当我们寻找模式，并超越对笔记最明显的解释进行思考，当我们尝试去理解某件事情，结合不同的想法，发展思路，我们正是这样做的：我们建立了一个 "心理模型的格子网"，而不是仅仅 "记住孤立的事实，并尝试把它们撞回去"。

The beauty of this approach is that we co-evolve with our slip-boxes: we build the same connections in our heads while we deliberately develop them in our slip-box — and make it easier to remember the facts as they now have a latticework we can attach them to. If we practice learning not as a pure accumulation of

knowledge, but as an attempt to build up a latticework of theories and mental models to which information can stick, we enter a virtuous circle where learning facilitates learning.

这种方法的妙处在于，我们与我们的滑箱共同发展：我们在脑海中建立同样的联系，同时我们在滑箱中刻意发展这些联系--并使我们更容易记住这些事实，因为它们现在有了一个我们可以附加的网格。如果我们练习学习不是作为知识的纯粹积累，而是试图建立一个理论和心理模型的网格，使信息能够附着在上面，我们就进入了一个良性循环，学习促进了学习。

Helmut D. Sachs puts it like this:

Helmut D. Sachs这样说。

“By learning, retaining, and building on the retained basics, we are creating a rich web of associated information. The more we know, the more information (hooks) we have to connect new information to, the easier we can form long– term memories. […] Learning becomes fun. We have entered a virtuous circle of learning, and it seems as if our long–term memory capacity and speed are actually growing. On the other hand, if we fail to retain what we have learned, for example, by not using effective strategies, it becomes increasingly difficult to learn information that builds on earlier learning. More and more knowledge gaps become apparent. Since we can’t really connect new information to gaps, learning becomes an uphill battle that exhausts us and takes the fun out of learning. It seems as if we have reached the capacity limit of our brain and memory. Welcome to a vicious circle. Certainly, you would much rather be in a virtuous learning circle, so to remember what you have learned, you need to build effective long–term memory structures.” (Sachs 2013, 26)

"通过学习，保留，并建立在保留的基础知识上， 我们正在创造一个丰富的相关信息网络。我们知道的越多，我们就有更多的信息（钩子）来连接新的信息，我们就越容易形成长期的记忆。[.....]学习变得有趣。我们已

经进入了学习的良性循环，似乎我们的长期记忆能力和速度实际上正在增长。另一方面，如果我们不能保留我们所学的知识，例如，没有使用有效的策略，那么学习建立在先前学习基础上的信息就会变得越来越困难。越来越多的知识差距变得明显。由于我们无法真正将新的信息与差距联系起来，学习就变成了一场艰苦的战斗，让我们疲惫不堪，失去了学习的乐趣。似乎我们的大脑和记忆力已经达到了容量极限。欢迎进入一个恶性循环。当然，你更愿意处于一个良性的学习循环中，所以要想记住你所学到的东西，你需要建立有效的长期记忆结构"。(Sachs 2013，26)

His recommendations for learning read almost like instructions for the slip– box:

他的学习建议几乎就像滑箱的说明书一样。

1. Pay attention to what you want to remember.
2. 注意你要记住的东西。
3. Properly encode the information you want to keep. (This includes thinking about suitable cues.)
4. 适当地对你想保留的信息进行编码。这包括思考合适的提示）。
5. Practice recall. (Ibid., 31)
6. 练习回忆。(同上，31)

We learn something not only when we connect it to prior knowledge and try to understand its broader implications (elaboration), but also when we try to retrieve it at different times (spacing) in different contexts (variation), ideally with the help of chance (contextual interference) and with a deliberate effort (retrieval). The slip–box not only provides us with the opportunity to learn in this proven way, it forces us to do exactly what is recommended just by using it. We have to elaborate on what we read just to be able to write it down and translate it into different contexts. We retrieve information from

the slip-box whenever we try to connect new notes with old notes. Just by doing this, we mix up contexts, shuffle notes and retrieve the information in irregular intervals. And along the way, we further elaborate on the information, which we always retrieve deliberately.

我们学习某件事情时，不仅要把它与先前的知识联系起来，并试图理解其更广泛的含义（阐述），而且要在不同的时间（间隔）、不同的情境（变异）中尝试检索它，最好是借助偶然的机会（情境干扰）和刻意的努力（检索）。滑箱不仅为我们提供了这种行之有效的学习机会，而且迫使我们只要使用它，就会完全按照推荐的方法去做。我们必须对我们所读到的内容进行详细说明，只为能够将其写下来，并将其转化为不同的语境。每当我们试图将新笔记和旧笔记联系起来时，我们就会从滑箱中检索信息。就这样，我们混合语境，洗牌笔记，并以不规则的间隔检索信息。而在这个过程中，我们进一步阐述信息，我们总是刻意检索。

12.5 Use the Slip-Box as a Creativity Machine

12.5 把滑板箱当作创意机器。

“Creativity is just connecting things. When you ask creative people how they did something, they feel a little guilty because they didn’t really do it, they just saw something.” (Steve Jobs)

"创意就是把事情联系起来。当你问有创造力的人是如何做某件事的时候，他们会觉得有点内疚，因为他们并没有真正做，只是看到了一些东西。" (史蒂夫-乔布斯)

Many exciting stories from scientific history make us believe that great insight comes in a flash. There is the sudden insight of Watson and Crick that DNA would have to have the form of a double helix or the story of Friedrich August Kekulé, who allegedly dreamed of a snake biting its own tail and suddenly saw the structure of benzene in front of his eyes.

科学史上许多激动人心的故事让我们相信，伟大的洞察力是在一瞬间出现的。有沃森和克里克的突然洞察，认为DNA必须有双螺旋的形式，也有弗

里德里希–奥古斯特–凯库莱的故事，据说他梦见一条蛇咬住自己的尾巴，突然在眼前看到了苯的结构。

But the reason why Watson and Crick or Kekulé had these insights and not a random person on the street is that they already had spent a very long time thinking hard about the problems, tinkered with other possible solutions and tried countless other ways of looking at the problem. Our fascination with these stories clouds the fact that all good ideas need time. Even sudden breakthroughs are usually preceded by a long, intense process of preparation.

但是，沃森和克里克或者凯库雷之所以有这些见解，而不是大街上随便一个人，是因为他们已经花了很长的时间去认真思考问题，修饰了其他可能的解决方案，并尝试了无数其他看问题的方法。我们对这些故事的迷恋掩盖了一个事实：所有好的想法都需要时间。即使是突如其来的突破，之前通常也有一个漫长而紧张的准备过程。

Being experienced with a problem and intimately familiar with the tools and devices we work with, ideally to the point of virtuosity, is the precondition for discovering their inherent possibilities, writes Ludwik Fleck, a historian of science (Fleck 2012, 126). This is true even for purely theoretical work. Here, too, we need experience until we can “feel our way” around the problems and questions we deal with, even if these things are words, concepts and notes in a file system. What we learn in practice is always much more thorough and complex than what we could put into words. That is why even purely theoretical work cannot be reduced to explicit knowledge, which is consciously available. This is especially true for the use of a slip–box. It is the intuition that comes from the intimate knowledge of a practice that can lead us to new insights. We might not be able to explicitly state why it is more promising to follow one idea instead of another, but being experienced, we somehow know — which is enough. Experimental scientists regularly describe their decision– making process as being based on intuition (Rheinberger 1997), and there is no reason why it should be different in the social

sciences. Maybe it is just harder to accept in the social sciences as we try so hard to be more like natural scientists, who seem to do without something as vague as intuition. But intuition is not the opposition to rationality and knowledge, it is rather the incorporated, practical side of our intellectual endeavours, the sedimented experience on which we build our conscious, explicit knowledge (cf. Ahrens 2014).

科学史学家Ludwik Fleck写道："对一个问题有经验，对我们使用的工具和设备非常熟悉，最好是达到熟练的程度，这是发现其内在可能性的先决条件（Fleck 2012，126）。即使对于纯理论性的工作也是如此。在这里，我们也需要经验，直到我们能够 "摸索 "出我们处理的问题和疑问，即使这些东西是文件系统中的文字、概念和笔记。我们在实践中所学到的东西，总是比我们能用语言表达的东西要透彻和复杂得多。这就是为什么即使是纯理论性的工作也不能归结为显性知识，而显性知识是可以自觉获得的。对于滑箱的使用更是如此。正是由于对实践的深入了解而产生的直觉，可以使我们获得新的见解。我们可能无法明确说明为什么遵循一种想法而不是另一种想法更有前途，但被体验过后，我们以某种方式知道--这就足够了。实验科学家经常把他们的决策过程描述为基于直觉（Rheinberger，1997），而在社会科学中，没有理由会有所不同。也许它只是在社会科学中更难被接受，因为我们如此努力地想变得更像自然科学家，而自然科学家似乎可以不用直觉这样模糊的东西。但直觉并不是理性和知识的对立面，而是我们知识性努力中被纳入的、实践的一面，是我们建立在有意识的、明确的知识基础上的沉淀经验（参见Ahrens 2014）。

Steven Johnson, who wrote an insightful book about how people in science and in general come up with genuine new ideas, calls it the “slow hunch.” As a precondition to make use of this intuition, he emphasises the importance of experimental spaces where ideas can freely mingle (Johnson 2011). A laboratory with open-minded colleagues can be such a space, much as intellectuals and artists freely discussed ideas in the cafés of old Paris. I would add the slip-box as such a space in which ideas can mingle freely, so they can give birth to new ones.

史蒂文-约翰逊（Steven Johnson）写了一本关于科学界和一般人如何提出真正的新想法的书，他把它称为 "缓慢的直觉"。作为利用这种直觉的前提条件，他强调了实验空间的重要性，在这里，各种想法可以自由交融（Johnson，2011）。一个拥有思想开放的同事的实验室可以是这样的空间，就像知识分子和艺术家在旧巴黎的咖啡馆里自由讨论思想一样。我还想说，滑箱也是这样一个空间，思想可以在其中自由交融，从而产生新的思想。

Most often, innovation is not the result of a sudden moment of realization, anyway, but incremental steps toward improvement. Even groundbreaking paradigm shifts are most often the consequence of many small moves in the right direction instead of one big idea. This is why the search for small differences is key. It is such an important skill to see differences between seemingly similar concepts, or connections between seemingly different ideas. This even used to be the meaning of the word “new.” “Novus,” in Latin, used to mean “different,” “unusual,” not so much “genuinely new” in the meaning of “unheard” (Luhmann, 2005, 210). To have concrete notes in front of our eyes and be able to compare them directly makes differences, even small ones, much easier to spot. (This is an advantage of the original paper slip-box, as you can spread out multiple notes on a desk instead of just seeing them on a computer screen.) The neurobiologist James Zull points out that comparing is our natural form of perception, where our cognitive interpretation is in lockstep with our actual eye movements. Therefore, comparing should be understood quite literally.

大多数情况下，创新并不是突然间意识到的结果，而是逐步改进的结果。即使是突破性的范式转变，也往往是在正确的方向上采取许多小动作的结果，而不是一个大创意。这就是为什么寻找小的差异是关键。看到看似相似的概念之间的差异，或者看似不同的想法之间的联系，是一项如此重要的技能。这甚至曾经是 "新 "字的含义。"Novus"，在拉丁文中，过去的意思是 "不同的"、"不寻常的"，而不是 "闻所未闻 "的 "真正的新 "的意思（Luhmann，2005，210）。如果有具体的注解在我们眼前，并能直接进行比较，那么即使是很小的差异，也更容易被发现。这也是最初的纸条

箱的一个优点，因为你可以在桌子上摊开多个笔记，而不是只在电脑屏幕上看到它们）。神经生物学家James Zull指出，_比较_是我们自然的感知形式，我们的认知解释与我们实际的眼球运动是同步的。因此，比较应该从字面上理解。

We even compare when we focus on one thing: “Paying attention does not mean unrelenting attention on one focal point. Our brains evolved to notice details by shifting focus from one area to another, by repeatedly scanning the surroundings. [...] The brain is more likely to notice details when it scans than when it focuses.” (Zull 2002, 142f) This is one of the reasons why thinking works so much better when we have the very things we think about in front of our eyes. It is in our nature.

当我们专注于一件事情时，我们甚至会进行比较："注意并不意味着不间断地关注一个焦点。我们的大脑进化到通过将焦点从一个区域转移到另一个区域，通过反复扫描周围的环境来注意细节。[.....]大脑在扫描时比聚焦时更容易注意到细节"。(Zull 2002，142f)这也是为什么当我们眼前有我们所思考的事物时，思维效果会好得多的原因之一。这是我们的天性。

12.6 Think Inside the Box

12.6 Think Inside the Box.

“[C]reative people are better at recognizing relationships, making associations and connections and seeing things in an original way—seeing things that others cannot see“ (Andreasen 2014).

"有创造力的人更善于识别关系、建立联想和联系，并以一种独创的方式看待事物--看到别人看不到的东西"（Andreasen，2014）。

Comparing, differentiating and connecting notes are the basis of good academic writing, but playing and tinkering with ideas is what leads to insight and exceptional texts.

比较、区分和连接笔记是写好学术文章的基础，但玩转和修饰思想才是产生洞察力和卓越文章的关键。

To be able to play with ideas, we first have to liberate them from their original context by means of abstraction and re-specification. We did this when we took literature notes and translated them into the different contexts within the slip-box. Abstraction does not have a good reputation at the moment. It is the tangible, the concrete that is cheered for. Abstraction should indeed not be the final goal of thinking, but it is a necessary in- between step to make heterogeneous ideas compatible. If Darwin had never abstracted from his concrete observations of sparrows, he would never have found an abstract, a general principle of evolution across different species, and he would never have been able to see how evolution works in other species as well. Abstraction is also not for theoretical-academic processes of insight only. We need to abstract from concrete situations every day. Only by abstraction and re-specification can we apply ideas in the singular and always different situations in reality (Loewenstein, 2010).

要想玩转思想，我们首先要通过抽象和再具体化的手段，把思想从原来的语境中解放出来。我们在做文学笔记的时候，就把它们翻译成滑箱内的不同语境。抽象在当下并没有一个好的名声。有形的、具体的才会被欢呼。抽象的确不应该是思维的最终目标，但它是使异质思想兼容的必要中间步骤。如果达尔文从来没有从对麻雀的具体观察中抽象出来，他永远也不会找到一个抽象的、不同物种之间进化的一般原理，他也永远无法看到其他物种的进化是如何进行的。抽象也不是只适用于理论学术的洞察过程。我们每天都需要从具体的情况中抽象出来。只有通过抽象和再具体化，我们才能在现实中单一的、总是不同的情境中应用思想（Loewenstein, 2010）。

Even very personal, intimate experiences, like encounters with art, require abstraction. If the story of Romeo and Juliet touches us, it is certainly not because we are all members of one of two feuding families in Verona. We abstract from time and place, from the

particular circumstances until we can meet the protagonists of this story on a general level where our own emotional life can resonate with what we see on stage. The tendency to juxtapose abstraction with being worldly or to associate it with intellectualism and juxtapose it with being solution-orientated is very misleading indeed.

即使是非常个人化的亲密体验，比如与艺术的相遇，也需要抽象化。如果说《罗密欧与朱丽叶》的故事触动了我们，那肯定不是因为我们都是维罗纳两个争斗家族中的一员。我们从时间和地点，从特殊的环境中抽象出来，直到我们能在一般的层面上与这个故事的主人公相遇，我们自己的情感生活能与我们在舞台上看到的东西产生共鸣。把抽象与世故并列，或者把抽象与知识主义联系起来，把抽象与以解决问题为导向并列，这种倾向确实是非常误导人的。

Studies on creativity with engineers show that the ability to find not only creative, but functional and working solutions for technical problems is equal to the ability to make abstractions. The better an engineer is at abstracting from a specific problem, the better and more pragmatic his solutions will be — even for the very problem he abstracted from (Gassmann and Zeschky, 2008, 103). Abstraction is also the key to analyse and compare concepts, to make analogies and to combine ideas; this is especially true when it comes to interdisciplinary work (Goldstone and Wilensky 2008).

对工程师创造力的研究表明，为技术问题找到不仅是创造性的，而且是功能性的、行之有效的解决方案的能力与抽象能力是相等的。工程师对具体问题的抽象能力越强，他的解决方案就会越好，越实用--甚至对他抽象出来的问题也是如此（Gassmann和Zeschky，2008，103）。抽象也是分析和比较概念、进行类比和结合思想的关键；在涉及跨学科工作时尤其如此（Goldstone和Wilensky，2008）。

Being able to abstract and re-specify ideas is, again, only one side of the equation. It is not good for anything if we don't have a system in place that allows us to put this into practice. Here, it is

the concrete standardization of notes in just one format that enables us to literally shuffle them around, to add one idea to multiple contexts and to compare and combine them in a creative way without losing sight of what they truly contain.

能够对观念进行抽象和再具体化，又只是一方面。如果我们没有一个系统来让我们把这些付诸实践，那是没有任何好处的。在这里，正是由于只用一种格式对笔记进行了具体的标准化处理，才使我们能够真正地对笔记进行洗牌，将一种思想添加到多种语境中，并以一种创造性的方式进行比较和组合，而不至于忽略笔记真正包含的内容。

Creativity cannot be taught like a rule or approached like a plan. But we can make sure that our working environment allows us to be creative with ideas. It also helps to keep in mind some creativity–inducing ideas about problem– solving that might be counterintuitive. It is worth it to dwell on this subject a little bit before we move on to the next step: the preparation of the rough draft of the manuscript.

创造性不能像规则一样教，也不能像计划一样处理。但我们可以确保我们的工作环境允许我们有创造性的想法。牢记一些关于解决问题的、可能是反直觉的、诱发创造力的想法也是有帮助的。在我们进入下一步：准备稿件的初稿之前，值得我们在这个问题上稍微纠结一下。

The real enemy of independent thinking is not an external authority, but our own inertia. The ability to generate new ideas has more to do with breaking with old habits of thinking than with coming up with as many ideas as possible. For obvious reasons, I do not recommend “thinking outside the box”. On the contrary, we can turn the slip–box into a tool for breaking out of our own thinking habits.

独立思考的真正敌人不是外在的权威，而是我们自己的惰性。能否产生新的想法，更多的是与打破旧的思维习惯有关，而不是想出尽可能多的想法。出于显而易见的原因，我不建议 "跳出框框"。相反，我们可以把滑箱变成打破自己思维习惯的工具。

Our brains just love routines. Before new information prompts our brains to think differently about something, they make the new information fit into the known or let it disappear completely from our perception. Usually, we don't even notice when our brains modify our surroundings to make it fit its expectations. We need therefore a bit of a ruse to break the power of thinking routines. In their book with the showy title "The 5 Elements of Effective Thinking", the mathematicians Edward B. Burger and Michael Starbird collected different strategies to do that (2012). Some are already technically implemented in the slip-box, others are good to keep in mind.

我们的大脑就是喜欢例行公事。在新的信息促使我们的大脑对某件事情进行不同的思考之前，它们会让新的信息适应已知的信息，或者让它从我们的认知中完全消失。通常情况下，当我们的大脑修改周围的环境，使之符合它的期望时，我们甚至没有注意到。因此，我们需要一点诡计来打破思维常规的力量。数学家爱德华-B-伯格和迈克尔-斯塔伯德在他们的书中以 "有效思维的5个要素 "为炫耀的标题，收集了不同的策略来做到这一点（2012）。有些已经在技术上实现了滑箱，有些则是很好的记在心里。

For example, they emphasise the importance of feedback loops and the need to find ways to confront ourselves with our errors, mistakes and misunderstandings. This is a built-in feature of the slip-box. Another habit of the effective thinkers they highlight is their ability to focus on the main ideas behind the details, to grasp the gist of something. This, too, is something the slip-box nudges us to do.

例如，他们强调了反馈循环的重要性，以及需要找到面对自己的错误、错误和误解的方法。这也是滑箱的一个内在功能。他们所强调的高效思维者的另一个习惯是，他们能够专注于细节背后的主旨，抓住某件事情的要害。这一点，也是滑箱提示我们要做到的。

Another piece of advice is not a feature of the slip-box and might sound banal, but it is crucial: Make sure that you really see what you think you see and describe it as plainly and factually as possible.

Double-check if necessary. That this isn't as obvious as it sounds will become clearer by the fact that the ability to truly see what is in front of one's eyes is often listed as a trait of experts. And that is easily explained by the fact that our perception does not follow the order of seeing first and interpreting second. It does both at the same time: We always perceive something as something – our interpretation is instantaneous. This is why we have so much trouble not falling for an optical illusion: If we look at a three-dimensional drawing, we cannot see it just as an arrangement of lines and shapes – unless we are highly trained to do so. We don't even notice objectively missing parts in our perception, like the blind spot in the middle of everything we see. We need a trick to see what we don't see. As we always immediately see a whole picture of something, everything else, including the reinterpretation of it or the detection of missing bits, is a step that follows.

另一个建议不是滑板箱的特色，可能听起来很平庸，但却至关重要。确保你真的看到了你认为你看到的东西 并尽可能地平实地描述它。如果有必要的话，要反复检查。这一点并不像听起来那么明显，事实上，真正看到眼前的东西的能力经常被列为专家的特质，这一点将变得更加清晰。而这很容易解释，我们的感知并不遵循先看后解的顺序。它同时做到了这两点。我们总是把某样东西看成某样东西 我们的解释是瞬间的。这就是为什么我们有这么多的麻烦，不被光学错觉所欺骗。如果我们看一张三维的图画，我们不可能只看到它是线条和形状的排列--除非我们受过高度的训练。我们甚至不会注意到感知中客观存在的缺失部分，比如我们看到的一切中间的盲点。我们需要一个技巧来看到我们没有看到的东西。由于我们总是立即看到一个事物的全貌，所以其他的一切，包括对它的重新解释或对缺失部分的检测，都是一个_后续的步骤。

The same is true when we read: We don't see lines on a paper first, then realise that these are words, then use them to build sentences and finally decipher the meaning. We immediately read on the level of meaningful understanding. To really understand a text is therefore a constant revision of our first interpretation. We have to train ourselves to get used to seeing this difference and to hold back our

ingrained urge to jump to conclusions. To be able to see what we see instead of what we expect to see is indeed a skill in itself, not like a character trait of being “open- minded.” Those who think of themselves as being open-minded are often even more prone to stick to their first understanding as they believe to be without natural prejudices and therefore don’t see the need to counterbalance them. If we think we can “hold back” an interpretation, we are fooling ourselves.

当我们阅读时也是如此。我们不会先看到纸上的线条，然后意识到这些是文字，然后用它们来造句，最后解读其含义。我们立即在意义理解的层面上进行阅读。因此，要想_真正理解一篇文章，就要不断地_修正我们的第一次解读。我们必须训练自己习惯于看到这种差异，并忍住我们根深蒂固的下结论的冲动。能够看到我们所看到的东西，而不是我们_期望看到的东西，这本身确实是一种技能，而不像 "心胸开阔 "这种性格特征。那些自认为心胸开阔的人，往往更容易坚持自己的第一理解，因为他们认为自己没有天然的偏见，因此不认为有必要去反驳这些偏见。如果我们认为自己可以 "憋 "出一个解释，那就是自欺欺人。

While the constant comparison of notes can help us to detect differences, no technique can help us see what is missing. But we can make it a habit to always ask what is not in the picture, but could be relevant. This, too, does not come naturally to us.

虽然不断地比较音符可以帮助我们发现差异，但任何技术都不能帮助我们看到缺失的东西。但是，我们可以养成一个习惯，时刻询问画面中没有的，但可能是相关的东西。这一点，对我们来说也是不自然的。

One of the most famous figures to illustrate this skill is the mathematician Abraham Wald (Mangel and Samaniego 1984). During World War II, he was asked to help the Royal Air Force find the areas on their planes that were most often hit by bullets so they could cover them with more armour. But instead of counting the bullet holes on the returned planes, he recommended armouring the spots where none of the planes had taken any hits. The RAF forgot

to take into account what was not there to see: All the planes that didn't make it back.

数学家亚伯拉罕-瓦尔德(Abraham Wald)是说明这种技巧的最著名的人物之一(Mangel and Samaniego 1984)。在第二次世界大战期间，他被要求帮助英国皇家空军找到飞机上最常被子弹击中的区域，以便他们能用更多的装甲覆盖它们。但他没有统计返航飞机上的弹孔，而是建议在飞机都没有被击中的地方加装装甲。皇家空军忘记了考虑到没有看到的东西。所有没能回来的飞机.

The RAF fell for a common error in thinking called survivorship bias (Taleb 2005). The other planes didn't make it back because they were hit where they should have had extra protection, like the fuel tank. The returning planes could only show what was less relevant.

皇家空军陷入了一个常见的思维错误，称为幸存者偏差（Taleb 2005）。其他飞机没能回来，是因为它们被击中了应该有额外保护的地方，比如油箱。回来的飞机只能显示出不太相关的东西。

Product developers make the same mistake on such a regular basis, one has to wonder if they do it on purpose. As marketing expert Robert McMath assembled the biggest-ever collection of supermarket products, he realised midway it was becoming almost exclusively a collection of failed products because they make up the vast majority of all products ever produced. He thought a museum would be a great place for product developers to see what already proved not to work so they didn't have to repeat the same mistake. Alas, rarely does a product developer show any interest in learning from the experience of others. Often, companies don't even keep track of their own failed attempts, providing McMath with whole series in which one kind of mistake was made in multiple variations, sometimes from each generation of developers in the same company (McMath and Forbes 1999).

产品开发人员经常犯同样的错误，让人不得不怀疑他们是不是故意的。当营销专家罗伯特-麦克马思在收集有史以来最大的超市产品时，他中途意识到这几乎成了失败产品的集合，因为它们占了有史以来所有产品的绝大多数。他认为建立一个博物馆将是一个很好的地方，让产品开发人员看到已经被证明行不通的东西，这样他们就不用再重蹈覆辙了。唉，很少有产品开发人员表现出学习他人经验的兴趣。通常情况下，公司甚至不跟踪自己的失败尝试，为McMath提供了整个系列，在这些系列中，一种错误有多种变化，有时来自同一公司的每一代开发人员（McMath和Forbes 1999）。

In his beautifully titled book “The Antidote: Happiness for People Who Can’t Stand Positive Thinking,” Oliver Burkeman describes how much our culture is focused on success and how we neglect the important lessons from failure (Burkeman 2013). Manager biographies are a good example: Even though all of them contain some anecdotes about setbacks, these are always embedded in a bigger story about success (failed managers unfortunately rarely write biographies). If we try to extract a lesson from all these books, we might end up believing that persistence and charisma are paramount for success, even though these are exactly the same ingredients needed to screw a project up big time (Burkeman is referring to Jerker Denrell here). Obviously, the same is true in research: It is very good to know what has already proven to not work if we try to come up with new ideas that do work.

在他那本标题优美的《解药》一书中。忍受不了积极思维的人的幸福》中，奥利弗-伯克曼描述了我们的文化是如何关注成功，以及我们是如何忽视失败中的重要教训的（伯克曼，2013）。经理人传记就是一个很好的例子。尽管所有的传记都包含一些关于挫折的轶事，但这些总是嵌入在一个更大的成功故事中（不幸的是，失败的经理人很少写传记）。如果我们试图从所有这些书中提取一个教训，我们可能最终会相信，坚持和魅力是成功的首要条件，尽管这些正是把一个项目搞得一团糟所需要的相同要素（伯克曼在这里指的是杰克-德雷尔）。显然，在研究中也是如此。如果我们想提出可行的新想法，知道什么已经被证明是行不通的是非常好的。

One possibility to deal with this tendency is to ask counterfactual questions, like “what if?” (Markman, Lindberg, Kray and Galinsky, 2007). It is easier to learn about the function of money in a society if we wonder how strangers would exchange goods without using money than if we just focus on the obvious problems we have in a society based on money exchange. Sometimes, it is more important to rediscover the problems for which we already have a solution than to think solely about the problems that are present to us.

处理这种倾向的一种可能性是提出反事实问题，比如 "如果"? (Markman, Lindberg, Kray and Galinsky, 2007)。如果我们想知道在不使用货币的情况下，陌生人会如何交换商品，这比我们只关注基于货币交换的社会中存在的明显问题更容易了解货币在社会中的功能。有时候，重新发现那些我们已经有解决方法的问题，比单纯思考存在于我们身边的问题更重要。

Problems rarely get solved directly, anyway. Most often, the crucial step forward is to redefine the problem in such a way that an already existing solution can be employed. The first question should always be directed towards the question itself: What kind of answer can you expect from asking a question in this particular way? What is missing?

反正问题很少能直接得到解决。大多数情况下，前进的关键一步是重新定义问题，使已有的解决方案能够得到运用。第一个问题总是应该针对问题本身。以这种特殊的方式提出问题，你能期望得到什么样的答案？缺少了什么?

Another seemingly banal tip relates to a distinguishing feature of extraordinary thinkers: Taking simple ideas seriously. Consider, for example, the idea of buying stocks low and selling them high. I am sure everyone can grasp that idea. But grasping an idea is not the same as understanding it. If you go and buy stocks on that “insight,” all you can do is to hope that a stock goes up after you

buy it, which makes this knowledge about as useful as the tip on the next colour to choose on a roulette table.

另一个看似平淡无奇的小技巧与非凡思想家的一个显著特征有关。认真对待简单的想法。比如考虑一下，低价买入股票，高价卖出股票的想法。我相信每个人都能把握这个想法。但是，掌握了一个想法并不等于理解了它。如果你凭着这个 "见解 "去买股票，你能做的就是希望买入股票后股票会上涨，这就使得这个知识和轮盘赌桌上选择下一种颜色的提示一样有用。

The next level of understanding is reached when you realise what you buy if you buy a stock: a part of a company. Nobody would sign a contract for a house and believe it is the contract he owns now. But many people treat a stock exactly like this. They don't really think about what they get for the price they pay: they just assume they made a good deal when the price is lower than the day before. But the only thing Warren Buffett thinks about it is the relationship between price and value — he doesn't even look at the price from yesterday. He understands that simple is not the same as easy, and that the worst thing you can do is to make a simple task unnecessarily complicated. A stock is a share in a company. The price is set by the market, which means by supply and demand, which touches on the rationality of market participants as well as the question of valuation, which means you have to understand something about the business you are considering investing in, including competition, competitive advantages, technological developments, etc.

当你意识到如果你买了一只股票，你买的是什么：公司的一部分，就达到了下一个层次的理解。没有人会在房子的合同上签字，并相信这是他现在拥有的合同。但很多人对待一只股票完全是这样的。他们并不真正考虑他们付出的代价得到了什么：当价格比前一天低时，他们只是认为自己做了一笔好买卖。但巴菲特唯一考虑的是价格和价值之间的关系--他甚至不看昨天的价格。他明白，简单不等于容易，最糟糕的事情就是把一件简单的事情不必要地复杂化。股票是一家公司的股份。价格是由市场决定的，

也就是由供求关系决定的，这就触及到市场参与者的理性以及估值的问题，也就是说你要对你考虑投资的企业有所了解，包括竞争、竞争优势、技术发展等。

Making things more complicated than they are can be a way to avoid the underlying complexity of simple ideas. This is what happened during the financial crisis of 2008: Economists developed hugely complicated products, but did not take into account the simple fact that price and value are not necessarily the same. There is a reason why Buffett is not only a great investor, but also a great teacher: He not only has a vast knowledge about everything related to business, he can also explain it all in simple terms.

把事情搞得比实际情况更复杂，可能是避免简单想法的潜在复杂性的一种方式。这就是2008年金融危机期间发生的事情。经济学家们开发了非常复杂的产品 却没有考虑到一个简单的事实 那就是价格和价值并不一定是一样的。巴菲特不仅是一位伟大的投资者，也是一位伟大的老师，这是有原因的：他不仅对与商业有关的一切都有丰富的知识，还能用简单的语言解释这一切。

Sometimes the breakthrough in a scientific process is the discovery of a simple principle behind a seemingly very complicated process. Burger and Starbird remind us of the long history of human attempts to fly: We tried to emulate birds by flapping wing-like apparatuses with feathers and all, but in the end, it was about not getting distracted by details and discovering that the subtle bending of the wing is the only thing that counts.

有时候，一个科学过程的突破，就是在一个看似非常复杂的过程背后发现了一个简单的原理。汉堡和星鸟让我们想起了人类尝试飞行的悠久历史。我们试图模仿鸟类，用羽毛和所有的翅膀扇动类似的装置， 但最终，它是关于不被细节所干扰，发现翅膀的微妙弯曲是唯一重要的事情。

Simple ideas can be tied together into consistent theories and build up enormous complexity. This just doesn't work with complicated

ideas. By using the slip-box on a daily basis, we train these important intellectual skills deliberately: We check if what we understood from a text is really in the text by having our understanding in written form in front of our eyes. We learn to focus on the gist of an idea by restricting ourselves in terms of space. We can make it a habit to always think about what is missing when we write down our own ideas. And we can practice asking good questions when we sort our notes into the slip-box and connect them with other notes.

简单的想法可以串联成一致的理论，建立起巨大的复杂性。这在复杂的想法中是行不通的。通过每天使用滑箱，我们刻意训练这些重要的知识技能。我们检查我们从文本中理解到的东西是否真的在文本中 通过让我们的理解以书面形式呈现在我们的眼前 我们通过限制自己的空间，学会专注于思想的要点。我们可以养成一个习惯，当我们写下自己的想法时，总要想一想缺少了什么。而且我们可以在把自己的笔记整理到便签箱中，并与其他笔记联系起来的时候，练习提出好的问题。

12.7 Facilitate Creativity through Restrictions

12.7 通过限制促进创意。

The slip-box imposes quite a few restrictions on its user. Instead of having the choice between all kinds of fancy notebooks, papers or writing formats, or being able to employ the whole range of productivity tools available for note- taking, learning and academic or nonfiction writing, everything is reduced to a single plain-text format and collected in a single simple slip-box system with no frills or features. Even the computer program basically just emulates a wooden box filled with plain, consecutively numbered paper. And even though the digital program lifts the physical restrictions on the length of a note, I highly recommend treating a digital note as if the space were limited. By restricting ourselves to one format, we also restrict ourselves to just one idea per note and force ourselves to be as precise and brief as possible. The restriction to one idea per note

is also the precondition to recombine them freely later. Luhmann choose notes in the format A6. A good rule of thumb for working with the program is: Each note should fit onto the screen and there should be no need of scrolling.

滑盖箱给用户带来了不少限制。它不需要在各种花哨的笔记本、纸张或书写格式之间进行选择，也不需要使用所有可用的记事、学习和学术或非小说写作的生产力工具，而是将所有的东西都简化为单一的纯文本格式，并收集在一个简单的滑盖箱系统中，没有任何装饰或功能。即使是电脑程序，基本上也只是模拟一个木箱，里面装满了普通的、连续编号的纸张。而即使数字程序解除了物理上对便签长度的限制，我还是强烈建议把数字便签当成空间有限的东西来对待。我们限制了自己的一种格式，也就限制了自己每张纸条只能有一个想法，迫使自己尽可能的精确和简短。每个音符限制一个想法，也是以后自由重新组合的前提。Luhmann选择A6格式的音符。一个好的工作经验法则是。每一个笔记都应该适合在屏幕上，而且不需要滚动。

Standardised is also the way we treat literature and our own thoughts: Instead of using different kinds of notes or techniques for different kinds of texts or ideas, the approach here is always the same, simple one. Literature is condensed on a note saying, “On page x, it says y,” and later stored with the reference in one place. Ideas and thoughts are captured on the slip-box notes and connected to other notes always in the same way in the same place. These standardizations make it possible that the technical side of note-taking can become automatic. Not having to think about the organisation is really good news for brains like ours — the few mental resources we have available, we need for thinking about the actual relevant questions: those concerning the contents.

标准化也是我们对待文献和自己思想的方式。不是用不同的笔记或技巧来处理不同类型的文本或思想，这里的方法总是一样的，简单的。文献被浓缩在一张纸条上，说："在x页上，它说的是y"，之后和参考文献一起储存在一个地方。思想和思路被记录在便签上，并与其他笔记总是以同样的方式连接在同一个地方。这些标准化使得记笔记的技术层面可以变得自动。

对于我们这样的大脑来说，不需要考虑组织的问题是个好消息--我们仅有的几个精神资源，需要用来思考实际相关的问题：那些关于内容的问题。

This kind of self-imposed restriction is counterintuitive in a culture where more choice is usually regarded as a good thing and more tools to choose from seen as better than having less at hand. But not having to make decisions can be quite liberating. In his book "The Paradox of Choice," Barry Schwartz used numerous examples, from shopping to career options to romance, to show that less choice can not only increase our productivity, but also our freedom and make it easier to be in the moment and enjoy it (Schwartz, 2007). Not having to make choices can unleash a lot of potential, which would otherwise be wasted on making these choices. Academic writing should definitely be added to Schwartz' list of examples in which less choice is better.

在一个文化中，这种自我限制是违反直觉的，因为在这个文化中，更多的选择通常被认为是一件好事，更多的工具被视为比手头的工具少更好。但是，不用做决定可能是相当自由的。在他的《选择的悖论》一书中，巴里-施瓦茨用了大量的例子，从购物到职业选择再到恋爱，来说明减少选择不仅可以提高我们的生产力，还可以提高我们的自由度，让我们更容易融入当下，享受当下（施瓦茨，2007）。不用做选择可以释放出很多潜能，否则这些潜能就会浪费在做这些选择上。学术写作绝对应该被添加到施瓦茨的例子列表中，选择越少越好。

The formal standardization of the slip-box might seem to be at odds with our search for creativity. But here, too, it is more likely the opposite is true. Thinking and creativity can flourish under restricted conditions and there are plenty of studies to back that claim (cf. Stokes 2001; Rheinberger 1997). The scientific revolution started with the standardization and controlling of experiments, which made them comparable and repeatable (cf. Shapin, 1996). Or think of poetry: It imposes restrictions in terms of rhythm, syllables or rhymes. Haikus give the poet very little room for formal variations,

but that doesn’t mean they are equally limited in terms of poetic expressiveness. On the contrary: It is the strict formalism that allows them to transcend time and culture.

滑箱的形式标准化似乎与我们对创造力的追求不一致。但在这里，更有可能的是，情况恰恰相反。在受限的条件下，思维和创造力可以蓬勃发展，而且有很多研究支持这一说法（参见Stokes 2001；Rheinberger 1997）。科学革命始于实验的标准化和控制，这使得实验具有可比性和可重复性（参见Shapin，1996）。或者想想诗歌。它在节奏、音节或韵律方面施加了限制。俳句给诗人在形式上的变化空间很小，但这并不意味着它们在诗歌表现力方面同样受到限制。恰恰相反。是严格的形式主义使它们能够超越时间和文化的限制。

Language in itself is extremely standardised and limited in many ways. We are restricted to the use of only 26 letters, but what that enables us to do! We can write novels, theories, love letters or court orders — just by rearranging these 26 letters. This is certainly not possible despite the restriction to 26 letters, but because of it. Nobody will open a book and wish it contains more types of letters or be disappointed because it is, again, just another variation of the same alphabet.[36]

语言本身是极其标准化的，在很多方面都受到限制。我们只能使用26个字母，但这使我们能够做什么呢! 我们可以写小说、理论、情书或法庭命令--只需将这26个字母重新排列。尽管有26个字母的限制，但这当然不是可能的，而是因为它。没有人会打开一本书，希望它包含更多类型的字母，也没有人会因为它只是同一字母表的另一种变化而失望。[36]

A clear structure allows us to explore the internal possibilities of something. Even the act of breaking with convention depends on it. The limitation of the canvas does not make the artistic expressions of painters seem limited, but opens up the possibility of an artist like Lucio Fontana to cut into the canvas instead of painting on it. It is not even true that a more complex structure provides more possibilities. Quite the contrary. The binary code is radically more

limited than the alphabet as it contains only two states, one or zero, but it opened up a range of creative possibilities that is unprecedented.

清晰的结构可以让我们探索某件事的内在可能性。即使是打破常规的行为也有赖于此。画布的局限性并没有让画家的艺术表达显得有限，而是为卢西奥-丰塔纳这样的艺术家提供了在画布上切割而不是在画布上作画的可能性。甚至并不是说更复杂的结构就能提供更多的可能性。恰恰相反。二进制代码从根本上说比字母表更有局限性，因为它只包含两种状态，一或零，但它开启了一系列前所未有的创造性可能性。

The biggest threat to creativity and scientific progress is therefore the opposite: a lack of structure and restrictions. Without structure, we cannot differentiate, compare or experiment with ideas. Without restrictions, we would never be forced to make the decision on what is worth pursuing and what is not. Indifference is the worst environment for insight. And the slip-box is, above all, a tool for enforcing distinctions, decisions and making differences visible. One thing is for sure: the common idea that we should liberate ourselves from any restrictions and “open ourselves up” to be more creative is very misleading indeed (Dean 2013, 201).

因此，对创造力和科学进步的最大威胁是相反的：缺乏结构和限制。没有结构，我们就无法对创意进行区分、比较或实验。没有限制，我们永远不会被迫做出决定，什么是值得追求的，什么是不值得追求的。冷漠_是洞察力的最坏环境。而滑板箱首先是一个执行区别、决定和使差异可见的工具。有一点是肯定的：我们应该把自己从任何限制中解放出来，"打开自己"，让自己更有创造力，这种常见的想法确实是非常误导人的（Dean 2013，201）。

13 Share Your Insight

＃13分享你的见解

“Writing itself makes you realise where there are holes in things. I’m never sure what I think until I see what I write. And so I believe that, even though you’re an optimist, the analysis part of you kicks in when you sit down to construct a story or a paragraph or a sentence. You think, ‘Oh, that can’t be right.’ And you have to go back, and you have to rethink it all.” (Carol Loomis)[37]

"写作本身让你意识到事情的漏洞所在。在看到我写的东西之前，我永远不知道自己在想什么。所以我相信，即使你是个乐观主义者，当你坐下来构筑一个故事或一段或一句话时，你的分析部分就会启动。你会想，"哦，这不可能是正确的。你必须回去， 你必须重新思考这一切。" (Carol Loomis)[37]

Since writing is nothing more than the revision of a rough draft, which is nothing more than turning a series of notes into a continuous text, which are written on a day–to–day basis, connected and indexed in the slip–box, there is no need to worry about finding a topic to write about. Just look into your slip–box and see where clusters have been built up. These clusters are what caught your interest again and again, so you already know that you have found material to work with. Now you can spread out these notes on your desktop or use the outliner of the Zettelkasten, outline your argument and construct a preliminary order of sections, chapters or paragraphs. This will make questions, which are not answered, obvious, and it will show the gaps in the argument that need to be filled and make visible which parts still need some work.

因为写作不过是对草稿的修改，无非是把一连串的笔记变成连续的文字，这些笔记每天都在写，并在便签箱中连接和索引，所以不用担心找不到主题来写。只要看看你的便签箱，看看哪里已经建立了群组。这些集群是一次又一次引起你兴趣的，所以你已经知道你已经找到了可以利用的材料。现在，你可以把这些笔记摊开在桌面上，或者用泽特卡顿的提纲，勾勒出你的论点，并初步构建出节、章或段的顺序。这将使没有得到答案的问题变得明显，它将显示出论点中需要填补的空白，并让人看到哪些部分还需要做些工作。

The perspective changes another time: Now, it is not about understanding something in the context of another author's argument, and it is also not about looking for multiple connections in the slip-box, but about developing one argument and bringing it into the linearity of a manuscript. Instead of widening the perspective to find as many possible lines of thought to which an idea might contribute, it is now about narrowing the perspective, making a decision on one topic only and cutting out everything that does not directly contribute to the development of the text and support the main argument.

角度又变了。现在，不是从另一个作者的论点中去理解某件事情，也不是在滑箱中寻找多种联系，而是发展一个论点，把它带入稿件的线性中。现在不是拓宽视野，尽可能多地寻找一个观点可能贡献的思路，而是缩小视野，只就一个主题做决定，把一切对文章发展没有直接贡献、不能支持主要论点的东西都删掉。

13.1 From Brainstorming to Slip-box-Storming

13.1 从头脑风暴到滑箱风暴。

"Remember the lesson: 'An idea or a fact is not worth more merely because it is easily available to you.'" (Charles T. Munger)

"记住这个教训：'一种思想或事实并不仅仅因为你很容易得到它而更有价值'。"(查尔斯-芒格)

Whenever someone struggles with finding a good topic to write about, someone else will recommend brainstorming. It still has a modern sound to it, even though it was described in 1919 by Alex Osborn and introduced to a broader audience in 1958 in the book "Brainstorming: The Dynamic New Way to Create Successful Ideas" from Charles Hutchison Clark. For many people, it is still the best method to generate new ideas. I suggest to see it rather as an expression of an outdated fixation on the brain, which is mirrored in the fixation of our educational system to learn things by heart —

which means to think without external tools. Testing students for memorised knowledge does not give much indication about their understanding, and the fact that someone came up with a lot of ideas during a brainstorming session does not give much indication about their quality.

每当有人苦于找不到好的写作题材时，就会有人推荐头脑风暴。尽管它在1919年由亚历克斯-奥斯本（Alex Osborn）描述，并在1958年由查尔斯-哈奇森-克拉克（Charles Hutchison Clark）的《头脑风暴》（Brainstorming: "The Dynamic New Way to Create Successful Ideas" from Charles Hutchison Clark。对于很多人来说，它仍然是产生新想法的最佳方法。我建议把它看成是一种过时的固守大脑的表现，这反映在我们的教育体系中，就是固守着用心学习的东西--也就是不借助外部工具来思考。测试学生对知识的记忆并不能说明他们的理解能力，有人在头脑风暴中想出了很多点子，也不能说明他们的质量。

While we want to find topics that are important, interesting and can be dealt with using the material we have available, the brain prioritises ideas that are easily available in the moment. This, obviously, does not equal relevant. The brain more easily remembers information that it encountered recently, which has emotions attached to it and is lively, concrete or specific. Ideally, it rhymes as well (cf. Schacter, 2001; Schacter, Chiao and Mitchell, 2003). Everything that is rather abstract, vague, emotionally neutral or does not even sound good is far down on its list of priorities — not exactly the best criteria for an intellectual endeavour.

虽然我们希望找到重要的、有趣的、可以利用现有材料处理的话题，但大脑会优先考虑当下容易获得的想法。显然，这并不等于相关。大脑更容易记住最近遇到的信息，这些信息有情感附加在上面，是生动的、具体的或具体的。理想情况下，它也是押韵的（参见Schacter，2001；Schacter，Chiao and Mitchell，2003）。一切抽象的、模糊的、情感中立的、甚至听起来不顺耳的东西，在它的优先级列表中都被远远地排在了后面--这并不是智力工作的最佳标准。

It makes things worse that we tend to like our first ideas the best and are very reluctant to let go of them, irrespective of their actual relevance (Strack and Mussweiler 1997). And before you now wonder if it would be a good idea to overcome the limitations of brainstorming by assembling a group of friends to brainstorm together, forget it: More people in a brainstorming group usually come up with less good ideas and restrict themselves inadvertently to a narrower range of topics (Mullen, Johnson, and Salas 1991).[38]

更糟糕的是，我们往往最喜欢我们的第一个想法，而且非常不愿意放弃它们，不管它们是否有实际意义（Strack and Mussweiler 1997）。而在你现在想通过召集一群朋友一起头脑风暴来克服头脑风暴的局限性之前，算了吧。在头脑风暴小组中，更多的人通常会想出_少_好的想法，并在不经意间将自己限制在较窄的主题范围内（Mullen、Johnson和Salas 1991）。[38]

But finding the right topic to write about is mostly a problem for those who treated writing as a separate task from others, anyway — not for those of us who work with the slip-box. Those who rely on their brains will first ask themselves, then their supervisor: I read so much, but what should I write about? On the other hand, we who have already accompanied our studies by writing and collecting notes in a smart way simply don't have the need for brainstorming anymore. We can just look into our slip-box instead. If we had a good idea before (and it is certainly more likely that we will come up with a good idea over the course of several months rather than within a couple of minutes), it will be in there. It might even already have proved itself worthy of following up on, in which case it is already connected to supporting material. It is so much easier to see what worked than to predict what might work.

但是，找到合适的话题，多半是那些把写作当成与他人无关的任务的人的问题，反正我们这些用滑板箱工作的人是不会这样做的。那些靠脑子的人，会先问自己，再问上司。我读了这么多书，但我应该写些什么呢？另一方面，已经用聪明的方式书写和收集笔记来陪伴我们学习的我们，根本

没有必要再进行头脑风暴。我们可以直接查看我们的滑盖箱来代替。如果我们之前有一个好主意（当然，我们更有可能在几个月的时间里想出一个好主意，而不是在几分钟内想出一个好主意），它就会在里面。它甚至可能已经证明了自己值得跟进，在这种情况下，它已经被连接到支持性材料。看到什么工作比预测什么可能工作要容易得多。

We don't need to worry about the question of what to write about because we have answered the question already — many times on a daily basis. Every time we read something, we make a decision on what is worth writing down and what is not. Every time we make a permanent note, we also made a decision about the aspects of a text we regarded as relevant for our longer-term thinking and relevant for the development of our ideas. We constantly make explicit how ideas and information connect with each other and turn them into literal connections between our notes. By doing this, we develop visible clusters of ideas that are now ready to be turned into manuscripts.

我们不需要担心写什么的问题，因为我们已经回答了这个问题--每天都会回答很多次。每当我们读到一些东西时，我们就会决定哪些值得写下来，哪些不值得。每一次我们做永久的记录，我们也对文本中我们认为与我们的长期思考有关的方面和与我们的想法发展有关的方面做出了决定。我们不断明确思想和信息之间的联系，并把它们变成我们笔记之间的文字联系。通过这样做，我们形成了可见的思想群，现在已经可以变成稿件了。

The process is self-reinforcing. A visibly developed cluster attracts more ideas and provides more possible connections, which in return influence our choices on what to read and think further. They become signposts for our daily work and orient us to what is worth thinking about. Topics grow bottom up and gain traction along the way. As soon as the slip-box has grown a bit, we can replace our thoughts on what is interesting and what we think is relevant with a pragmatic look into the slip-box, where we can plainly see what

truly proved to be interesting and where we found material to work with.

这个过程是自我强化的。一个明显发展的思想群吸引了更多的想法，并提供了更多可能的联系，这反过来又影响了我们对进一步阅读和思考的选择。它们成为我们日常工作的路标，为我们指引值得思考的东西。话题自下而上地成长，并在途中获得牵引力。一旦滑箱成长了一些，我们就可以用务实的_看一看滑箱来取代我们对什么是有趣的、什么是我们认为相关的_想法，在这里，我们可以清楚地看到哪些东西真正被证明是有趣的，哪些地方我们找到了可以利用的材料。

It is the one decision in the beginning, to make writing the mean and the end of the whole intellectual endeavour, that changed the role of topic-finding completely. It is now less about finding a topic to write about and more about working on the questions we generated by writing.

正是一开始的一个决定，把写作作为整个智力工作的意义和终点，彻底改变了找题的作用。现在已经不是寻找话题来写了，而更多的是在我们通过_写作产生的问题上下功夫。

By generating questions in the course of our everyday work, we bring the law of large numbers on our side. The truth is that few questions are suitable to be answered within an article, a thesis or a book. Some are too broad, some are too narrow, some are impossible to answer with knowledge we can reasonably acquire, but for most, we just don't have the material to work with. Those who start with a plan and an idea about what to write will probably encounter that truth somewhere along the way. They then might be able to correct an unfortunate choice once or twice, but will have to stick with what they have chosen at one point, otherwise they will never finish their project.

通过在日常工作中产生问题，我们把大数法则带到了我们的身边。事实上，很少有问题适合在一篇文章、一篇论文或一本书中得到解答。有的太

宽泛，有的太狭窄，有的用我们能合理获取的知识是不可能回答的，但对大多数人来说，我们就是没有材料可做。那些一开始就有计划、有想法写什么的人，可能会在途中的某个地方遇到这个道理。他们就可能会纠正一两次不幸的选择，但在某一点上必须坚持自己所选择的东西，否则就永远无法完成自己的计划。

If we, on the other hand, let questions arise from the slip-box, we know that they are tried and tested among dozens or even hundreds of other possible questions. The vast majority of questions might have been answered quickly or disappeared as no notes were drawn to them, either because of a lack of interest or a lack of material. This is how evolution works: by trial and error, not planning.

另一方面，如果我们让问题从滑箱中产生，我们就知道这些问题是在几十个甚至几百个其他可能的问题中试过的。绝大多数问题可能很快就得到了答案，或者因为没有画出笔记，或者因为缺乏兴趣或缺乏材料而消失。这就是进化的过程：靠试错，而不是计划。

Good questions are in the sweet spot of being relevant and interesting, not too easy to answer but possible to tackle with material that is available or at least within our reach. When it comes to finding good questions, it is therefore not enough to think about it. We have to do something with an idea before we know enough about it to make a good judgement. We have to work, write, connect, differentiate, complement and elaborate on questions — but this is what we do when we take smart notes.

好的问题处于这样的甜蜜点：既相关又有趣，不太容易回答，但有可能用现有的材料或至少在我们的能力范围内解决。因此，说到找到好问题，光是想一想是不够的。在我们对一个想法有足够的了解并做出正确的判断之前，我们必须对它做一些事情。我们必须对问题进行工作、写作、连接、区分、补充和阐述--但这是我们在做智能笔记时要做的。

13.2 From Top Down to Bottom Up

13.2 From Top Down to Bottom Up。

Developing topics and questions from what we have has a huge advantage. The ideas we decide on are not taken out of thin air, but are already embedded in a content-rich context and come with material that we can use. Starting with what we have also comes with another, unexpected advantage: We become more open to new ideas.

从我们所拥有的东西中开发主题和问题有一个巨大的优势。我们决定的想法不是凭空而来，而是已经嵌入了内容丰富的情境中，并附带了我们可以使用的材料。从我们已有的东西入手，还具有另一个意想不到的优势。我们对新的想法变得更加开放。

It seems counterintuitive that we become more open to new ideas the more familiar we are with ideas we have already encountered, but historians of science will happily confirm this (Rheinberger 1997). It makes sense when you think about it: without intense elaboration on what we already know, we would have trouble seeing its limitations, what is missing or possibly wrong. Being intimately familiar with something enables us to be playful with it, to modify it, to spot new and different ideas without running the risk of merely repeating old ideas believing they are new. This is why it feels in the beginning that familiarity makes it harder to come up with new ideas. We just didn't know that most of the ideas we had are actually not that innovative. But while the belief in our own ingenuity decreases with expertise, we become more able to actually make a genuine new contribution.

我们对已经遇到的思想越熟悉，就越能接受新的思想，这似乎有悖常理，但科学史家们会很高兴地证实这一点（Rheinberger 1997）。仔细想想，这是有道理的：如果没有对我们已经知道的东西进行深入的阐述，我们就很难看到它的局限性、缺失的东西或者可能是错误的。对某件事情非常熟悉，使我们能够玩味它，修改它，发现新的和不同的想法，而不会冒着仅仅重复旧的想法的风险_相信它们是新的。这就是为什么一开始会觉得熟悉会让我们更难想出新的想法。我们只是不知道，我们的大部分想法其实

并没有那么创新。但是，当我们对自己的独创性的信念随着专业知识的增加而减少的时候，我们就会变得更加能够真正做出新的贡献。

Jacob Warren Getzels and Mihaly Csikszentmihalyi showed that this is also true in art: New, groundbreaking work is rarely created on a whim by some accidental artist who believes himself to be amazingly innovative. On the contrary: The more time an artist devotes to learning about an aesthetic “problem,” the more unexpected and creative his solution will be regarded later by art experts (Getzels and Csikszentmihalyi 1976).

雅各布-沃伦-盖茨尔斯和米哈伊-齐克辛特米哈伊表明，在艺术中也是如此。新的，突破性的作品很少是由一些偶然的艺术家一时兴起的，他们认为自己是惊人的创新。恰恰相反。一个艺术家花越多的时间去了解一个美学 "问题"，他的解决方案就越出人意料，越有创意，以后就会被艺术专家认为是有创意的（Getzels and Csikszentmihalyi 1976）。

If open-mindedness is all that is needed, the best artists and scientists were hobbyists. Jeremy Dean, who has written extensively on routines and rituals and suggests seeing old ways of thinking as thinking routines, puts it well when he writes that we cannot break with a certain way of thinking if we are not even aware that it is a certain way of thinking (Dean, 2013).

如果只需要开放的心态，最好的艺术家和科学家都是业余爱好者。杰里米-迪恩（Jeremy Dean）在常规和仪式方面写了大量文章，并建议将旧的思维方式视为思维常规，他写道：如果我们甚至没有意识到这是一种_特定的思维方式，我们就无法打破这种思维方式（迪恩，2013）。

13.3 Getting Things Done by Following Your Interests

13.3 按照自己的兴趣来完成事情。

It is not surprising that motivation is shown to be one of the most important indicators for successful students — next to the feeling of being in control of one’s own learning course. When even highly

intelligent students fail in their studies, it's most often because they cease to see the meaning in what they were supposed to learn (cf. Balduf 2009), are unable to make a connection to their personal goals (Glynn et al. 2009) or lack the ability to control their own studies autonomously and on their own terms (Reeve and Jan, 2006; Reeve, 2009).

动机被证明是成功学生最重要的指标之一--仅次于对自己学习过程的掌控感，这一点并不奇怪。当即使是高智商的学生在学习中失败时，最常见的原因是他们不再看到他们应该学习的东西的意义（参见Balduf，2009），无法与他们的个人目标建立联系（Glynn等人，2009），或者缺乏自主控制自己学习的能力和自己的条件（Reeve和Jan，2006；Reeve，2009）。

These findings are an important argument for academic freedom. Nothing motivates us more than seeing a project we can identify with moving forward, and nothing is more demotivating than being stuck with a project that doesn't seem to be worth doing.

这些发现是学术自由的重要论据。没有什么比看到一个我们能认同的项目向前推进更能激励我们，也没有什么比被一个似乎不值得做的项目困住更令人沮丧。

The risk of losing interest in what we do is high when we decide upfront on a long-term project without much clue about what to expect. We can mitigate this risk considerably by applying a flexible organisation scheme that allows us to change course whenever necessary.

当我们在没有太多头绪的情况下就决定了一个长期的项目时，对我们所做的事情失去兴趣的风险是很高的。我们可以通过采用灵活的组织方案来大大降低这种风险，使我们能够在必要的时候改变方向。

If we accompany every step of our work with the question, "What is interesting about this?" and everything we read with the question, "What is so relevant about this that it is worth noting down?" we do

not just choose information according to our interest. By elaborating on what we encounter, we also discover aspects we didn't know anything about before and therefore develop our interests along the way. It would be quite sad if we did not change our interests during research.

如果我们在工作的每一步都伴随着这样的问题："这件事有什么有趣的地方？"我们阅读的每一件事都伴随着这样的问题："这件事有什么相关的地方，值得我们记下来？"我们就不会只根据自己的兴趣来选择信息。通过对所遇到的事物的阐述，我们也会发现以前不知道的方面，从而顺势发展自己的兴趣。如果我们在研究过程中没有_改变自己的兴趣，那将是相当可悲的。

The ability to change the direction of our work opportunistically is a form of control that is completely different from the attempt to control the circumstances by clinging to a plan. The beginning of the research project that led to the discovery of DNA's structure was the application for a grant. The grant was not to discover DNA's structure, but find a treatment for cancer. If the scientists had stuck to their promises, not only would they probably not have found a cure for cancer, but they definitely would not have discovered the structure of DNA. Most likely, they would have lost interest in their work. Luckily, they did not stick to their plan, but followed their intuition and interest and took the most promising path to insight whenever one opened up. The actual research program developed along the way (Rheinberger 1997). One could say they finished the plan on what to do the very moment they finished the whole project.

机会性地改变我们工作方向的能力是一种控制的形式，它与试图通过坚持计划来控制环境的做法完全不同。导致发现DNA结构的研究项目的开始是申请了一笔资助。这笔拨款不是为了发现DNA的结构，而是为了找到治疗癌症的方法。如果科学家们坚持自己的承诺，他们不仅可能找不到治疗癌症的方法，而且绝对不会发现DNA的结构。很可能，他们会对自己的工作失去兴趣。幸运的是，他们并没有坚持自己的计划，而是按照自己的直觉和兴趣，只要有一条路开辟出来，就走最有希望的见识。实际的研究计划

是在这条路上发展起来的（莱茵伯格1997）。可以说，他们在完成整个项目的那一刻，就已经完成了做什么的计划。

The ability to keep control over our work and change course if necessary is made possible by the fact that the big task of “writing a text” is broken down into small, concrete tasks, which allows us practically to do exactly what is needed at a certain time and take the next step from there. It is not just about feeling in control, it is about setting up the work in a way that we really are in control. And the more control we have to steer our work towards what we consider interesting and relevant, the less willpower we have to put into getting things done. Only then can work itself become the source of motivation, which is crucial to make it sustainable.

由于 "写作文 "这个大任务被分解成一个个具体的小任务，使得我们能够对工作进行控制，并在必要时改变方向，这就使得我们能够切实地在某个时间准确地完成需要做的事情，并由此进行下一步的工作。这不仅仅是为了让我们感觉到自己的掌控力，更是为了让我们真正的掌控工作的设置。而我们越是能控制自己的工作，引导我们的工作向着我们认为有趣的、相关的方向发展，我们就越是不需要用意志力去完成事情。只有这样，工作本身才能成为动力的源泉，而动力的源泉是使工作可持续发展的关键。

“When people experienced a sense of autonomy with regard to the choice, their energy for subsequent tasks was not diminished. An important question that deserved empirical attention concerns the potential for autonomous choice to vitalise or enhance self–regulatory strength for subsequent tasks. What, for example, are the conditions that will lead autonomous choice to enhance people’s motivation for new tasks? We suggest that among the factors that are likely to affect whether choice will be vitalizing is the nature of the options being provided to the person. If a person is offered choice among options that he or she does not value, that are trivial or irrelevant, the choice is unlikely to be vitalizing and may be depleting, even if there is no subtle pressure toward a particular option. On the other hand, having autonomous choice among

options that do have personal value may indeed be quite energizing." (Moller, 2006, 1034)

"当人们在选择方面体验到自主感时，他们对后续任务的能量并没有减少。一个值得实证关注的重要问题涉及自主选择对后续任务的自我调节力量的活力或增强的可能性。例如，什么条件会导致自主选择增强人们对新任务的动力？我们认为，在可能影响选择是否会具有生命力的因素中，有一个是提供给人的选择的性质。如果一个人在他或她不重视的、琐碎的或不相关的选项中被提供选择，那么即使没有向某一特定选项施加微妙的压力，这种选择也不可能具有生命力，可能会被消耗掉。另一方面，在确实具有个人价值的选项中进行自主选择，确实可能相当有活力"。(Moller，2006，1034)

Organizing the work so we can steer our projects in the most promising direction not only allows us to stay focused for longer, but also to have more fun — and that is a fact (Gilbert 2006).[39]

组织工作，这样我们就可以把项目引向最有前途的方向，不仅可以让我们更长时间地保持专注，而且可以获得更多的乐趣--这是一个事实（Gilbert 2006）。[39]

13.4 Finishing and Review

13.4整理和审查。

There is not much left to say about the last two steps because the main work is already done.

关于最后两个步骤，没有什么可说的了，因为主要工作已经完成。

A key point: Structure the text and keep it flexible. While the slip-box was very much about experimenting with and generating new ideas, we now need to bring our thoughts into a linear order. The key is to structure the draft visibly. It is not so much about deciding once and for all what to write in which chapter or paragraph, but what does not need to be written in a particular part of the

manuscript. By looking at the (always preliminary) structure, you can see if information will be mentioned in another part.

_一个关键点。{fn华文仿宋fs161cHD1D1D1}虽然 "滑板箱 "在很大程度上是为了试验和产生新的想法，但我们现在需要将我们的想法按线性顺序排列。关键是要将草稿结构化_可见。这并不是说要一劳永逸地决定在哪一章或哪一段中写什么，而是在手稿的某一部分中，哪些内容是_不需要写的。通过观察（总是初步的）结构，你可以看到信息是否会在另一部分中被提及。

The problem in this stage is almost exactly the opposite of the “blank screen.” Instead of not knowing how to fill the pages, we have so much at hand that we have to curb our impulse to mention everything at the same time.

这个阶段的问题几乎与 "空白屏幕 "完全相反。与其说我们不知道如何填满页面，不如说我们手头的资料太多，以至于我们不得不抑制自己同时提及所有内容的冲动。

The desktop function of the Zettelkasten is the place to sort your notes for a particular project. It helps with developing a rough structure, but it also allows you to keep it flexible. The structure of an argument is part of it and therefore will change during the process of developing it — it is not a vessel to be filled with content. As soon as the structure no longer changes much, we can happily call it a “table of contents.” But even then, it helps to see it as a structural guideline and not a prescription. It is not unusual to change the order of chapters at the very end.

Zettelkasten的桌面功能是为某个项目整理笔记的地方。它有助于制定一个大致的结构，但也可以让你保持灵活。一个论点的结构是它的一部分，因此在开发它的过程中会发生变化--它不是一个要装满内容的容器。只要结构不再有太大的变化，我们就可以愉快地称它为 "目录"。但即便如此，把它看成是结构上的准则而不是处方也是有帮助的。在最后改变章节顺序的做法并不罕见。

Another key point: Try working on different manuscripts at the same time. While the slip-box is already helpful to get one project done, its real strength comes into play when we start working on multiple projects at the same time. The slip-box is in some way what the chemical industry calls “verbund.” This is a setup in which the inevitable by-product of one production line becomes the resource for another, which again produces by- products that can be used in other processes and so on, until a network of production lines becomes so efficiently intertwined that there is no chance of an isolated factory competing with it anymore.[40]

_另一个关键点。试着同时处理不同的手稿_虽然滑匣对完成一个项目已经很有帮助，但当我们开始同时处理多个项目时，它的真正力量就会发挥作用。滑箱在某种程度上就是化工行业所说的 "动词"。在这种设置中，一条生产线不可避免的副产品成为另一条生产线的资源，而另一条生产线又会产生可以用于其他工序的副产品，以此类推，直到一个生产线网络高效地交织在一起，以至于一个孤立的工厂没有机会再与之竞争。[40]

The process of reading and writing inevitably produces a lot of unintended by- products. Not all ideas can fit into the same article, and only a fraction of the information we encounter is useful for one particular project.

在阅读和写作的过程中，不可避免地产生了许多意想不到的副产品。并非所有的想法都能放在同一篇文章中，而且我们遇到的信息中只有一小部分对某个特定项目有用。

If we read something that is interesting, but not directly relevant to our current project, we can still use it for another project we are working on or might work on. Everything that enriches our slip-box has the potential to end up in a text we might write. By taking smart notes, we collect en passant the material for our future writings in one place. The projects we work on can be in completely different stages of completion. Some of them might not even have come to our attention. This is advantageous not only because we make

progress on the next papers or books while we are still working on the current one, but also because it allows us to switch to other projects whenever we get stuck or bored.

如果我们读到了一些有趣的东西，但与我们当前的项目并不直接相关，我们仍然可以将其用于我们正在进行或可能进行的另一个项目。一切丰富我们的滑匣的东西都有可能最终出现在我们可能写的文本中。通过智能笔记，我们可以在一个地方收集未来写作的材料。我们所做的项目可能处于完全不同的完成阶段。其中一些可能甚至没有引起我们的注意。这样做的好处不仅在于我们在目前的工作中还能在下一篇论文或书籍上取得进展，而且还在于它允许我们在卡住或厌倦的时候切换到其他项目。

Remember: Luhmann's answer to the question of how one person could be so productive was that he never forced himself to do anything and only did what came easily to him. "When I am stuck for one moment, I leave it and do something else." When he was asked what else he did when he was stuck, his answer was: "Well, writing other books. I always work on different manuscripts at the same time. With this method, to work on different things simultaneously, I never encounter any mental blockages." (Luhmann, Baecker, and Stanitzek 1987, 125–55) It is like martial arts: If you encounter resistance or an opposing force, you should not push against it, but redirect it towards another productive goal. The slip-box will always provide you with multiple possibilities.

记住： 卢曼对一个人如何能如此高效的问题的回答是： 他从不强迫自己做任何事情，只做自己容易做的事情。"当我有一刻被困住的时候，我就会离开它，做别的事情。" 当有人问他，当他被困住的时候，他还做了什么，他的回答是。"嗯，写其他的书。我总是在同一时间创作不同的稿子。用这种方法，同时进行不同的工作，我从来不会遇到任何心理障碍。" (Luhmann, Baecker, and Stanitzek 1987, 125–55)这就像武术。如果你遇到阻力或反对的力量，你不应该推倒它，而应该把它转向另一个富有成效的目标。滑箱将永远为你提供多种可能性。

13.5 Becoming an Expert by Giving up Planning

13.5 放弃规划，成为专家。

One inconvenient truth in the end: The planning skills of students are pathetic.

终究是一个不方便的事实。学生的计划能力是可怜的。

The psychologists Roger Buehler, Dale Griffin and Michael Ross asked a group of students to:

心理学家罗杰–布勒、戴尔–格里芬和迈克尔–罗斯要求一群学生。

1. Estimate realistically the time they would need to finish a paper.
2. 实事求是地估计他们完成一篇论文所需的时间。
3. Estimate additionally how long they think they would need
4. 另外估计他们认为自己需要多长时间。

a. if everything goes as smoothly as possible or

a. 如果一切尽可能顺利，或

b. if everything that could go wrong would go wrong.

b. 如果一切可能出错的事情都会出错。

Interestingly, the majority of the student's "realistic" estimates were not so different from their estimates for writing under perfect conditions. This alone should have given them pause for thought. But when the researchers checked how much time the students really needed, it was much, much longer than they estimated. Not even half of the students managed to finish their papers in the time they thought they would need under the worst possible conditions (Buehler, Griffin and Ross 1994). The researchers did not assume

that half of the students suddenly faced calamities beyond their imagination.

有趣的是，大多数学生的 "现实 "估计与他们在完美条件下写作的估计并没有太大的差别。光是这一点就应该让他们有所顾虑。但当研究人员检查学生们到底需要多少时间时，却比他们估计的时间长了很多很多。甚至没有一半的学生能够在他们认为最坏的条件下完成他们的论文（Buehler, Griffin and Ross 1994）。研究人员并没有假设一半的学生突然面临着超出他们想象的灾难。

In another study a year later, the psychologists looked more closely at this phenomenon, which still puzzled them because the students could have answered any way they liked — there was no benefit in giving overly optimistic answers. They asked the students to give them time ranges in which they were either 50%, 70% or 99% sure to finish their paper.

在一年后的另一项研究中，心理学家更仔细地观察了这一现象，这仍然让他们感到困惑，因为学生们可以用任何他们喜欢的方式来回答--给出过于乐观的答案没有任何好处。他们要求学生们给出时间范围，在这个范围内，他们有50%、70%或99%的把握完成论文。

Again: They were free to give any answer. But, sure enough, only 45% managed to get their papers done within the time they were sure they had a 99% likelihood to finish it under any condition they regarded as possible (Buehler, Griffin, and Ross 1995). Now, you might think it would make a difference to remind them about their not-so-perfect guesses last time. The researchers thought so, but the students proved them wrong: Experience doesn't seem to teach students anything.

再一次，他们可以自由地给出_任何_时间范围。他们可以自由地给出任何答案。但是，可以肯定的是，只有45%的学生能够在他们确信自己有99%的可能性在他们认为可能的任何条件下完成论文（Buehler, Griffin, and Ross 1995）。现在，你可能会认为，提醒他们上次不那么完美的猜

测会有所改变。研究人员是这么想的，但学生们证明他们错了：经验似乎并没有教给学生什么。

But there is one consolation: It has nothing to do with being a student. It has something to do with being human. Even the people who study this phenomenon, which is called the overconfidence bias, admit that they too fall for it (Kahneman 2013, 245ff).

但有一个安慰。这和学生的身份无关 这和做人有关系。即使是研究这种被称为过度自信偏差的现象的人，也承认他们也会上当（Kahneman 2013，245ff）。

The lesson to draw is to be generally sceptical about planning, especially if it is merely focused on the outcome, not on the actual work and the steps required to achieve a goal. While it doesn't help to imagine oneself the great author of a successful and timely finished paper, it does make a difference if we have a realistic idea about what needs to be done to get there in our minds. We know from sports that it doesn't help when athletes imagine themselves as winners of a race, but it makes a big difference if they imagine all the training that is necessary to be able to win. Having a more realistic idea in mind not only helps them to perform better, it also boosts their motivation (Singer et al. 2001). We know today that this is not only true for athletes, but for any work that needs effort and endurance (Pham and Taylor 1999). Writing definitely belongs in this category.

我们要吸取的教训是，对规划要普遍持怀疑态度，尤其是当规划仅仅关注结果，而不关注实际工作和实现目标所需的步骤时。虽然把自己想象成一个成功的、及时完成的论文的伟大作者并没有什么帮助，但如果我们在头脑中对达到目标所需要做的事情有一个现实的想法，那就会有不同的效果。我们从体育运动中知道，当运动员把自己想象成比赛的胜利者时，并没有什么帮助，但如果他们想象出为了能够赢得比赛而必须进行的所有训练，就会有很大的不同。在脑海里有一个更现实的想法，不仅能帮助他们更好地表现，还能提高他们的积极性（Singer等人，2001）。今天我们

知道，这不仅对运动员如此，对任何需要努力和耐力的工作也是如此（Pham和Taylor 1999）。写作绝对属于这一类。

The other lesson is not that we can't learn from our experiences, but that we can only learn from our experiences if feedback follows shortly afterwards — and maybe more than once in a while. Disassembling the big challenge of "writing a paper" into small, manageable tasks helps to set realistic goals that can be checked on a regular basis. If someone starts from the unrealistic assumption that a paper can be written by following a linear plan of finding a topic first, doing literature research second, followed by separable stages of reading, thinking, writing and proof–reading, then it is no surprise that any time planning that is based on this assumption will be unrealistic as well. Once we do some research, we may discover that our initial idea was not as good as we thought; once we read something, it is likely that we will discover something else to read, because that is how we discover literature; once we start writing down our arguments, it is likely that we will realise that we need to take something else into account, change our initial ideas or go back to an article we might not have understood well enough. None of this is unusual, but all of this will mess up any grand plans.

另一个教训并不是说我们不能从经验中学习，而是说只有在不久之后的反馈--或许还不止一次--之后，我们才能从经验中学习。把 "写论文 "这个大挑战拆解成一个个小的、可管理的任务，有助于设定可以定期检查的现实目标。如果有人从一个不切实际的假设出发，认为按照先找课题，后做文献研究，接着是阅读、思考、写作和校对等可分离的阶段的线性计划，就可以写出一篇论文，那么，基于这个假设的任何时间规划也都是不切实际的。一旦我们做了一些研究，我们可能会发现我们最初的想法并没有想象中的那么好；一旦我们读了一些东西，很可能会发现其他的东西可以读，因为这就是我们发现文献的方式；一旦我们开始写下我们的论点，很可能会意识到我们需要考虑其他的东西，改变我们最初的想法，或者回到我们可能还不够理解的文章。这些都不稀奇，但所有这些都会把任何宏伟的计划搞乱。

If we instead set out to write, say, three notes on a specific day, review one paragraph we wrote the day before or check all the literature we discovered in an article, we know exactly at the end of the day what we were able to accomplish and can adjust our expectations for the next day. Getting hundreds of these cases of feedback over the course of a year will make us much more likely to learn from them and to become more realistic about our productivity than if we just miss a deadline once in a while, which, of course, will not happen again — until next time.

如果我们反而规定，比如说在某一天写三篇笔记，回顾前一天写的一段话，或者检查我们在一篇文章中发现的所有文献，那么在一天结束时，我们就会清楚地知道自己能够完成什么，并可以调整对第二天的期望。在一年的时间里，得到上百个这样的反馈案例，会让我们更有可能从中学习，对自己的工作效率更加现实，而不是偶尔错过一次截止日期，当然，这种情况不会再发生--直到下一次。

The problem with the linear model is not just that one phase might need longer than planned, but that it is highly unlikely that we will finish a phase sooner than planned. If the whole problem was just an error in judgement, we would on average overestimate the time we need as often as we underestimate it, but unfortunately, that is not how it works. According to the famous law of Parkinson, every kind of work tends to fill the time we set aside for it, like air fills every corner of a room (Parkinson 1957).

线性模型的问题不仅仅是一个阶段可能需要比计划更长的时间，而是我们极不可能比计划更早完成一个阶段。如果整个问题只是判断错误，我们平均会高估我们所需要的时间，因为我们经常低估它，但不幸的是，这不是它的工作方式。根据著名的帕金森定律，每一种工作都倾向于填满我们为它预留的时间，就像空气充满了房间的每一个角落一样（帕金森 1957）。

While this is almost a universal law for longer time frames, the opposite is true for tasks that can be completed in one go. This is

partly due to the aforementioned Zeigarnik effect (Zeigarnik 1927), in which our brains tend to stay occupied with a task until it is accomplished (or written down). If we have the finish line in sight, we tend to speed up, as everyone knows who has ever run a marathon. That means that the most important step is to get started. Rituals help, too (Currey 2013).

虽然对于较长的时间框架来说，这几乎是一个普遍的定律，但对于那些可以一次性完成的任务来说，情况却恰恰相反。这部分是由于前面提到的Zeigarnik效应（Zeigarnik 1927），我们的大脑倾向于一直被一项任务所占据，直到它完成（或写下来）。如果我们看到了终点线，我们就会倾向于加速，大家都知道谁跑过马拉松。这意味着，最重要的一步是开始。仪式也有帮助（Currey 2013）。

But the biggest difference lies in the task you are facing to start with. It is much easier to get started if the next step is as feasible as “writing a note,” “collect what is interesting in this paper” or “turning this series of notes into a paragraph” than if we decide to spend the next days with a vague and ill-defined task like “keep working on that overdue paper.”

但最大的区别在于你面对的任务是什么开始。如果下一步是像 "写一张纸条"、"收集这篇论文中有趣的东西 "或 "把这一系列的笔记变成一段话 "这样的可行任务，那么开始就比我们决定用 "继续写那篇逾期的论文 "这样模糊不清的任务来度过接下来的日子要容易得多。

13.6 The Actual Writing

13.6 实际写作。

Ernest Hemingway was once asked how often he rewrote his first draft.

有人问海明威，他多久重写一次初稿。

His answer: “It depends. I rewrote the ending of ‘A Farewell to Arms,’ the last page of it, thirty-nine times before I was satisfied.”

他的回答是：“这取决于。我把《永别了》的结尾，也就是其中的最后一页，重写了三十九次才满意。”

“Was there some technical problem there? What was it that had stumped you?” the interviewer asked.

"是不是有什么技术问题？是什么原因让你犯了难？"采访者问。

“Getting the words right,” Hemingway replied (Paris Review, 1956).

"把字写好。"海明威回答说（《巴黎评论》，1956年）。

If there is one piece of advice that is worth giving, it is to keep in mind that the first draft is only the first draft. Slavoj Žižek said in an interview[41] that he wouldn’t be able to write a single sentence if he didn’t start by convincing himself he was only writing down some ideas for himself, and that maybe he could turn it into something publishable later. By the time he stopped writing, he was always surprised to find that the only thing left to do was revise the draft he already had.

如果说有一个建议是值得给的，那就是要记住，初稿只是初稿。斯拉沃伊-日泽克在接受采访时说[41]，如果他一开始不说服自己只是为自己写下一些想法，也许以后可以把它变成可以发表的东西，他就写不出一句话来。等到他停止写作的时候，他总是惊讶地发现，唯一能做的就是修改已经有的草稿。

One of the most difficult tasks is to rigorously delete what has no function within an argument — “kill your darlings.”[42] This becomes much easier when you move the questionable passages into another document and tell yourself you might use them later. For every document I write, I have another called “xy- rest.doc,” and every single time I cut something, I copy it into the other document,

convincing myself that I will later look through it and add it back where it might fit. Of course, it never happens — but it still works. Others who know a thing or two about psychology do the same (cf. Thaler, 2015, 81f).

最困难的任务之一是严格删除参数内没有功能的东西--"杀死你的宝贝。"[42]当你把有问题的段落移到另一个文档中，并告诉自己以后可能会用到它们时，这就变得容易多了。对于我写的每一个文档，我都有另一个叫 "xy- rest.doc “的文档，每当我剪掉一些东西时，我都会把它复制到另一个文档中，说服自己以后会翻阅它，并把它添加到可能合适的地方。当然，这从来没有发生过--但它仍然有效。其他对心理学有所了解的人也是这么做的（参见Thaler，2015，81f）。

14 Make It a Habit

14 让它成为一种习惯

“It is a profoundly erroneous truism, repeated by all copybooks and by eminent people when they are making speeches, that we should cultivate the habit of thinking of what we are doing. The precise opposite is the case. Civilization advances by extending the number of important operations which we can perform without thinking about them.” (Whitehead)[43]

"所有的抄本和知名人士在演讲时都在重复一个极其错误的道理，那就是我们应该养成思考我们正在做的事情的习惯。事实恰恰相反。文明的进步是通过扩大我们可以在不思考的情况下进行的重要操作的数量来实现的。" (Whitehead)[43]

The most reliable predictor of our behaviour in the immediate future is — surprise, surprise — the intention to do it. If we decide to go to the gym now, the chance is that we really do go to the gym now.

But this is, unfortunately, only true for the very immediate future. When it comes to the long run, researchers struggle to find any measurable connection between our intentions and our actual behaviour (Ji and Wood 2007; Neal et al. 2012). There is one exception, though: we most certainly act according to our intention if we happen to intend to do exactly what we used to do before.

预测我们近期行为的最可靠因素是--惊喜，惊喜--做这件事的意图。如果我们现在决定去健身房，那么我们有可能真的现在就去健身房。但不幸的是，这只对非常近期的未来是正确的。当涉及到长期的时候，研究人员很难找到我们的意图和我们的实际行为之间的任何可衡量的联系（Ji和Wood，2007；Neal等人，2012）。不过有一个例外：如果我们恰好打算做和以前一模一样的事情，我们肯定会按照我们的意图行事。

It is really easy to predict the behaviour of people in the long run. In all likelihood, we will do in a month, a year or two years from now exactly what we have done before: eat as many chocolates as before, go to the gym as often as before, and get ourselves into the same kinds of arguments with our partners as before. To put it differently, good intentions don't last very long, usually.

从长远来看，预测人们的行为真的很容易。很有可能，我们会在一个月、一年或两年后，做着和以前一模一样的事情：和以前一样吃很多巧克力，和以前一样经常去健身房，和以前一样和伴侣发生同样的争吵。换句话说，好的愿望通常不会持续很久。

We have the best chance to change our behaviour over the long term if we start with a realistic idea about the difficulties of behavioural change (Dean 2013). And that is not so easy, because the more we are used to doing something in a particular way, the more in control we feel about it, even though we are less in control of it. (This is in part also due to the aforementioned mere-exposure error.)

如果我们一开始就对行为改变的困难有一个现实的想法，我们就有最好的机会长期改变自己的行为（Dean 2013）。而这并不那么容易，因为我们越是习惯于以某种特定的方式做某件事，我们就越觉得自己能控制它，尽管我们对它的控制力较弱。这在一定程度上也是由于前面提到的优点暴露错误）。

“Those with the strongest habits who were the least successful in predicting their behaviour over the coming week were the most confident in their predictions. The finding is striking because it hints at one of the dark sides of habits. When we perform an action repeatedly, its familiarity seems to bleed back into our judgments about that behavior. We end up feeling we have more control over precisely the behaviours that, in reality, we have the least control over. It’s another example of our thought processes working in the opposite way to our intuitive expectations.” (Dean 2013, 22)

"那些习惯最强的人在预测自己未来一周的行为时最不成功，他们对自己的预测最自信。这个发现之所以引人注目，是因为它暗示了习惯的一个阴暗面。当我们反复执行一个动作时，它的熟悉程度似乎会回渗到我们对该行为的判断中。我们最终会觉得自己对那些行为有更多的控制权，而实际上，我们对这些行为的控制权最小。这是另一个例子，说明我们的思维过程与我们的直觉期望以相反的方式运作。" (Dean 2013，22)

The trick is not to try to break with old habits and also not to use willpower to force oneself to do something else, but to strategically build up new habits that have a chance to replace the old ones. The goal here is to get into the habit of fetching pen and paper whenever we read something, to write down the most important and interesting aspects. If we manage to establish a routine in this first step, it becomes much easier to develop the urge to turn these findings into permanent notes and connect them with other notes in the slip-box. It is not so difficult to get used to thinking within an external memory of notes, as the advantages become obvious quite quickly. As soon as we have developed a new routine, we can do what intuitively feels right, which requires no effort. Watching others

reading books and doing nothing other than underlining some sentences or making unsystematic notes that will end up nowhere will soon be a painful sight.

诀窍是不要试图与旧习惯决裂，也不要用意志力强迫自己去做别的事情，而是要有策略地建立有机会取代旧习惯的新习惯。这里的目标是养成每当我们读到一些东西时就拿起笔和纸的习惯，把最重要、最有趣的方面写下来。如果我们能在这第一步中建立起一种常规，就会变得更容易产生将这些发现转化为永久笔记的冲动，并将它们与滑盖箱中的其他笔记联系起来。习惯于在笔记的外部记忆中进行思考并不难，因为优点很快就会变得很明显。只要我们形成了新的常规，就可以做直观感觉正确的事情，这就不需要努力。看着别人看书，除了在一些句子上划线，或者做一些不系统的笔记，最后无处可去，很快就会觉得很痛苦。

Afterword

后记

The Take Smart Notes principle works. Many successful writers, artists and academics use some form of a slip-box. This book is also written with the help of the slip-box. It was, for example, a note on “technology, acceptance problems” that pointed out to me that an answer to the question why some people struggle to implement the slip-box could be found in a book on the history of the shipping container. I certainly would not have looked for that intentionally — doing research for a book on effective writing! This is just one of many ideas and connections the slip-box pointed out to me. That it is not just a tool to write more efficiently, but also a training device for serious long-term learning, should have been obvious to me, but wasn’t. Only when I was taking smart notes on more recent learning experiments did it dawn on me that I am in the middle of putting exactly into practice what is proven to work best. I want to point out, though, that I sometimes have ideas all by myself.

智能笔记原则是有效的。许多成功的作家、艺术家和学者都使用某种形式的滑盖箱。这本书也是借助于滑箱写出来的。比如说，是一个关于 "技术、接受问题 "的笔记向我指出，在一本关于集装箱历史的书中，可以找到为什么有些人难以实施滑箱的答案。我当然不会特意去找--为一本关于有效写作的书做研究! 这只是滑箱给我指出的许多想法和联系之一。它不仅是提高写作效率的工具，也是认真长期学习的训练设备，这对我来说应该是显而易见的，但不是。只有当我在智能记录最近更多的学习实验时，我才恍然大悟，我正是在把被证明是最有效的东西付诸实践。不过，我想指出的是，我有时自己都有想法。

The particular technique presented in this book enabled Niklas Luhmann to become one of the most productive and innovative social theorists of the last century. There are increasing numbers of academics and nonfiction writers taking notice.[44] But it is still not an easy sell for the majority of students and writers. There are different reasons for this. First of all, the long-term, cross-topic organization of notes, which is guided only by one's own understanding and interest, is very much at odds with the modular, compartmentalised and top-down approach in which the curricula of universities and colleges are organised. Teaching is still set up for review, and students are not really encouraged to independently build a network of connections between heterogeneous information — despite the radical change in our understanding on how our memory and learning works. There is a lot of talk about innovative approaches. But without changing the actual workflow, this talk is idle. Some seemingly innovative ideas, like the "learner-centred" approach, often do more harm than good, as they still neglect the need for an external scaffolding to think in. It is not the learner who should be the focus of attention.

本书所介绍的特殊技术，使尼克拉斯-卢曼成为上个世纪最富有成效和创新的社会理论家之一。越来越多的学者和非虚构作家注意到了这一点。[44]但对于大多数学生和作家来说，这本书仍然不容易出售。这其中有不同的原因。首先，长期的、跨专题的笔记组织方式，只以自己的理解和兴趣为指导，与高校课程组织的模块化、分门别类、自上而下的方式很不协

调。教学仍然是为了复习而设置的，没有真正鼓励学生独立地建立异质信息之间的联系网络--尽管我们对我们的记忆和学习方式的理解发生了根本性的变化。有很多关于创新方法的讨论。但如果不改变实际的工作流程，这种谈论就是空谈。一些看似创新的想法，比如 "以学习者为中心 " 的方法，往往弊大于利，因为它们仍然忽视了需要一个外部的脚手架来进行思考。应该关注的重点不是学习者。

The slip-box does not put the learner in the centre. Quite the contrary: It allows the learner to let his or her own thinking become decentralised within a network of other ideas. Learning, thinking and writing should not be about accumulating knowledge, but about becoming a different person with a different way of thinking. This is done by questioning one's own thinking routines in the light of new experiences and facts.

滑箱并没有把学习者放在中心位置。恰恰相反。它允许学习者将自己的思维分散在其他思想的网络中。学习、思考和写作不应该是为了积累知识，而是为了成为一个具有不同思维方式的人。这就要根据新的经验和事实，对自己的思维套路提出质疑。

The prevalence of linear and learner-centred approaches also lead to the common misunderstanding about the use of the slip-box as a tool that can be used without changing the work routines around it. It is then often used simply as an archive where you just take out what you put in earlier. This, of course, will lead to disappointment. If we are just storing information, there would be no need to use a slip-box. To reap its benefits, we need to change our working routines. And the basis for that is a deep understanding on how and why it works and how the different steps and tasks of writing fit together. This is why a book, not just a manual, is needed to explain the principle and ideas behind it.

线性方法和以学习者为中心的方法的盛行，也导致人们普遍对滑板箱的使用产生误解，认为它是一种工具，可以在不改变周围工作常规的情况下使用。于是，人们往往把它简单地当作一个档案库，只要把之前放进去的东

西拿出来就可以了。这当然会导致失望。如果我们只是存储信息，就没有必要使用滑箱。要想获得它的好处，我们需要改变我们的工作常规。而这一切的基础是深刻理解它的工作方式和原因，以及写作的不同步骤和任务如何配合。这就是为什么需要一本书，而不仅仅是一本手册，来解释它背后的原理和想法。

Another reason why this technique is still a hard sell is that most students only realise the need for a good system when they already struggling with their writing, typically towards the end of the university program, when a bachelor's, master's or doctoral thesis needs to be written. It certainly still helps, but it would have helped much more if one started earlier — very much like saving for retirement. It is also difficult to change behaviour in times of stress. The more pressure we feel, the more we tend to stick to our old routines — even when these routines caused the problems and the stress in the first place. This is known as the tunnel effect (Mullainathan and Shafir 2013). But Mullainathan and Shafir, who examined this phenomenon thoroughly, also found a way out of it: Change is possible when the solution appears to be simple.

另一个原因是，大多数学生只有在他们已经为写作而苦恼的时候，才意识到需要一个好的系统，通常是在大学课程的最后，需要写学士、硕士或博士论文的时候。这当然还是有帮助的，但如果早点开始的话，帮助会更大--很像为退休储蓄。在压力大的时候，也很难改变行为。我们感受到的压力越大，就越倾向于坚持自己的老套路--即使这些老套路一开始就造成了问题和压力。这就是所谓的隧道效应（Mullainathan和Shafir 2013）。但Mullainathan和Shafir彻底研究了这一现象，也找到了一条出路。当解决方案看似简单的时候，改变是可能的。

And that is the very good news at the end. The slip-box is as simple as it gets. Read with a pen in your hand, take smart notes and make connections between them. Ideas will come by themselves and your writing will develop from there. There is no need to start from scratch. Keep doing what you would do anyway: Read, think, write. Just take smart notes along the way.

而这也是最后一个非常好的消息。滑箱就是这么简单。用手中的笔阅读，聪明地做笔记，并在它们之间建立联系。想法会自己出现，你的写作也会由此发展。没有必要从头开始。继续做你反正会做的事。阅读，思考，写作。只是沿途做聪明的笔记。

If you want to kick-start your new note-taking efforts with a one-on-one coaching session or would like some help clarifying your thoughts on a piece you are writing, check out my offers on http://takesmartnotes.com

如果你想通过一对一的辅导课程来启动你新的笔记工作，或者想得到一些帮助来澄清你正在写的作品的想法，请在http://takesmartnotes.com上查看我的提议。

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