Understanding and Using PowerPoint

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The relatively new and controversial medium of PowerPoint presentations has generated much casual commentary but little careful analysis or empirical research. This rhetorical study attempts to advance our understanding of the medium and provides practical guidance regarding deck design, rehearsal, and performance. The study considers the reasons for the controversy surrounding PowerPoint, offers a taxonomy of the kinds of content that appear in decks, and looks closely at how presenters interact with individual slides, in particular the way in which they "synch" to each bullet point and then "launch" an oral gloss of that point. In addition, the study provides criteria for writing bullet points and suggests reasons why presenters include excess text on their slides.

Oral presentations supported by sets of slides (or "decks") created with PowerPoint and similar products are an important communication medium, ubiquitous in business, government, and higher education (Parker 2001). This rhetorical study attempts to advance our understanding of the medium of PowerPoint presentations and offers practical guidance regarding deck design, rehearsal, and performance.

A key premise underlying my approach to PowerPoint is that human beings understand and look for logical relationships when processing information and make significant use of text signals when doing so (Matlin 2004, Lorch and Lorch 1995). What follows from this is that slide titles, bullet points, and other components of a deck should comprise a logical superstructure of ideas. Audiences can certainly cope with an illogical presentation, but violations of hierarchical subordination constitute a kind of "noise" and—depending on the genre and difficulty of the subject matter—may seriously impair understanding. Furthermore a presenter who is working from a poorly constructed hierarchy is apt to encounter problems creating the deck and delivering the presentation.

THE TROUBLED WORLD OF POWERPOINT

Despite its enormous popularity, there is broad anecdotal evidence that many people are dissatisfied by the quality of the PowerPoint presentations they attend. Furthermore, PowerPoint has been the object of considerable criticism and parody (Tufte 2003, Parker 2001, Stewart 2001, Norvig 2000, Jaffe 2000). Most notable is Edward Tufte, who regards PowerPoint as Stalinist and comes close to blaming PowerPoint for NASA's failure to prevent the Columbia Space Shuttle Disaster in 2003. PowerPoint also has staunch defenders, among them Shwom and Keller (2003), who respond at length to Tufte, and media theorist Rich Gold (2002), who celebrates PowerPoint in an insightful essay explaining the role of PowerPoint in organizations. There is certainly controversy in the world of PowerPoint.

Some of this controversy stems from the failure to acknowledge the very different genres of oral presentations and the implications of these differences. Whereas one of Edward Tufte's major objections to PowerPoint is that a slide cannot display nearly as much information as a sheet of paper, marketing expert Seth Godin (2001) insists that a slide should never contain more than six words. Clearly, both commentators have their hands on a different part of the elephant. Even when commentators make clear their assumptions about genre, unsophisticated presenters looking for quick take-aways may heed only the prescriptions and apply them where they don't fit.

Related to genre is the complexity of the content. Does the presentation convey substantive and challenging content or else "lite" content? Clearly many design issues turn on this difference. Much of my analysis applies across presentation genres, but I am primarily concerned with presentations that convey substantive content.

Another difficulty is that commentators routinely discuss decks without any knowledge of the performance. This is unsurprising and, indeed, often inevitable because the performance is usually unavailable to us. But unless we have attended the presentation or have access to a video recording, we are drawing our conclusions from only a part of the communication event.

THE INTERACTION BETWEEN PRESENTER AND DECK

We tend to think of a deck as a form of visual communication, and indeed it is. But a deck must also effectively support the performance, which in many ways is the more difficult task and the one we know less

about. Therefore, to better understand how to design decks that promote effective performance, we must look closely at how presenters interact with their decks. This is one of the strengths of Gold's essay, which compares deck content to a melody and the presenter to a jazz musician riffing on this melody. For Gold, an important part of these riffs are the presenter's personal comments regarding the official positions of the organization.

One characteristic of PowerPoint presentations is a distinctive rhythm that arises from the pauses that take place just before and, especially, just after the presenter advances to the next slide. Most PowerPoint presentations are "slide paced" in this manner. In contrast, presentations that do not employ PowerPoint or similar forms of visual support are "speaker paced." In speaker-paced presentations the presenter's pauses are less regular and more organic to the content.

We have all become accustomed to slide-paced presenting, and it is not dysfunctional. The new-slide pause gives the audience a moment to absorb or begin to absorb the slide content and gives the presenter some time to gather her thoughts. Even so, Cicero and Abraham Lincoln would probably consider this presentation style to lack momentum and dynamism.

Another important characteristic of PowerPoint presentations can be called "synch and launch." Synch and launch occurs when the presenter focuses the audience's attention on the next bullet point (or, in some cases, other kinds of slide content) and begins the oral gloss (to use Gold's term) on this bullet point. In phrasing the launch sentence, the presenter may read the bullet point, paraphrase it closely, or paraphrase it loosely. There is no precise moment when the launch sentence expands into the full gloss. The gloss may continue for some time and may include one or more digressions. As the gloss concludes, the presenter synchs to the next bullet point and then launches from this bullet point into its gloss. Synch and launch may include the use of non-verbal techniques such as pointing to the text with a light pen.

Some presenters execute synch and launch in a deliberate or even plodding manner. The technique (sometimes called "progressive revelation") in which each bullet point appears on the screen just as the presenter is about to gloss it results in a very deliberate style of synch and launch.

Other presenters synch and launch in a brisk or even glancing manner and rely on loose paraphrases. When presenters execute glancing synch and launches or bypass bullet points entirely, they are doing something akin to speaker-paced presenting. In my experience, however, audiences find it disconcerting when presenters bypass bullet points or when it is unclear which bullet point is being glossed.

A major implication of synch and launch is that slide text must be carefully written to enable an effective synch and launch. As we will see, synch and launch is badly hindered by poorly written bullet points. Another major implication of synch and launch is that presenters should not create decks and then rehearse them. Rather, they should engage in a reciprocal process in which rehearsals lead to improvements in the deck, resulting in better rehearsals and ultimately a more successful performance.

TEN CATEGORIES OF DECK CONTENT

A better understanding of PowerPoint will follow from a comprehensive taxonomy of deck content. In his brief but useful commentary, PowerPoint expert Geetesh Bajaj (2003) identifies four kinds of PowerPoint text: headings or titles, body text, decorative text, and captions or legends. Here I propose a taxonomy of ten categories of text and graphical content.

This taxonomy encompasses almost everything we find on decks, although those who examine decks may notice hybrids, borderline cases, and exceptions, especially in decks that depart significantly from standard slide layouts and design conventions. The taxonomy serves various purposes. First, it begins to supply the vocabulary and conceptual framework we need to rigorously study deck design. Second, it provides a reference point for the great diversity among decks. We can take note of tightly and loosely structured decks, deep and shallow deck hierarchies, and so forth. Finally, I think that the categories set forth here and my recommendations about their use help to define best practices.

The first three categories of the taxonomy consist of three kinds of special-purpose slides. These are (1) the identification slide, (2) the preview slide, and (3) the section slides. The other seven categories are components that we find on the standard slides that make up the core content of most decks. These are (4) location elements, (5) slide titles, (6) slide headings (7) bullet points, (8) exhibits, (9) decorative graphics, and (10) body text. These ten categories are explained by reference to hierarchical level, analogy with print documents, phrasing and appearance, and how they are glossed (or not glossed) during performance.

The Identification Slide (Identification Elements)

Almost all decks begin with a slide that identifies the presentation and places it within an organizational context. This slide consists primarily of identification elements. The identification elements vary with the genre and situation, but include the presentation's title and very often the presenter, date, sponsoring organization (typically with a logo), occasion (e.g., a particular conference or meeting), and legal status (a copyright notice). Certain identification elements such as the copyright notice, date, and the name or logo of the sponsoring organization may appear throughout the deck in the header or footer area.

The Preview Slide (Preview Elements)

The preview slide, when it is employed, appears directly after the identification slide. The preview slide carries such titles as "Agenda," "Contents," or "Topics for Today," and it consists of a list of preview elements that correspond to the presentation's main topics. The preview slide is akin to a print table of contents except that it doesn't provide access to particular sections of the deck. Rather, the role of the preview slide is to reveal structure. Presenters generally gloss each preview element to give the audience an overview of the presentation. Although preview elements may be formatted with bullets, preview elements are distinct from the category of bullet points. Together the identification and preview slides (and perhaps other introductory slides) comprise the front matter of the deck.

Section Slides (Section Titles)

Section slides, when present, appear at intervals throughout a deck. The defining element of a section slide is the section title, a brief phase that identifies the upcoming section of the presentation. Section slides, however, may include other content, notably preview elements that indicate the main topics of the section. Presenters often choose not to gloss section slides or to gloss them lightly.

Section slides usually correspond to the elements of the preview slide—though each kind of slide may be used without the other. Like the preview slide, section slides reveal structure, and together the preview slide and section slides comprise the top level of the deck's logical hierarchy. The longer and more substantive the presentation, the more reason to include a preview slide and section slides. As a reflection of their top-level status, section titles often appear in a large font and are placed in the middle or upper middle of the slide. Section slides, then, both visually resemble and function like the part divisions of a book.

Location Elements

Location elements consist of slide numbers and a header or footer indicating the section of the deck that the slide belongs to. So, for example, a "Wetland Recovery" header might appear at the upper right on all the slides dealing with wetland recovery.

Location elements work with the preview slide and section slides to help the audience understand the overall organization of the deck and the presenter's current location within it. When employing slide numbers, it is often desirable to include the total slide count with the slide number: 13 of 60. Nothing, however, beats a handout of the slides for enabling the audience to grasp the structure of a presentation and track the presenter's location within it.

Location information is never glossed. It is provided so that individual audience members can take note of it when they choose to.

Slide Titles

Almost all slide layouts employ a one- or two-line slide title, which is most often followed by a list of bullet points. In the absence of a preview slide and section slides, slide titles comprise the top level of the hierarchy. Directly subordinate to the slide titles are the bullet points, unless the bullet points are preceded by an intervening level, slide headings.

Slide titles, slide headings, and bullet points are roughly akin to the system of headings in a print document. Following this analogy, the oral gloss of a presentation is like the body text that develops the ideas that are encapsulated in the headings.

Sometimes there are too many bullet points to fit on a single slide. When bullet points spill over to a second slide, the slide title is repeated. This slightly awkward formatting requirement stems from a fundamental characteristic of PowerPoint, the fixed size of the slide.

Because section titles express topics, they are often phrased as noun phrases—for example, "Wetland Recovery." Because slide titles are lower in the logical hierarchy, they are more specific, and more laden with propositions—for example, "The Need for Greater Funding" or "More Funding for Wetland Recovery Is Needed." Slide titles should clearly indicate the main

idea of the slide. Slide titles are more apt to be glossed than section titles, but presenters may still let the text bear the entire communication burden.

Slide Headings

At times presenters add slide headings to introduce and group bullet points. Typically, the slide title is followed by a slide heading, several bullet points, another slide heading, and several more bullet points. Figure 1 shows a somewhat more elaborate layout with two slide headings positioned to the left of the bullet points. (The introductory sentence is discussed later.) The slide headings are apt to be glossed, perhaps heavily. Collectively the preview slide, section slides, location elements, slide titles, slide headings, and bullet points comprise the structural categories of deck content.

Figure 1. A slide with a title, an introductory sentence, slide headings, and bullet points

Bullet Points

Bullet points represent the lowest structural level of the hierarchy. The role of a bullet point is to briefly state an idea that the presenter will gloss. Because they represent the lowest structural level, bullet points are the most prevalent and most heavily glossed category of deck content.

On many slides bullet points are subdivided by lower-level bullet points. Lower-level bullet points enable the presenter to further subordinate slide content and provide more structure for the gloss. These lower-level bullet points often employ hyphens and other alternatives to bullet dingbats. At times, text elements that function as bullet points are formatted without bullets. Shwom and Keller recommend the use of such bulletless bullet points.

Often a list of bullet points is introduced by a lead-in phrase such as "Interior Web pages should". This phrase is then followed by bullet points that complete the phrase, in this case by listing functions of interior Web pages. I treat these lead-ins as a special kind of bullet point or, more precisely, as an implied addition to each of the bullet points being introduced.

Exhibits

Exhibits include graphics (diagrams, graphs, tables, and photographs) as well as motion graphics (video and animation sequences). Exhibits also include equations, quotations, and other key text elements. Exhibits are not structural, but each exhibit is associated with a particular structural element, such as a slide title, and so exists at a particular level in the hierarchy.

The test for an exhibit is that it is substantive (more than decoration) and that its communication function cannot be fulfilled through the oral channel. In the case of graphics, it is clear that language cannot fully communicate what we see on the screen. But what about key text elements? These must appear on the screen because the audience needs to examine them. What the oral channel cannot provide is persistence. Presenters often box text exhibits to differentiate them from other kinds of slide text.

Decorative Graphics

Decorative graphics are distinct from exhibit graphics. They add visual appeal and contribute to the deck's theme and mood but are not sufficiently substantive to be exhibit graphics.

Often a decorative graphic appears throughout the deck as a visual motif on the slide background. For example, a slide background might include a subtle computer-chip image to help express a high-tech theme or an unobtrusive rendering of foliage to suggest unity with nature.

Decorative graphics can also appear in the foreground as the focus of the audience's attention. For example, a deck used by a travel agent to sell vacations in Hawaii consists of eight sections, one for each of the major Hawaiian islands. For each section there is a section slide, with its section title—for example, "Maui." But each section slide also contains a large photograph—for example, vacationers sunbathing on a glistening beach. Might such a photograph be considered an exhibit? No. This is because the photograph, while thematically relevant, still lacks substantive content. Note that decorative graphics, if glossed at all, are apt to be

glossed lightly. For example, after displaying the Maui section slide with its beach photograph, the travel agent is apt to say something like "Oooh, doesn't this look nice" and then proceed to the next slide.

One further function of decorative graphics is as a placeholder. Let's assume one of the standard content slides in a deck consists of a slide title and a single bullet point. Or perhaps there is no bullet point. At least according to the current conventions of PowerPoint design, such a slide would be considered bare and unattractive. The presenter, then, might visually fill out the slide with a thematically relevant decorative graphic.

Body Text

Body text is a broad, catch-all category. It consists of the detailed, non-structural text that resides at the very bottom of the presentation's logical hierarchy. It can appear anywhere below the slide title. There are appropriate uses for body text, but the potential problem is that the oral channel is ***also*** the bottom level of the presentation's logical hierarchy, and so body text often overlaps and conflicts with the oral channel, impairing the presentation. Many decks are ruined by long passages of body text.

One appropriate use of body text is as an introductory sentence or phrase that appears below the slide title and provides useful context for a bulleted list (and other categories of deck content). See, for example, the introductory sentence in Figure 1. Note that this function is distinct from the lead-ins that may be used with bulleted lists.

Incidental information often appears on a slide as body text so that the presenter can exclude this information from the oral channel. Captions and citations fit this category along with incidental text elements such as this one: "This specification is current as of May 1, 2005." More than any other category of deck content, body text must be carefully coordinated with the oral channel.

WELL-CRAFTED AND FAULTY BULLET POINTS

Because bullet points are so central to PowerPoint, I focus on them here. I propose five criteria for well-crafted bullet points, demonstrate how such bullet points contribute to an effective presentation, and show the far-reaching consequences of faulty bullet points.

Criteria for Effective Bullet Points

To communicate well on the screen and help the presenter speak effectively, bullet points should be (1) structural, (2) meaningful when read by the audience, (3) brief, (4) professional rather than conversational in phrasing, and (5) written to incorporate at least one keyword. I exclude from this list of criteria the requirement of a reasonable degree of parallelism and other principles of effective writing that apply to lists of all kinds.

Structural. Bullet points must be structural; they must state an idea that is elaborated upon in the gloss. Presenters should beware of non-structural body text masquerading as a bullet point.

Meaningful. Audiences are likely to read bullet points during the new-slide pause and at other times. Therefore, in most genres at least, the basic idea expressed by a bullet point should be meaningful without the oral gloss. A bullet point can't tell the whole story, but audiences are disempowered when bullet points make little sense.

Brief. While bullet points should be long enough to be meaningful, they should not be verbose. A general guideline is that bullet points should rarely exceed 15 words.

Verbose bullet points clutter the slide and can't be easily read by the audience before they are glossed. More important, verbose bullet points hinder an effective synch and launch: If the presenter glosses a verbose bullet point closely, the presenter must do a lot of reading or close paraphrasing—a behavior that, quite rightly, annoys audiences. People do not want presenters reading to them. If the presenter paraphrases loosely or launches into a digression, the audience must choose between listening or reading the bullet point. In contrast, when bullet points are brief, the presenter can synch and launch by closely paraphrasing or even reading the bullet point.

Nonconversational. In most cases, bullet points should not be conversational. Rather, they should employ the diction and style we associate with professional writing. In a presentation about getting ahead in the workplace, the bullet point "Educate your manager" is better than "The trick is to educate your manager." When bullet points are professional in their phrasing, they are a better foil for the presenter's oral gloss. Stated differently, the presenter, not the deck, is conversing with the audience.

Keyworded. A keyword is a word or phrase that individually expresses one of the core concepts of the bullet point. For example, the bullet point "Growth in membership" contains the keywords "growth" and "membership." Every bullet point should contain at least one and preferably several keywords.

As shown later, keywords help presenters generate good synch and launch sentences. This is because keywords are good starting points: They help the presenter find a congenial opening phrase. In addition, a keyword helps the audience synch to the bullet point. As soon as the presenter utters the keyword, the audience realizes that the previous gloss has ended and a new one has begun. This match-up between the written and spoken word is especially helpful to the audience member who for some reason has gotten untracked.

Keywords tend to appear naturally in bullet points that adhere to the previous four criteria. On the other hand, note that in this conversational variant on the bullet point "Growth in membership" no keyword appears: "We're doing better all the time."

A Closer Look at Bullet Points

I more fully demonstrate the efficacy of these criteria by comparing several variations on a particular deck. Figure 2 is a slide from a hypothetical presentation reporting on a reproductive health research project. The slide is not elegantly written but it is entirely serviceable. It contains three bullet points, each stating a problem encountered by the researchers.

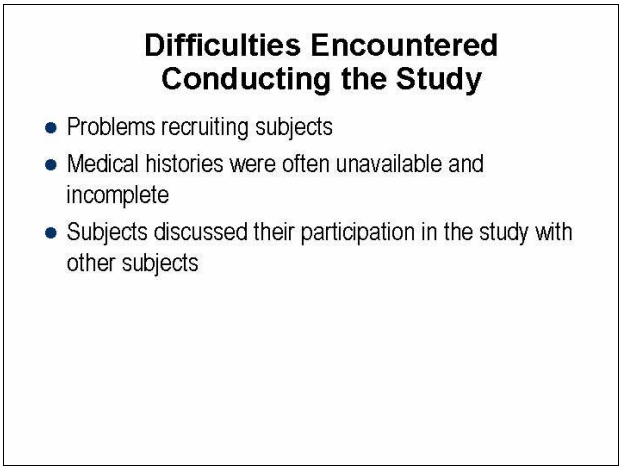

Figure 2. A slide with well-crafted bullet points

The first bullet point ("Problems recruiting subjects") is well crafted and meets all five criteria. (Note that each of the three words is a keyword.) Not only does this bullet point communicate effectively on the slide, it is highly "generative," meaning that it enables the presenter to easily generate an effective synch and launch sentence in real time. Except for cases when presenters have largely memorized what they will say, this is a major virtue.

Two of many potential synch and launch sentences that arise naturally and easily from the bullet point "Problems recruiting subjects" appear below:

> One of the problems we faced conducting this kind of study in a small rural community was initial suspicion about what we were trying to do. This made it hard to recruit subjects.

> Recruiting subjects was a major problem. Because Centerville is a small rural community, residents were suspicious about the project.

We can easily envision either of these synch and launch sentences broadening out nicely into the full oral gloss:

> We surmounted this problem by maintaining a friendly presence in Centerville, engaging community leaders, and carefully explaining the study to potential subjects.

After completing the gloss on this bullet point, the presenter will gloss the bullet points stating the second and third problem the researchers encountered. In each case, the gloss elaborates on the problem and explains how the researchers addressed it.

A poorly written variant of this slide appears as Figure 3.

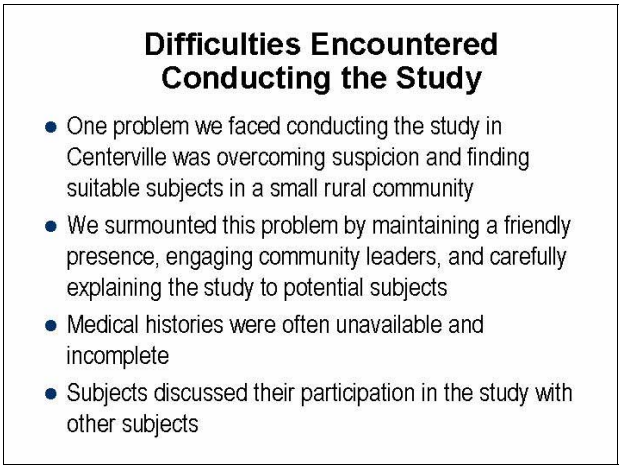

Figure 3. A slide with two poorly written bullet points

The first bullet point is a verbose variant of "Problems recruiting subjects," It is slow paced ("One problem we faced") and also includes items of non-structural detail: that the problem stemmed from suspicion and that the researchers were working in a small rural community. These details are best left for the gloss. As discussed below, the presenter is surrendering to the temptation to offload content to the slide. This bullet point contributes to a cluttered screen, it cannot be easily read by the audience before it is glossed, and—most important—it hinders the generation of a good synch and launch sentence.

The second bullet point is more than just verbose. Rather, it consists entirely of information that should appear in the gloss. This is not unusual, for once a presenter starts telling his story on the screen, he may well continue to do so. This bullet point violates the logic of the slide because it describes solutions and does not belong on a slide devoted to stating problems.

Further difficulties arise from verbose and non-structural bullet points as well as other forms of excess slide text. Let's envision one more variation on this deck in which the presenter includes sufficient detail about the problem of unavailable and incomplete medical histories that she winds up with a full slide on this topic: "Medical Histories Were Often Unavailable and Incomplete."

The excess slide text contributes to a dysfunctional proliferation of slides. In addition, the deck's logical hierarchy has been confused. The slide title "Medical Histories Were Often Unavailable and Incomplete" is logically subordinate to but visually coordinate with its fellow slide title "Difficulties Encountered Conducting the Study," whereas the other two problems (recruiting subjects and subjects talking with one another), appearing as bullet points, are—as they should be—visually and logically subordinate to "Difficulties Encountered Conducting the Study."

This situation will not cripple a presentation; audiences can recognize subordination even when the slide layout obscures it. But decks are easier to grasp and easier to speak from when the slides exhibit the careful logic of a good outline or set of headings. If the presenter truly needs to explain a lot about medical histories, a verbose slide is not the answer. Better to expand the gloss and, possibly, add subbullets to the medical histories bullet point in order to provide structure for the longer gloss.

Reasons for Excess Slide Text

It is important to understand why we see verbose bullet points, non-structural bullet points, and other kinds of excess slide text. Apart from simple unawareness of good design, there are, I believe, three harmful impulses that consciously or unconsciously influence presenters: performance anxiety, fear of losing ideas while preparing the presentation, and designing for standalone mode. If presenters become more aware of these impulses, they can better defend against them.

Performance anxiety. Presenters are often afraid that words will fail them, and so they want their slides to do much of the work. Presenters, however, must trust themselves to generate appropriate oral discourse in real time. That is what well-honed speaking skills and careful deck development and rehearsal are meant to achieve.

Nervous presenters may also want their slides to serve as speaker's notes. Speaker's notes, when employed, are solely for the benefit of the presenter and should not appear on slides. One good technique is for the presenter to bring a printout of the slides to the podium. A printout reminds the presenter what slides lie ahead (location awareness) and can be used to jot down the first few words of some of the synch and launch sentences.

Fear of losing ideas. As they develop their deck and rehearse their presentation, presenters inevitably think of good arguments, apt examples, and other ideas for the presentation. Some presenters become uneasy fearing that they will forget these ideas, and so they work them into the slide text. Note how the fear of losing ideas readily joins with performance anxiety to fatten slides. It is much better for presenters to capture their ideas by typing them into PowerPoint's notes pages or somewhere else and then work these ideas into the oral channel during rehearsal.

Designing for standalone use. Finally, presenters usually know when their deck will appear in a conference proceedings, be posted on the Web, or otherwise enjoy a second life in standalone mode. The expectation of standalone use often motivates presenters to add extra content to the deck so that it will be meaningful without the oral channel. This impulse is reasonable but is still apt to impair the presentation.

If presenters are appropriately wary of verbose decks, they will look for a better means to support the standalone audience. Perhaps they can create a more detailed deck for publication in the proceedings. If the deck will be published on the Web, PowerPoint's notes pages can be carefully annotated for the benefit of the Web reader. If the only way to support the standalone audience is to add text to the deck that will be used for the presentation, the presenter can at least work extra

hard writing the text and rehearsing so that the presentation will be minimally impaired.

CONCLUSION

PowerPoint seems simple. Almost anyone can type slide titles and bullet points. When I mentioned to acquaintances that I was working on a paper about PowerPoint, some wanted to know what there was to write about. PowerPoint, in fact, is complex. It is complex because it encompasses the challenges of public speaking; because graphs and diagrams and (increasingly) multimedia components often appear on slides; but also because we must carefully consider the layout and appearance of the slides, the phrasing of the slide text, and the overall structure of the deck—both as visual communication and as support for the oral channel.

Not only is it complex, PowerPoint, along with other presentation applications, is also enormously important. Each day vast numbers of people meet to exchange ideas and make decisions with PowerPoint on the wall. PowerPoint, therefore, warrants careful study. This includes paying close attention to the differences among presentation genres and the differences in the styles and techniques of presenters. We need experimental studies that determine the impact on audiences of different deck designs and differences in presenting. For example: What are the implications of tightly and loosely structured decks for communicating different kinds of content? Are there circumstances when displaying bullet points successively (progressive revelation) disempowers the audience by reducing their opportunity to fully evaluate a set of assertions?

Finally, we should not be casual about our own decks and presentations, and we should not be tolerant of bad PowerPoint. Tufte and the other harsh critics of PowerPoint are certainly right about this. Even in routine circumstances, in meetings and at events that no one will long remember, good professional practice—clarity, focus, positions supported with sound evidence, etc.—do something to raise the bar for the future use of the medium.

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