In Defense of PowerPoint

I started this essay in January 2004—over a year ago—but it lay hidden in my file of "in progress" writings. I didn't finish the essay because I gave an interview with Cliff Atkinson on the topic, but the paper goes into the issues in much more depth than the interview. So, here it is: it may be late, but the lessons are just as relevant as ever.

It has become commonplace to rail against the evils of PowerPoint talks; you know, those dull, boring never-ending ordeals where the speaker — or should I say "reader" — displays what appears to be a never-ending progression of slides, each with numerous bulleted points, sometimes coming on to the screen from unexpected directions in unexpected ways, each one being slowly read to the audience. PowerPoint should be banned, cries the crowd. Edward Tufte, the imperious critic of graphic displays has weighed in with a document entitled "The cognitive style of PowerPoint," in which, among other things, he credits poor PowerPoint slides with contributing to disaster with NASA's space shuttle Columbia, January 2003. (Tufte, E. R. (2003). The Cognitive Style of PowerPoint. Cheshire, CN: Graphics Press.)

I respectfully submit that all of this is nonsense. Pure nonsense, accompanied by poor understanding of speech making and of the difference between the requirements for a speech-giver, the speech-listener (the audience), and for the reader of a printed document. These are three different things. Tufte—and other critics—seem to think they are one and the same thing. Nonsense, I say, once again.

First point: Everyone agrees, I hope, on the undesirability of the long, boring talk in which the speaker reads things to us that we are perfectly capable of reading to ourselves. Bullet point slides often lead to poor talks, but the problem is with the talk, not with the tool. We have had poor talks long before PowerPoint. We have even had bullet points long before PowerPoint—long before computers. In the old days, people typed, stenciled or hand-lettered their slides onto transparencies which were shown with the aid of overhead projectors or wall charts, or photographed them on to glass-plated photographic slides and then, later, 35 mm. slides. These talks were also dull and tedious.

Let's face it: most people give poor talks. If we are lucky, the points are laid out logically, starting with the history, the current situation, the analysis, and the recommendations or conclusions. In other words, the dull stuff is presented first with the interesting part at the end, oftentimes missed because the speaker runs out of time.

The slides are written for the benefit of the speaker. They provide an outline and reminders of what is to be said. In the worst cases, they provide everything that is to be said, so the speaker need not think, but can simply read. After all, those who suffer from stage fright, or those with insufficient command of the material are not apt to be good thinkers when in front of an audience, so the slides are a necessary crutch. The question is, if the slides are for the speaker, why does the audience have to be subjected to them?
Good speakers start with something interesting. Start with an example. Get the audience interested in the talk. They whet the appetite. Then they present the necessary background information, but once someone knows what is coming, this same material can become interesting rather than dull and dreary when the same stuff is presented before the audience knows why. Academic speakers love to review the entire history of a problem, boring their listeners to tears and robbing themselves of valuable time in which they could be presenting their own views. Why? Because it is thought important to demonstrate one’s erudition. Bah. Let that come out in the question period.

Listeners cannot absorb too much information at once. Talks should be limited to getting across just a few critical points. The goal is to get the listener interested enough to explore the subject in more depth on their own, perhaps by reading, perhaps by conversation. If too much is packed into a talk, the listener becomes overloaded and is apt to remember less than if the talk were better paced with less information. Worse, the listener may simply give up and cease following. Perhaps even worse is that listeners might get interested and pause to pursue some implications mentally, only later to discover that they thereby missed other material.

This is one of the points Tufte has continually failed to grasp, not only in his diatribe against PowerPoint, but in almost all of his publications and talks. Tufte is a statistician and I suspect that for him, nothing could be more delightful than a graph or chart which can capture the interest for hours, where each new perusal yields even more information. I agree that this is a marvelous outcome, but primarily for readers, for people sitting in comfortable chairs, with good light and perhaps a writing pad. For people with a lot of time to spend, to think, to ponder. This is not what happens within a talk. Present a rich and complex slide and the viewer is lost. By the time they have figured out the slide, the speaker is off on some other topic.

Finally, let me review Tufte’s complaint about the presentation of data during the NASA Columbia incident. Here, Tufte points to a complex slide with 19 lines of text, with six different levels of hierarchy, displaying eleven sentences. The complaint, of course, is that the analyses failed to predict the actual damage that had occurred to the wing tiles when they had been struck by foam. Tufte goes on at excessive length to indicate why the slide is so poor and why it obscures information that might have led to a different conclusion. PowerPoint is bad, he concludes.

I differ most strongly with this assessment. Yes, the slide is very bad. Yes, it is almost incomprehensible. But in my opinion, the slide should have had less information on it—Tufte wants more information. He demonstrates this by showing how many words are on a page of a textbook. "So what?" I say. We read textbooks very differently than we listen to talks.

Look, it was a bad slide, but that isn't where the error lay. The error was in the conclusion reached by the experts. They did the analysis, and they decided that it was unlikely that significant damage had been done. Then they gave a PowerPoint presentation to others to announce their findings. The fault is with the findings, not with the slides.

As Tufte points out, there was a statement, in small type, at the bottom of one of the slides, that could conceivably have alerted the reviewers to the fatal flaw in their reasoning. But think about it: why was that point buried in the small print? It was presented like that because the experts had already considered the point and considered it not to be significant. Remember: this slide presentation was meant to present the conclusion of their report. Therefore, they highlighted the information they thought important and minimized the parts they thought not important. That is the absolutely proper way to
present a set of recommendations.

That critical slide was overfilled with information, not to hide the points, but because the experts did not believe them to have been significant. Now that the Columbia has crashed, we know the experts were wrong. But at the time, the experts were the best source of information available. Just because Tufte, in hindsight (when he already knows the answers), can look back and show they were wrong, and then point to discrepancies in their presentation, does not mean the fault lies in the presentation, nor in the tool used to present it. I believe the committee members did as good a job as they could, given the time pressures upon them, given the limited information available, and given the limited options they believed they had. The slide did not lead to their conclusion: the slide reflected their conclusion.

What would Tufte have speakers present to audiences? Overload, that's what. He critiques talk guidelines that stress that one should minimize material on any slide by showing a table from a 1662 analysis of deaths in London, pointing out that this one page contains 1,855 data points. He wants this in a talk? I can barely read it as I sit here in my chair, with good light, and with unlimited time. Hasn't Tufte ever heard of graphical displays rather than charts of numbers (I could recommend to him an excellent book on this topic, for example, "The visual display of quantitative information.")

Tufte doesn't overload the audience in his own talks—but that is because he doesn't present data as data, he presents data as examples of what slides and graphical displays might look like, so the fact that the audience might not have time to assimilate all the information is irrelevant.

Readers should get good clear information, with sufficient background presentation that they can re-interpret and re-analyze the material presented to them. Readers are not listeners. This means that speech giver should really develop three different documents.

1. Personal notes, to be seen only by the speaker, and used as a reminder of the topics and key points, or perhaps of the "bon mot," the clever, felicitously worded phrase that can appear spontaneously witty to the crowd, but which works best if it is prepared and practiced in advance, for few of us are good enough to actually think of them on the spot.

2. Illustrative slides. These slides should illustrate the major points and help motivate the listener. Tufte is apt to complain that this is simply "entertainment," but I respond that if the audience is not entertained, they are not apt to listen, and what good is a cleverly drafted talk if the audience is not listening. The illustrations should be relevant. They should convey new information. But they need not have words. They might have data, they might have graphs, they might have photographs of the product, equipment, phenomenon, or other aspect of the point under discussion. They should add to the talk, not distract from it.

3. Handouts. Here is where the speaker can put the references, the data, the appendices to the talk. Here is where one should indeed follow Tufte's advice and provide clear, detailed information that the reader can use later on to remember the points of the talk as well as to go on to further study and analysis.

Three separate and very different documents: Personal notes, illustrative slides, and handouts.

Don't confuse one for another. And don't blame the tool for a poorly prepared, poorly presented talk.

What tool do I use? Often I use no tool at all: Just me, talking alone. Technology audiences are often
horrified at first, but when I am finished they are often thankful. When I have points I want to illustrate, I use PowerPoint as an efficient way of presenting photographs and drawings. I don't use PowerPoint templates. I don't use bullet points and words in my slides, not unless I must.

If I need personal notes, they are written on small cards or a note pad that I place in front of me as I talk, to be seen by no one but me. As for handouts? I don't provide them. My books contain my messages. My talks are to motivate.

Some listeners complain about my lack of handouts, for they would like something to have afterwards to refresh their memory. I believe they are correct. I should provide something to take away. I seldom do, because I usually redo my talk even as I am presenting it, incorporating the points made by other speakers or the things I have learned during the day from members of the audience. Handouts are good, and for handouts, Tufte's prescriptions relevant.

Is PowerPoint bad? No, in fact, it is quite a useful tool. Boring talks are bad. Poorly structured talks are bad. Don't blame the problem on the tool.

Is PowerPoint responsible for the Columbia disaster? Don't be silly. The PowerPoint slides reflected the judgment of the committee. The critical point was in small type because the committee thought it unimportant. The surprise is that they included it at all — which implies to me that they were trying to be as complete and honest as they could. They were not trying to deceive.

In hindsight, everything looks easy. In hindsight, people make poor judgments. At the time, well, people do the best they can. Things are never as clear beforehand as they are afterwards, when the actual outcome is known. I leave you with the title of one of my very favorite research papers on this topic:


Disclaimer: I have no relationship with the PowerPoint team of Microsoft, but Microsoft is one of my clients.

return to essays >