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In corporate and government bureaucracies, the standard method for making a presentation is to talk about a list of points organized onto slides projected up on the wall. For many years, overhead projectors lit up transparencies, and slide projectors showed high-resolution 35mm slides. Now "slideware" computer programs for presentations are nearly everywhere. Early in the 21st century, several hundred million copies of Microsoft PowerPoint were turning out trillions of slides each year.

Alas, slideware often reduces the analytical quality of presentations. In particular, the popular PowerPoint templates (ready-made designs) usually weaken verbal and spatial reasoning, and almost always corrupt statistical analysis. What is the problem with PowerPoint? And how can we improve our presentations?

The Cognitive Style of PowerPoint: Pitching Out Corrupts Within Details

Date : Published January 1st 2006 by Graphics Press (first published 2003)

ISBN : 9780961392161

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Format : Hardcover 31 pages

Genre : Design, Nonfiction, Business, Psychology, Language, Communication, Reference

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Kiri says

Short, quick read (more like an extended pamphlet) that rages against the PowerPoint machine. Tufte makes some good points about how blind use of a pre-set template or format can unfortunately constrain our ability to think about things, especially detailed technical issues. He shows some cringe-worthy examples and especially dives deep into a critique of the PowerPoint slides supplied during the investigation of the 2003 Columbia accident. Painful.

And yet - although it does seem clear that PowerPoint is not suited to conveying deep technical data and analysis with appropriate nuance and caveats, it's also NOT well suited for the complete sentences that he loves. In most of the talks I give, the setting is one in which the audience does not want to (and will not) read long texts off the screen. Tufte's suggestion is to eschew PowerPoint in favor of handouts, which indeed can convey much more information more compactly. I like this too, but it doesn't necessarily work for seminars or conference talks. His analysis made me reflect on why. I think most of the talks I give are more about conveying ideas. I *do* minimize text content on my slides, but that doesn't make the talk itself information-poor; I rely on my words to convey the ideas. I maintain that this is more engaging and effective than giving the audience something to read. I also rely more and more on images in my talks, because that's what a screen is really great for!

I don't think PowerPoint was ever meant to be a standalone product - he's absolutely right that it is information-poor. The practice of printing out slides and distributing them is a horrible waste of space and paper. If you're going to print something out, an outline or short list of key points (or paragraphs, if you're Tufte) seems a far better choice.

I appreciate this book for inspiring reflection and critique!

Joshua says

This was a much more engaging read than I expected it to be. It's not just a cranky old academic complaining about style. He really rips PowerPoint apart. The in-depth analysis of the NASA incident is especially damning. PowerPoints were used in place of technical reports when they were assessing the damage to the Space Shuttle Columbia's wing. Although the evidence did not truly suggest the shuttle would be fine, the takeaway from reading the PowerPoints was that everything would be OK. Instead the shuttle overheated and blew up upon reentry.

This was especially interesting for me, having just recently finished "Understanding Media" by Marshall McLuhan. I could sense McLuhan's ideas underneath Tufte's text. Tufte argues that PowerPoint is a marketer's tool for sales pitches, which are not intended to deliver true information. They exist to manipulate the audience. And that is what has become of our scientific, academic and professional meetings. We do not deliver evidence with PowerPoint, we deliver a sales pitch. The result is poor decision making. I'd love to hear both authors thoughts about Twitter (if McLuhan was still alive). This has certainly changed my perception of PowerPoint.

Margaret Heller says

So right. I hear about the extreme misuse of PowerPoint in the federal government all the time from family members employed therein. Seeing the examples in here makes it even more alarming.

I dislike cutesy slides and boring slides both. As much as possible I try to present only salient graphics and photos. This can be challenging in teaching settings when you want to present a chart, but honestly I like to show the chart once and then draw it on the board later. I think that's probably more pedagogically useful.

Though I am ok with a picture of the presenter's cat during the question period.

Matthew says

I read this booklet before realising the same content is presented in a similar form in Beautiful Evidence ... anyway ...

I agree there are a lot of awful powerpoint presentations out there and I agree with many of Tufte's points. The detailed NASA slide analysis is excellent. That said this is a really odd book. It's a self published booklet rant. Some of the material, as mentioned, is good, but a lot of it is weak. Like the Gettysburg address powerpoint ... i'm sure this was a hilarious fw:fw:fw:fw: Funny! email to scroll through for 30s at some point, but why would you go and print the whole thing in a book?

The suggestion of swapping powerpoint for handouts to be read in advance seems wildly optimistic in most contexts (not a bad idea, but it is by no means a simple universal fix).

?Misericordia? ~ The Serendipity Aegis ~ ?????? ✨*♥♥ says

YES!

Q:

When Louis Gerstner became president of IBM, he encountered a big company caught up in ritualistic slideware-style presentations (c)

Q:

Slideware helps speakers to outline their talks, to retrieve and show diverse visual materials, and to communicate slides in talks, printed reports, and internet. And also to replace serious analysis with chartjunk, over-produced layouts, cheerleader logotypes and branding, and corny clip art. (c)

Q:

PP convenience for the speaker can be costly to both content and audience. These costs result from the cognitive style characteristic of the standard default PP presentation: foreshortening of evidence and thought, low spatial resolution, a deeply hierarchical single-path structure as the model for organizing every type of content, breaking up narrative and data into slides and minimal fragments, rapid temporal sequencing of thin information rather than focused spatial analysis, conspicuous decoration and Phruff, a preoccupation with format not content, an attitude of commercialism that turns everything into a sales pitch. (c)

Q:

The appropriate response to such vacuous displays is for people in the audience to speak out: "It's more complicated than that!" "Why are we having this meeting? The rate of information transfer is asymptotically

approaching zero," ... (?)

Trevor says

This is brilliant – there is no other word for it. For anyone who has suffered through more PowerPoint presentations than is reasonable to inflict on an unsuspecting universe – this will show you just how stupid the medium can make the message.

The major point of this short essay is that slideware (the proper name for PowerPoint) is generally so badly used that it makes it very hard to learn anything real from what is being presented at all. He makes this claim on the basis of the limitations of the presentation format itself. For example, the resolution is very low in PowerPoint presentations. It is hard to have anything like ‘enough’ text on the screen at any one time. So, everything ends up being written in headlines (or rather haiku) and this means that the text on the screen is ambiguous at best.

His other objection is that the bullet point format leads to remarkably poor thinking. A standard slide might have a title (one level of hierarchy), a series of dot points (a second level of hierarchy) and then some sub-dot points (a third level). Except that thinking is rarely this hierarchical (as he says, this stuff is Medieval in its structures – a place for everything and everything in its place). The problem is that these structures don’t necessarily make the sorts of sense that they might imply to the unwary. There may not actually be nearly so much order as is implied by the surface structure of the slides themselves.

Because this structure is virtually imposed by the software itself it makes it hard for those being presented to do anything more than just accept what is being presented to them. Intellectual engagement – other than as the receiver of information – is impossible by the fact of these slides being as they are. They are linear in the worst sense and do not allow the presenter to do anything other than present. But learning and teaching is supposed to be about responding to the needs of the audience as those needs appear. Well, that is not possible. So this software is for ‘lectures’.

As I was saying about the resolution of the screen one of the read problems with the screen is that it is hard to have very many numbers on one slide. He has a fascinating table in which he shows the number of data elements presented on a standard article in various newspapers or magazines – that is, if there is a graph or a table, how many bits of data is there generally on that graph or table. He then goes through a number of books on how to use PowerPoint and finds that overall the average of data items used on their slides is 12. This is 10 – 20% of the average number of data items of any other medium. The only other time he was able to find a medium that used less data in tables was in Pravda in the last years of the Soviet Union. His point is that more data allows analysis and comparison – the only reason for showing the data in the first place.

But his analysis of the Boeing PowerPoint presentations during the in-flight time when they were trying to work out if the shuttle Columbia was going to be safe to land is a fascinating example of how this marketing tool is being misused when it is being used for anything other than the dogmatic presentation of certain facts.

I like his argument – but disagree with it in the end. I absolutely agree about bullet points and think anyone who uses them should have real bullets fired at them. However, PowerPoint can be used well and can be a remarkably good learning tool. I’m just learning how to really design slides to engage by reading a book I bought (and have recommended to everyone I can find) *The Non-Designer's Presentation Book*.

But the final word should go to President Lincoln.

<http://norvig.com/Gettysburg/>

The more I think about that -87 the more I love it.

Kathrina says

Back in a classroom after 17 years, I felt awkward and inept concerning my ignorance of PowerPoint. I may have seen PP presentations back then, but I didn't put much thought into the software, just tried to focus on the content and let the presenter take authority for the presentation. I was never called upon to present one myself. This year my 7th grade son created a PP presentation on Burkina Faso, his first initiation into PP. Having pretty much no information on Burkina Faso going in, I found that after his presentation I still was coming up short. I understand they cook with potatoes. Well, it's 7th grade, what do I expect? The answer is, I should expect my son to come up with some valuable information and transfer it to his audience (for me, I'm a pretty blank slate here). Having some familiarity with my son, and now having some familiarity with the inherent limitations of PP, I realize that it was not entirely my son's fault that his presentation taught me something vaguely about potatoes. The format dumbs down information, fashioned more like a commercial than a teaching tool.

The irony is that I was assigned this reading in class. The concurrent class I'm in is requiring small groups to present once a week, and so far all of them have used PP to some degree. My number's up in early December, and previously I've been nervous about having to create my first PP presentation. Now, I feel somewhat relieved that my suspicions concerning its usefulness have been justified, but all the more fearful that my own conscience won't allow me to learn and use it even as its pretty much the assumed method of delivery. Can I get away with an informative handout? Should I let my group partners bear the weight of the PP part? Do I just acknowledge that it kind of sucks but do it anyway? But I hate clip art...Even more ironic, my presentation topic is "Literacy and Pedagogy". Tufte would have a field day.

Ben Appleby says

This is trash.

Of course powerpoint has its place and some times people use it inappropriately or out of place, but people's poor use of it does not define the benefits of the software. Anything complex can be simplified, which is what ppt does. If the specific details are needed then an alternative form of communication should be used.

Poor examples are used to support points, communism banter is distracting, and pulling quotes out of context does not support any argument.

Ubermensch says

a great work from the legendary Edward Tufte. I first heard about the book when taking a data visualization course, and of course Tufte's name will be brought up! Looking forward to reading his other books.

Em says

I wish that more people read this book, because 99% of PowerPoint/slideshow presentations are terrible. A lot of the time, people don't even need slides; they just make them because they're expected, rather than to improve the presentation.

David says

What's **your** Microsoft rage trigger? For years mine used to be the loathsome paper-clip assistant – it seemed like a perfect symbol of Microsoft's sneeringly obvious contempt for their users. Eventually, the continuing forced exposure to PowerPoint at my job became an irritant as well. There'd be days when I'd have to suffer through half a dozen PowerPoint presentations by my colleagues. Weeks where I'd end up having to prepare three or four slideshows of my own. This gave me plenty of opportunity to ponder just what a lame-assed piece of garbage PowerPoint was, to consider its various deficiencies and to despair at its insidious ubiquity throughout corporate America. It wasn't so much that PowerPoint triggered explosive rage – it was more of an ongoing slow burn.

So Professor Tufte's wicked evisceration of the program in this (very) slim pamphlet definitely struck a chord. Tufte argues that presentations developed using Powerpoint are more likely to suffer the following deficiencies:

- Inadequate resolution – not enough detail provided
- Important assumptions unstated or ambiguous
- Dumbed down content
- Complexity of arguments not adequately captured
- Data presented in a way that is unhelpful (and often misleading)

He supports his argument with three main case studies –

- the slide presentation made to NASA officials who had to make important decisions during the final flight of the space shuttle Columbia (infamously, legitimate safety concerns expressed by the engineering group did not survive the PowerPoint treatment, which sanitized them out of existence, with deadly consequences)
- what PowerPoint would make of the Gettysburg address
- the horror that can result from applying PowerPoint templates for statistical graphics to a straightforward table of relative cancer survival rates

His obvious relish at pointing out some of the worst excesses of Powerpoint in no way undermines the validity of his objections. Furthermore, as this pamphlet only runs to 28 pages, don't expect detailed advice on how to do things better.

Nonetheless, it is fun to watch him take down PowerPoint. Given the ubiquity of dreadful PowerPoint presentations in the workplace, this pamphlet should be required remedial reading for everyone.

Chris Hanson says

"The Cognitive Style of PowerPoint" has, at its heart, a reasonable message: Presentation software is no replacement for more technical forms of documentation and prose when making decisions. However, it suffers from two great failings: Petty hubris on the part of the author, and a lack of acknowledgment of the proper role of presentation software.

I'm not normally one to condemn a rant for failing to offer good alternatives - and this book (more pamphlet) is most definitely a rant - but one gets the impression that Tufte is as pissed off by presentation software's existence as much as its well-documented misuse. He offers good alternatives to standard bulleted slides for decision support services, but doesn't offer more than passing suggestions about what slides might be good for.

For the latter, check out "Presentation Zen" by Garr Reynolds. It'll teach you, no kidding, how to present like Steve Jobs and Reynolds is one who would know.

As for petty hubris, Tufte derides the use of clip-art, builds, transitions, as "PowerPoint Phluff." repeatedly. In exactly those terms. It's like reading circa-1998 Slashdot; I expected him to use "M\$" as well. Further, again, there's no mention of alternatives or tasteful use; instead, the reader is again encouraged to produce handouts with tables of data instead of charts that can be spoken to. Statistical illiteracy is one thing, willful blindness to the reality of presentation techniques is another.

All in all, it's worth a read if you present regularly, especially in a technical setting. However, don't let it be the only work you read on the topic: "Presentation Zen" and "Slide:ology" both will teach you what to do where "The Cognitive Style of PowerPoint" will explain what not to do with your tools.

Mr. Roboto says

If you are a Tufte fan and have high hopes for this short booklet, you may be disappointed. Sure, you're only paying \$7 for this slim volume, but it leaves much to be desired nevertheless. After the first few pages, we get it - Tufte can't stand PowerPoint (PP) presentations (neither can I) and believes they are a terrible crutch for weak, content-lacking, dumbed-down presentations.

The means PowerPoint provides for graphing data is neither informative nor intuitive, a point Tufte drives home repeatedly in this book. As much as Tufte slams PP's data plotting software, he doesn't really provide suggestions the user can implement to improve data slides in PowerPoint presentations. Instead, Tufte suggests using more intelligent, versatile software and relying on full-text reports and handouts.

If you are seeking validation because you are the only person in your office who hates PowerPoint, this book will remind you that you have a comrade in Edward Tufte. If you are looking for practical solutions for working with PowerPoint (instead of bypassing it and coming up with a different approach as Tufte suggests), you will be disappointed.

Lizzie says

A concise, biting argument against the cognitive mold that is PowerPoint, into which serious people transmitting information needed to make decisions pour complex information- and get a misshapen lump at the end. Using examples, most powerfully from NASA, Tufte demonstrates that narrative writing interspersed with "high resolution" charts and graphics is more clear and informative than the PP alternative. Tufte also sneaks in a few caustic but highly pertinent observations on the authoritarian nature of the PP presentation which prioritizes speaker comfort over clarity of transmission or audience interest.

Tufte calls for a return to the written agenda, to the technical report, and to guided discussions of high resolution aides as opposed to forced marches through linear slides and the "pre-sentence grunts" of bullet points. It's an important critique because even in organizations that have largely resisted death-by-powerpoint, a deliberate infantilization driven by bulleted talking points and relentless simplification has taken hold. Clear thinking and clear writing are powerfully linked, as Talking Points Memo so beautifully observed the other day with reference to Grant's memoirs. Given this, PP is the enemy of clear thinking and is poisoning policymaking from the inside out.

James says

I first learned PowerPoint while I was a graduate student in the 1990s. For a few of those years I was an in-house software trainer in a mid-sized specialty food packaging company, where training managers to use Microsoft products was a big part of my job. I was pleased with my PowerPoint skills, and never thought very deeply about the questions of epistemology raised by its reductionist, linear structure. I gave a lot of thought to its aesthetics and even attended a workshop on basic graphic design that helped me to make my PowerPoint presentations pleasing, even spiffy.

At the same time I was learning every detail of Office products, I was becoming an early user of the internet, and an early developer of educational websites. When I began full-time teaching, I used PowerPoint in many of my classes, put quite a few of my own PowerPoint presentations online, and even produced PowerPoints for a major textbook publisher. In our own region, I worked with other educators to put the work of their students -- mostly in PowerPoint format -- onto web sites. This was quite helpful in making the environmental work of area middle- and high-school students more visible to their communities and policymakers.

Fortunately, this led to a collaboration with a professor in our college's art department who had actual expertise in graphic design -- my expertise having been limited to a cartography course I had passed solely on the strength of my math skills and that one afternoon workshop in brochure layout. A turning point in my self-awareness about design came when I proudly showed that professor a PowerPoint slide I had made, using a template that placed water droplets all over a background field of bright turquoise.

"That's cute," she said. "Thank you," I said. "I am being sarcastic," she said.

Soon after, she convinced me to spend most of my year's allowance of professional-development funds to attend a one-day workshop led by Edward Tufte, an emeritus professor of statistics from Yale. When I entered the ballroom of the Park Plaza hotel, I found rows of tables, with a seat for each of several hundred participants. In front of me was a glass of cold water, a small stack of books, and a map of Napoleon's doomed march from Poland to Moscow and back.

For several hours -- with just a brief lunch break (lunch not included) -- the professor held forth on how to

communicate visually. For his examples, he did not use slides; rather, he had memorized the page number of each map, chart, drawing or photograph he wanted to share, and invited us to follow along in his own books. In doing so, he was heeding his own advice about the comparative richness of paper versus electronic screens. Periodically, a white-gloved assistant would walk through the room, showing us original versions of many of the images we were discussing, often first editions of the works of cartographers and mathematicians of bygone centuries.

I took those books back to my office, and dip into them from time to time. His presentation stays with me, and it has made me a more careful consumer of visual information, a sharper critic of design in many settings, and -- I like to hope -- a somewhat better visual communicator.

When Professor Tufte opened the floor for questions, many of them were variations on "What do you think of PowerPoint?" and "How can I apply this in PowerPoint?"

He was as polite as he could manage, but clearly perturbed by the repeated questions about a technology that is fundamentally at odds with the principles that guide his work and teaching. It does no harm, he suggested, for about 10 percent of its users -- those who are so good at presenting information that PowerPoint will not damage their work and those who are so poor at presentations that this poor tool can help at least to make their work coherent. For the rest of us -- the 90 percent in the middle -- PowerPoint makes us less effective as communicators.

I was not surprised, therefore, to see this thoughtful essay emerge three years later. (Sorry folks, the preamble is much longer than the review this time.) In it, Tufte takes aim not at the use of PowerPoint, but at what can go wrong when used as intended. He is not gentle in his critique: he casts the software as simplistic and authoritarian, and conducive to errors that can rise to the level of genuinely catastrophic.

He does so with a bit of humor, and takes a fair number of swipes at his Harvard rivals (though of the worst abuses of PowerPoint I have seen was by a library director from his beloved Yale). Tufte describes this work as an essay rather than a book, but the slim volume contains a wealth of insight. He continues to publish the work himself, both in order to offer it at a very low price (\$7 in print, \$2 electronically) and to control its visual presentation.

I require the book in several of my classes, as an antidote to much of what they have been taught elsewhere. I share it as widely as I can with fellow educators, as a way to combat the dreaded "bullet course" in which classroom presentation is reduced to a series of sentence fragments on a screen. Sharing the book is also, I hope, adequate penance for my many pre-Tufte PowerPoint presentations.
