In this next,module, we're going to talk about revision.,As I've said before, revision is really important, because that's where the elegance comes in in writing.,Here are some,tips for revision. I'm going to go through each one of these in turn.,One of the big tips I can give you on revision is to read your writing,out loud. That's because the brain actually processes the spoken word differently than the written word.,You may have noticed that in this course, as I've been reading some examples to you out loud, you can hear the awkwardness or repetition or wordiness.,Your brain picks it up better when you hear it rather than when you see it.,So always read your work out loud.,That can help you pick up where things don't sound good.,Sometimes it even helps to read your writing out loud into a tape recorder and then play it back.,Another great tip for revision is to do a verb check.,If you're stuck and you're just not quite sure how to improve your work, but its feeling like it doesn't have enough os, like it's boring, here's a really easy thing to do.,Take a couple of paragraphs and go through and underline the main verb of each sentence.,After you've underlined them all, think carefully about your verb choices.,Do you have a lot of to be verbs?,Is our or BBAM? Do you have a lot of passive verbs?,Do you have buried verbs where you've got a really long subject before you get to the main verb?,Just changing a few verbs to make them more spunky can go a long way to making your writing more lively and accessible.,Use it the sorus to find good verbs.,As I've also already stressed in this course, you need to learn to cut ruthlessly.,It's hard to cut your own work, but hopefully the editing practice that youve been doing in this course is making you more aware of the clutter in your own writing.,Just a quick review of what we talked about in Weak one.,Watch for dead weight words and phrases, things like It should be emphasized that, in my opinion, watch out for empty words and phrases, like basic tenants of important methodal logic. Watch out for long words or phrases that could be short, like muscular card and cardio respiratory performance rather than fitness.,Also unnecessary jargon and acronyms. As I've mentioned before.,Try to catch yourself if you're using a lot of acronyms and go back and replace those with the actual words for jargon.,Ask yourself, do I really need the jargonny word, or can I say this in a simpler way?,Watch out for repetition and also for adverbs.,These are all of the things that we've been practicing in this course already.,So far, we've been talking about sentence level editing during revision.,You should also do a higher level review, what I call an organizational review.,The way that I do an organizational review, especially when I'm editing students work, is I tag each paragraph in the margins with a phrase or sentence that sums up the main point.,So if a paragraph is all about the biological pathway that underlies a disease, I might write biological pathway in the margin.,I'll go through each paragraph in the paper, and I'll give it a tag.,What I inevitably find is that there are multiple paragraphs with the same tag in different places in the paper.,So then I just move those paragraphs around to bring like ideas together.,Then I may even combine those paragraphs to reduce repetition.,This trick of tagging each paragraph can also help you assess the logical flow, because you can quickly check whether the paragraphs are organized in a logical manner.,Hopefully, if you did a good job on your pre writing, what comes out in your 1st draft is already well organized up, but sometimes you need to move things around when revising.,It's always helpful to get outside feedback.,It's hard to edit your own work, ,so getting an outside opinion can help ask someone outside of your department, preferably outside of your own little niche in science, to read your manuscript.,It doesn't have to be somebody who has any training in your scientific area, just somebody who's intelligent and has enough knowledge of science to be able to read a scientific manuscript. Make sure that they can tell you back the main findings, the take home messages and the significance of your work, even without any technical background in your particular area.,They ought to be able to get these three things from your paper without any problem.,If they're struggling with the paper, ask them to point out particularly hard to read sentences and paragraphs in your paper.,These are places where you can focus your revision efforts.,Try to make the writing more clear, SYSNCT and engaging.,Finally, find a good editor to editor work, preferably somebody who knows how to do some sentence level,editing, sometimes a spouse, a significant other,,a friend. If they're willing to, can make a good editor.,Maybe you'll meet somebody in this course who's a good peer editor, who you could team up with later to reciprocally edit each other's work.,And hopefully, during your career, you'll find advisors or mentors or editors who you work well with and who can polish your work at the end of the day.

在下一个模块中，我们将讨论写作步骤。这是你写文章初稿的步骤。正如我所说，对于大多数人来说，这是最艰难的一步。在这里，你必须打开那个空白的Word文档然后开始写作，或者希望你会出现在某种路线图中，这样你就可以开始一些事情了。以下是初稿的一些小贴士。我对初稿的最大建议是不要成为完美主义者。许多科学家都是完美主义者，他们想在第一次尝试时就把它做好。但是，写初稿并不是成为完美主义者的理想之选。在写初稿时，我唯一的目标是用完整的句子和顺序写下我的想法，仅此而已。句子不必听起来不错，只需要语法完整且位置正确即可。我故意设定了一个较低的门槛，这样我就可以快速通过初稿。在初稿中，你要把重点放在高层次的想法、带回家的信息和逻辑组织上。不用担心句子级别的细节。在修订期间修复句子级别的细节要比修复逻辑组织之类的东西容易得多。如果你的逻辑组织不合逻辑，你的带回家的信息混乱，那么你最终不得不修改整篇文章。而且修订过程要困难得多。句子级别的编辑，这相对容易。因此，只要用完整的句子把想法写下来，不用担心句子听起来是什么样子。快速撰写初稿的另一个论点是，对于大多数人来说，这是最艰难的一步。通过快速高效地撰写初稿来最大限度地减少痛苦。我能很快写出初稿，因为第一，我已经准备好写了，我的预写工作已经完成了。第二，我不是在随心所欲地编辑自己。我知道编辑和写作中的优雅可能会发生在修订中。这可能与以往的写作方式不同，但请尝试一下。它将使您的写作生活变得更加轻松。我想和大家分享一些我从自己的作品中摘录的初稿写作的例子会很有趣。我浏览了我的档案，发现了一些我已经完成的初稿。我挑选了一些段落只是为了和大家分享。这是一段简短的段落，它说，当作者有错别字、遗漏或方法写得太差以至于其他人无法弄清楚自己做了什么或无法复制他们的表格和数字时，就会发生出版错误。有时候要写的东西太多了，几乎在所有情况下都会出现错误。请注意，这些句子很笨拙。我的第一句话里有一个无聊的动词。在第二句话中，我用了一个不必要的东西，这是我告诉你不要做的事情。但是，我明白了我想说的话的症结所在。我明白了所有我想说的细节，而且我确实要求自己完成句子。那是初稿。现在，让我给你看我的修订版。它说，已发表的论文经常有错别字、遗漏以及其他方面对方法的记录不佳。这些错误使得无法弄清楚到底做了什么，也无法重现结果。因此，你可以看到这段话与初稿非常相似，只是它更加清晰、简洁和优雅，更切中要害。这是我自己写的另一个例子。这来自一个故事的初稿，该故事讲述的是一个事实，即现代人类的DNA中似乎有一些古老的基因，一些尼安德特人基因。本段推测了藏匿这些基因的一些潜在实际影响。再次注意，这是第一次草稿。它说，这些HLA等位基因的发现也可能产生一些实际影响。现在我们都分为那些携带过时DNA的人和那些不携带过时DNA的人。一个潜在的含义是，请注意这里我无聊的准动词。难道携带过时的HLA的人更容易出现自身免疫吗。自身免疫与HLA因子有关。过时的HLA可能有缺点。这写得很无聊。由于我们是与尼安德特人分开进化而来的，请注意我在那里的错字，几十万年来，我们在与HLA相互作用的蛋白质上可能已经进化出重要的差异。过@@时的HLA与其中一些蛋白质的相互作用可能更差，这可能会导致自身免疫等错误，最后我有一句话。帕勒姆说，这只是猜测。但是我们已经分开了这么长时间，因此，帕勒姆说，如果没有分歧，那将是非常令人惊讶的，这将解决一个长期存在的难题。请注意，我设法将我想提出的所有想法都融入了本段。但是有些写作不太好。我有很多无聊的动词，无聊的句子结构。但是所有主要思想都在那里，用完整的句子写出来，没过多久我就写出来了。现在，这是我的修订版。帕勒姆指出，尼安德特人（或丹尼索万）蛋白继续在我们体内生存和发挥作用；这也可能有一个缺点。尼安德特人与我们分开进化了几十万年，因此它们的蛋白质可能与我们的免疫系统有些不匹配，并且可能在自身免疫性疾病中起作用。人们@@对自身免疫知之甚少，但已知自身免疫与HLA类型有关。然后我们得到了报价。请注意，本段的想法与原文完全相同，但它更加简洁、清晰和优雅，但不是这样开始的。我的初稿相当混乱。它通过修订演变为这样。通过我编辑自己的作品。好吧，再举一个例子。这是我正在写的故事开头的一段话。这是初稿。它说，研究生物学也很困难，因为大脑太难以进入了。癌症科学家可以取出肿瘤并直接观察细胞，但是自闭症研究人员无法直接研究脑细胞（尸检除外），更不用说发育脑细胞了。斯坦福大学在解决这个问题方面处于最前沿——事实上，多尔梅奇的解决方案非常创新，似乎直接出自一部科幻小说。最后我明白了科幻小说里面有个可爱的小东西。这还不错，它有一些不错的部分，但不是很好。我有无聊的动词，有点罗词，我一开始就是这样。那是我的第一份草稿然后我回去修改了它。我的修订版说，进入大脑也很困难。科学家可以从肿瘤中切出癌细胞并直接对其进行研究，但他们不能只从大脑中挖出细胞，更不用说发育中的大脑了。斯坦福大学在解决这个问题方面处于最前沿——事实上，多尔梅奇的解决方案似乎直接来自科幻小说。注意，我在里面添加了一些很棒的动词，slice and scoop。而且我删掉了一些额外的单词，这样它就更简洁了。那是我发给编辑的版本。但是随后，我的编辑又修改了一点。这是实际印刷的修订版。另一个障碍：进入大脑。请注意那里使用了冒号。科学家可以将癌细胞从肿瘤中切出来并直接进行研究，但他们不能只从大脑中挖出细胞。斯坦福大学站在解决这个问题的最前沿——事实上，多尔梅奇的解决方案似乎直接来自科幻小说。你可以看到，这更加清晰，甚至更加优雅。为了走这条路，它经历了多轮起源，但不是那样开始的。因此，在初稿中，为了写得好，违反我一直在谈论的一些规则是可以的。只要你的想法清晰表达，并且知道每个段落中你想做什么，你就可以稍后解决所有这些问题。这种句子级别的编辑可能发生在你写完初稿之后，也可能在修订期间进行。