In this next module, we're going to move up from sentences to whole paragraphs. Will continue discussing paragraphs into next week, and then we'll progress to whole compositions.

I want you, to think of the paragraph as the unit of composition of your, manuscript. Each paragraph should contain one main idea, and you should think in paragraphs when you're organizing your manuscript. Scientists often try to stuff too many ideas into a single paragraph. They end up with these long paragraphs that are extremely hard to read because they meander through so many different ideas without a clear focus. Use the paragraph to delineate to your reader. When you're switching to a new idea, your paragraphs should be short. If you pick up professional writing, like a magazine, you'll notice that they might have two, three, four, maybe five sentences in a paragraph. Short paragraphs are not only more focused, but they provide a lot of white space on the page. Readers appreciate white space. There's nothing worse for a reader than seeing a huge block of text with no breaks. As a reader, you know such prose is going to be tedious and hard to get through. The reader appreciates short paragraphs and white space on the page. When I'm editing students work, I often end up splitting up their paragraphs, so try to keep paragraphs short and focused on a single idea.

Another key tip on paragraphs is that you should give away the punch line early. Scientists don't think like this. Scientists like to put details, details, data, supporting data conclusion. That's the way scientists think. However, when you go to write things up, I'm going to encourage you to invert that. Give away the punchline the conclusion first, to let the reader know where you're going. It's hard for the reader to weed through all the details. first when they don't know what the mean. Point is. In journalism, we call this the Inverted pyramid style. You start with the most important point the taco message, and then you filter down from there with the supporting ideas. The idea of giving away the punch line early is somewhat similar to topic sentences. I have to say, though I'm not a huge fan of topic sentences per se. I think it's confining. If you feel like you have to start every paragraph with an exact statement of the aim of the paragraph, I think that becomes monotonous. So don't feel like you need to go to the extreme of writing topic sentences. But you do need to be aware of the point of your paragraph, and you do need to clue your reader into this point early on.

In terms of paragraph flow, I want you to rely primarily on good logic to make your paragraphs flow well. Your reader should be able to follow you, because you are leading them through your ideas in an organized and logical manner. If you use logic, you don't need to give your reader a lot of flag posts and pointers as to where you're going. You can also use parallel sentence structure to help with flow. One strategy is to give adjacent sentences a matching structure. This helps with flow, and I'm going to show you some examples in a minute.

Finally, I do not want you to rely on transition words. I find that scientists greatly overuse transition words. Sometimes they use a transition where to start every sentence. Many scientists reach for transition words as a crutch to make up for the fact that their underlying logic is faulty. This doesn't work. Transition words aren't strong enough to fix underlying logic. That's not sound. Also, don't be too exotic with your transition words. You'll notice in a lot of professional writing; the favorite transition word is but B-U-T. It's a great way to indicate to the reader that, hey, I'm going to be changing years here. You don't need fancy words like nevertheless, or, on the other hand, just use but B-U-T. I tend to use just two transition words, but to indicate to the reader that I'm switching modes and A and D, to indicate that I'm tacking on some additional information.

The final tip on paragraphs is keep in mind that your reader will tend to remember the first sentence and the last sentence best. So you want to make those sentences memorable. Maybe have a little build up to the last sentence, a little emphasis at the end. that can make a really good paragraph.

In terms of a logical flow of ideas, what do I mean by that? You want your sentences to flow naturally from one to the next, e.g., you should generally go sequential in time, starting from the earliest event and ending with the latest event. That's what your reader expects. It's predictable and easy to follow. I'd like to say you should avoid the approach of that movie Memento, that was out in the year 2000, that had this very bizarre timeline where things didn't go in sequential order. That's a very, interesting and creative way to film a movie, but it's very hard on a reader of the scientific literature, so just go in order in time. Another way to make your, flow, your writing flow, logically, is to start with something that's a general and then move to the specific. Give the taco message the general point, and then give specific examples. Also, you can think about constructing formal logical arguments. I was a philosophy major as an undergraduate, so I took a lot of logic classes where we did if A, then B-A, therefore B. So I sometimes will actually outline the logical arguments that I want to make in my prose. That ensures that I have sound logic that's easy for readers to follow.

Just throw in an example here. I pulled this paragraph from a paper published in Science. I'm not going to read the whole example, but you can see that one. This is an intimidating block of text. Without even reading it, you already know it's going to be hard to get through. And two, most sentences in this paragraph start with a transition word. We get furthermore. Thus, however, however, thus, however, the reader is going to get whiplash with so many however indicating a change. Of course.

Here's an example of a well written paragraph. This comes from President Obama’s editorial essay in Wired magazine that I mentioned in an earlier module. It says, this kind of progress hasn't happened on his own. It happened because people organized and voted for better prospects, because leaders enacted smart, forward-looking policies, because people's perspectives opened up, and with them, societies did too. But this progress also happened because we scienced the heck out of our challenges. Science is how we were able to combat acid rain and the AIDS epidemic. Technology is what allowed us to communicate across oceans and empathize with one another. When a wall came down in Berlin where a TV personality came out Without Norman Barleg's Wheat, we could not feed the worlds hungry without Grace Hoppers code. We might still be analyzing data with pencil and paper. I want to point out some features of this paragraph first of all, what's the main idea of this paragraph? The main idea is that science has been integral to progress in the world. The bolded statement here, the bolded sentence, best states that idea. Another thing to point out is that only one sentence in this whole paragraph starts with a transition word. We get the word, but again, this is an excellent transition word to alert your reader that you're switching gears. But this is the only sentence that starts with the transition words that the paragraph flows beautifully without relying on transition, the paragraph flows because there's a nice buildup of ideas. We go from general to specific. We go from general reasons that progress has occurred in the world to one specific reason science. And then we get specific examples of how science has facilitated progress in the world. There's also some beautiful parallelism here. Science is how we were able to combat acid rain in the AIDS epidemic. Epidemic technology is what allowed us to communicate across oceans and empathize with one another. These two sentences match in terms of their structure. That's poetic, and it moves the paragraph along. Similarly, we get parallelism in the last two sentences. Norman burleg's Wheat without Dormand Burleg's Wheat We could not feed the worlds hungry without Grace hopper's code we might still be analyzing data with pencil and paper. They fall the seem exact set up which gained very elegant.

在下一个模块中，我们将从句子向上移动到整个段落。我们将在下周继续讨论段落，然后我们将进入整个构图。我想让你把这段话看作是你手稿的构图单位。每个段落都应包含一个主要思想。而且，当你整理手稿时，你应该分段思考。科学家们经常试图将太多的想法塞进一个段落中。他们最终会得到这些非常难以阅读的长段落，因为它们在没有明确重点的情况下蜿蜒浏览了许多不同的想法。当你转向新想法时，请使用该段落向读者描绘。你的段落应该简短。如果你像杂志一样学习专业写作，你会注意到他们的段落中可能有二、三、四甚至五句话。简短的段落不仅更具针对性，而且在页面上提供了大量空白。读者喜欢空白。对于读者来说，没有什么比看到一大块没有间断的文字更糟糕的了。作为读者，你知道这样的散文会很乏味而且很难读懂。读者喜欢页面上的简短段落和空白。当我编辑学生的作品时，我经常会把他们的段落分开。因此，请尽量使段落简短，并专注于一个想法。关于段落的另一个关键提示是，你应该尽早透露口号。科学家们不是这样想的，科学家们喜欢提供细节、细节、数据、支持数据、结论。科学家们就是这样想的。但是，当你去写东西时，我会鼓励你反过来。先泄露口号，结论，让读者知道你要去哪里。当读者不知道要点是什么时，他们很难先仔细阅读所有细节。在新闻界，我们称之为倒金字塔风格。你从最重要的一点，即带回家的信息开始，然后从那里向下过滤出支持性想法。尽早泄露口号的想法与主题句有些相似。但我不得不说，我不是主题句本身的忠实粉丝。如果你觉得每个段落都必须以确切地陈述该段落的目的开头，那就有限了。我认为这变得单调了。因此，不要觉得自己需要走到写主题句的极致。但是你确实需要意识到段落的重点，而且你确实需要尽早让读者了解这一点。在段落流方面，我希望你主要依靠良好的逻辑来使段落流畅无阻。您的读者应该能够关注您，因为您正在以有条理和合乎逻辑的方式引导他们完成您的想法。如果你使用逻辑，你不需要给读者很多关于你要去哪里的举报帖子和指示。您也可以使用平行句子结构来帮助实现流畅性。一种策略是为相邻的句子提供匹配的结构。这有助于流程化，过一会儿我将向您展示一些示例。最后，我不想让你依赖过渡词。我发现那个科学家过度使用过渡词。有时他们使用过渡词来开头每个句子。许多科学家将过渡词当作拐杖，以弥补其基本逻辑错误的事实。这行不通，过渡词还不够强大，无法修复不合理的底层逻辑。另外，不要对过渡词过于异国情调。你会注意到，在很多专业写作中，最喜欢的过渡词是B-U-T。这是向读者表明嘿，我要在这里换档的好方法。尽管如此，你不需要花哨的词语，或者另一方面。只用但是，B-U-T。我倾向于只使用两个过渡词。但是，向读者表明我正在切换模式。而且，A-N-D，表示我正在收集一些其他信息。关于段落的最后一个提示是，请记住，你的读者往往会最好地记住第一句话和最后一句话。所以你想让这些句子令人难忘。也许你在最后一句话之前有一点积累，最后有一点重点。这可以成为一个非常好的段落。就思想的逻辑流而言，我的意思是什么？你希望你的句子自然地从一个句子流向另一个句子。例如，您通常应该按时间顺序排列，从最早的事件开始，到最新的事件结束。这就是你的读者的期望，它是可预测的，而且很容易理解。我想说的是，你应该避开2000年上映的那部电影《Memento》的做法。那有一个非常奇怪的时间表，事情没有按顺序进行。这是一种非常有趣和富有创造性的电影拍摄方式，但对科学文献的读者来说却非常困难。因此，请及时按顺序行事。使你的写作流程合乎逻辑的另一种方法是从一般的东西开始，然后转向具体的东西。给出带回家的信息，总的观点，然后举出具体的例子。另外，你可以考虑构造正式的逻辑参数。我本科时主修哲学，所以我上了很多逻辑课，如果是a然后是b，a则是b。所以有时候我会实际概述我想在散文中提出的逻辑论点。这样可以确保我的逻辑合理，便于读者理解。这里举个例子，我从《科学》杂志上发表的一篇论文中摘录了这段话。我不打算读整个例子，但你可以看到那个例子，这是一段令人生畏的文字。甚至不读它，你就已经知道很难度过难关。第@@二，本段中的大多数句子都以过渡词开头。但是，因此，我们得到了进一步的了解。但是，读者会被鞭打得屁滚尿流，这表明方向发生了变化。以下是一个写得很好的段落的示例。这来自奥巴马总统在《连线》杂志上发表的社论文章，我在之前的模块中提到了这篇文章。它说，这种进展本身并不是发生的。之所以发生这种情况，是因为人们组织起来并投票支持更好的前景。因为领导人制定了明智、具有前瞻性的政策；因为人们的视角敞开了大门，社会也随之而来。但是之所以取得这种进展，也是因为我们对挑战进行了科学研究。科学是我们能够对抗酸雨和艾滋病疫情的方式。当柏林的隔离墙倒塌或电视名人出现时，科技使我们能够跨海交流，彼此同情。没有诺曼·博劳格的小麦，我们就无法养活世界上饥饿的人。如果没有Grace Hopper的代码，我们可能仍在用铅笔和纸分析数据。我想指出本段的一些特点。首先，这段话的主要思想是什么？主要思想是，科学是世界进步不可或缺的一部分。这里的粗体陈述，粗体句子，最能说明这个想法。要指出的另一件事是，整段中只有一句话以过渡词开头。我们明白了，但是。再说一遍，这是一个很好的过渡词，可以提醒你的读者你正在换档。但这是唯一以过渡词开头的句子。该段落流畅而不依赖过渡词。该段落之所以流畅，是因为有很好的想法积累。我们从一般到具体。我们从世界取得进步的一般原因转向一个具体的原因，即科学。然后我们得到了科学如何促进世界进步的具体例子。这里还有一些漂亮的相似之处。科学是我们能够对抗酸雨和艾滋病疫情的方式。科技使我们能够跨越海洋进行交流，彼此产生同情。这两个句子的结构相匹配。这很有诗意，它推动了段落的发展。同样，我们在最后两句话中得到了平行性。没有诺曼·博劳格的小麦，我们就无法养活世界上饥饿的人。如果没有Grace Hopper的代码，我们可能仍在用铅笔和纸分析数据。它们遵循完全相同的设置，同样，这非常优雅。