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Toward a better understanding of PowerPoint deck design

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The critical landscape surrounding PowerPoint is highly troubled. Empirical research is scarce, and commentators share little common ground and have taken highly divergent positions. Often arguments are unnuanced and flawed. This review essay identifies and discusses ten problems that have confused and hindered the study of PowerPoint. Among the problems are these: The lack of terminology for categorizing deck content; the need for a more sophisticated understanding of mediation (how PowerPoint "edits thought") and the relationship between PowerPoint and organizational culture; the formulation of broad arguments based on a narrow set of presentation genres; the habit of regarding slides as standalone artifacts divorced from the presentation; and insufficient attention to context (the particular circumstances surrounding a presentation) including the personal style of the presenter. If we can achieve a healthier critical landscape, we will see better commentary, research studies, decks, and presentations.

Because PowerPoint is so very prevalent in our culture (Parker, 2001), it requires and will ultimately receive rigorous scholarship and empirical research. As of now, however, the critical landscape surrounding PowerPoint is troubled. There have been few empirical research studies. Also much of the non-empirical work consists of casual essays and reviews rather than formal scholarship. (For this reason, the broad term used here for the non-empirical work on PowerPoint is "commentary.") Much of this commentary is of limited value, consisting of brief articles in the mass media that are either opinion pieces or feature stories reporting on the controversy surrounding PowerPoint (or a combination). A typical article is Stewart's "Ban It Now! Friends Don't Let Friends Use PowerPoint" (2001). Two important essays by Parker (2001) and Gold (2002) are still very casual in their construction and style of argument, as is Edward Tufte's famous 2003 attack on PowerPoint, a self-published booklet (2nd ed., 2004).

Apart from the plenitude of casual commentary and the shortage of scholarship and empirical research, there are troubling aspects to the viewpoints and arguments that have been expressed. First, the opinions of commentators diverge sharply and include much sweeping condemnation of PowerPoint: there is little common ground. Second, the tone of the PowerPoint debates is often surprisingly harsh (a phenomenon from which I am not exempt). Third, casual commentary tends to promote unproductive arguments, and commentators have often staked out unnuanced and faulty positions – for example, making broad claims about PowerPoint based only on a particular presentation genre. At times, the premises underlying arguments are only half-revealed. The fourth

problem is ambiguity surrounding basic terms, notably "bullet point" and even "PowerPoint."

The essay begins with a brief review of the critical examination of PowerPoint. Then I discuss ten topics which, I believe, if left unaddressed will make further scholarship, research, and design work more difficult and less productive. In discussing these ten topics, I try to uncover reasons for disagreement and confusion, and I point out ill-conceived arguments. This essay is not an attempt to discuss the full range of unanswered questions regarding PowerPoint, but to add clarity to the critical conversation and help create a healthier critical landscape.

I do not pretend to have fully stepped away from my own viewpoint regarding PowerPoint, and I state it here: While I believe that much can be done to improve the quality and effectiveness of typical PowerPoint decks (sets of slides), my ideas for change do not include radical departures from standard designs. Also, my ideas about deck design are in large part performance-driven. That is, they are based on the close connection between the deck and the speaker's performance, how the individual speaker works with the deck.

A brief review of PowerPoint commentary and research

To speak of the communication medium of PowerPoint presentations is a convenient shortcut for a more formal definition: presentations supported by computer-based visuals employing a slide-show metaphor. This medium dates back to the commercialization of computer projectors in the early and mid 1990s (Endicott, 2000; Parker, 2001). In 1987, when PowerPoint was first introduced, it was used to create overhead transparencies (Endicott, 2000).

With the widespread adoption of PowerPoint came complaints (Searls, 1998; Nunberg, 1999), often very general statements reflecting dissatisfaction with modern media and communication practices as well as the dysfunctions of organizational culture. Also, PowerPoint is almost certainly caught up in the widespread anti-Microsoft backlash (Nunberg, 1999; Stewart, 2001; Tufte, 2004).

In 2000, computer scientist Peter Norvig, exasperated by the number of bad PowerPoint presentations he had attended, ridiculed PowerPoint by creating an absurd PowerPoint version of Abraham Lincoln's Gettysburg Address using PowerPoint's AutoContent wizard (Norvig, undated; Norvig, 2000). (The Gettysburg Address is a brief and very solemn speech that is revered in the United States.) Posted to Norvig's website, this deck received considerable media attention and many browser "hits."

In 2001, Ian Parker, writing in *The New Yorker*, further developed the ongoing theme in PowerPoint criticism that PowerPoint, in particular bullet points, "edits thought" in harmful ways. In his 2003 booklet, graphics guru Edward Tufte declares PowerPoint to be "Stalinist" and very nearly blames PowerPoint for NASA's failure to prevent the Columbia Space Shuttle disaster. Among Tufte's arguments are that bullet points leave the presenter's ideas unspecified and allow key points to be hidden. Tufte also demonstrates in considerable detail that visuals displayed with PowerPoint convey less data than paper handouts. Tufte's broad conclusion is that PowerPoint has a pernicious cognitive style that impairs thinking and communication. Tufte's arguments were picked up by mainstream media and have been echoed many times. But they have also been answered by Shwom and Keller (2003) and Doumont (2005), among others. Though seriously flawed, Tufte's commentary raises important issues that need to be explored.

Rich Gold, recently deceased, was a media theorist at Xerox PARC. Gold offers a very different perspective on PowerPoint, declaring that he loves the medium (1999, 2002). Gold emphasizes the relationship between the deck and the presentation. In Gold's terms, the presenter

"glosses" (elaborates upon) bullet points and other elements of slide content, much as a jazz soloist improvises a melody. Farkas (2005a) looks more closely at how glossing takes place and at the relationship between the phrasing of bullet points and how they are glossed.

Gold's analysis of PowerPoint encompasses the role of PowerPoint within organizations. He notes that while slides tend to express the consensus of the organization, the presenter's glosses are opportunities to offer the individual's own thinking. Presentations themselves are a rite of passage, an opportunity for self-display, and a means for groups to bond and prepare for collective action. Gold also discusses the sharing of slides among co-workers. Sharing slides is both part of the system of exchanging favors and a means through which an evolving corporate consensus is communicated. Gold's essay and the sophisticated study of PowerPoint use in organizations by Yates and Orlikowski (2006, forthcoming) offer a promising starting point for a comprehensive theory of deck creation and use.

In a highly visible trade book, Cliff Atkinson (2005) supports the use of PowerPoint but prohibits its most defining feature – bullet points – in favor of slides consisting only of a title and a graphic. Alley and Neeley (2005) reject conventional bullet points but advocate the use of bulletless list items accompanied by small graphics. At the same time, many books on public speaking and professional communication show mainstream decks as models to be emulated (Alred, Brusaw, & Oliu, 2003; O'Hair, Stewart, & Rubenstein, 2004).

Among the small number of experimental studies are Guadagno, Asher, Sundie, and Cialdini (2006), Szabo and Hastings (2000), Blokzijl and Naeff (2004), and Blokzijl and Andeweg (2005). A limited but useful survey of PowerPoint use was conducted by Fox and Cueva (2004). Blokzijl and Andeweg's study is especially comprehensive and valuable. This study demonstrates that students in a lecture setting learn more from a PowerPoint presentation than from a comparable lecture unsupported by PowerPoint and that a personable speaker attains a higher level of audience satisfaction and learning than a low-affect ("wooden") speaker who does little more than read. The study also shows that students learn more when extensive, rather than minimal, slide text is used.

One limitation of this study and almost all experimental studies is that they were conducted in educational rather than corporate settings. We need studies of both student and non-student audiences, studies of the process of deck design and performance (why skilled and unskilled presenters do what they do), and studies of PowerPoint use within organizations. Furthermore, we need probing scholarship, especially theory on issues that are not amenable to empirical research. I turn now to the ten issues and arguments that stand as impediments to theory and research.

Terminology

Just this brief literature review reveals terminology problems. First, as Doumont (2005) points out, the term "PowerPoint" has several meanings. It refers to a particular software product produced by Microsoft but is also shorthand for a category of software (often called "presentation graphics") that includes Apple's Keynote, IBM's Lotus Freelance Graphics, and the Harvard Graphics presentation products. In addition, the phrase "PowerPoint" is often used loosely for presentations in which this kind of software is employed, as in "PowerPoint makes meetings dull."

While the phrase "PowerPoint presentation" suggests face-to-face communication, presentations can also be recorded and made available on the Web (Schwartzman & Tuttle, 2002). These via streaming media presentations may only provide audio narration, but they may also show the presenter and may even provide views of the audience. As discussed below, there are also "standalone"

decks that are either viewed apart from the original presentation or are created specifically for standalone use. Further variations on PowerPoint use are described in Yates and Orlikowski (2006, forthcoming). Finally, while "PowerPoint presentation" suggests at least some degree of adherence to the standard design elements of slide titles and bullet points, the PowerPoint application can be employed as a "blank canvas" for any kind of layout.

More troublesome are the ambiguities we confront when talking about the kinds of text and graphics that appear in decks. The term "bullet point" is usually a shortcut term for a set of listed items (often with multiple levels) preceded by standard round bullets, hyphens, pointing fingers, and other typographical symbols ("dingbats"). But not only do we see bulletless list items (Alley & Neeley, 2005; Shwom & Keller, 2003), we see list items that function in ways we do not regularly acknowledge. For example, in Figure 1, the list items "Recommended for flatwater" and "Recommended for whitewater" perform a grouping function and seem more like headings than standard list items. There is also an important distinction between the list items that appear at the beginning of a deck (or the beginning of a section of a deck) and preview upcoming topics (often appearing later as slide titles) and list items such as "Wood – beautiful, high-maintenance" that do not preview upcoming content. Another cause of confusion is the idea that bulleted list items cannot be complete grammatical sentences (Fox & Cueva, 2004; Bajaj, 2003). Bajaj writes: "sentences are 'out', bulleted lists are 'in.'"

Finally, some elements of slide text perform hard-to-classify functions. For example, "For every paddler, there's a good option." is not part of any list and appears to be an elaboration on the slide title that sets the context for the subsequent slide content. There have been efforts to categorize slide content (Bajaj, 2003; Farkas, 2005a), and at least some degree of standardized terminology based on a sound categorization scheme would benefit ongoing critical discussion.

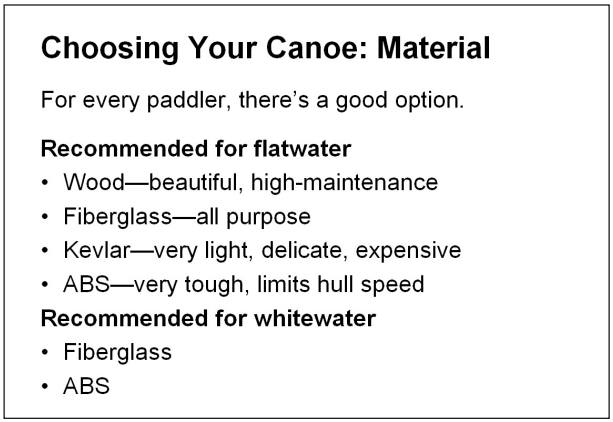

Figure 1. A slide with text elements that are hard to categorize

PowerPoint and organizational culture

One of the most complex PowerPoint issues is sorting out the cause and effect relationships between PowerPoint and organizational culture (and society in general). This is important because the outcry against PowerPoint has been so widespread and damning that we must consider whether truly drastic changes in deck design are necessary.

Certainly the PowerPoint application is not a "neutral" tool; like all tools, it constrains the products it generates, and affects those who employ it (Yates and Orlikowsky, 2006, forthcoming). Furthermore, PowerPoint presentations like other media may pervasively affect their audiences. Tufte (2004) is justified in asking whether PowerPoint presentations are harmful, just as we can reasonably ask whether the medium of television is harmful. On the other hand, it is overly deterministic to view either the PowerPoint application or the PowerPoint medium as an autonomous force unconnected to its context or to assume that all PowerPoint presentations will have the same effect.

So where do we look for the causes of bad PowerPoint presentations? Likely answers are not far to seek: One is the prevalence of professionals in all fields who are unskilled at presenting and at all forms of visual and written communication. Another is the impact of dysfunctional organizational culture *on* PowerPoint use. Even if we make strong assumptions about the deficiencies of PowerPoint, it cannot be the main cause of bad management, flawed thinking, dishonesty, unnecessary and poorly planned meetings, and the use of PowerPoint when other means of communication are more suitable. Even while Tufte (2004) is trying to blame PowerPoint, he is largely blaming the organizational culture at NASA, and as Shwom and Keller point out, bad reasoning at NASA was quite independent of anything that was done using PowerPoint.

Not only are bad PowerPoint presentations in large part a consequence of dysfunctional organizational culture, but it is highly likely that dysfunctional organizational culture underlies much of the frustration and anger directed at PowerPoint. We can see this in the extensive anti-PowerPoint humor that arose (during peacetime) in the U.S. military (PowerPoint Pogue's Homepage, 2005; Top Sarge Productions, 2005). For example, the "Ballad of the PowerPoint Rangers," in which deck design is portrayed as the most important military skill, largely reflects dissatisfaction with the bureaucratic nature of military life and military policies.

Genre

Just as there are genres of print documents, there are genres of PowerPoint presentations. There are differences – familiar to audiences – between an official welcoming talk at a banquet, a sales presentation to a potential customer, a review of policy options at a public meeting, a technical briefing within a workgroup, and a scholarly presentation at an academic conference. One of the differentiators that runs through these and other presentation genres is the level of technicality.

Some of the difficulty surrounding PowerPoint results from commentators fixing on particular genres and not adequately acknowledging that there are other, very different presentation genres. For marketing expert Seth Godin (2001), the world of PowerPoint is a world of "lite" genres in which there is relatively little information for the audience to process. This assumption is a key reason why he insists that no slide should ever contain more than six words. Atkinson's belief that slides should contain no text other than the slide title and his emphasis on clip art reflect unstated assumptions that the content will be "lite." (Atkinson, 2005; Farkas, 2005b). In contrast, Tufte (2004) and Alley and Neeley (2005) are primarily concerned with technical genres. It is necessary to be clear about the genres and level of technicality to which one's scholarly work on PowerPoint pertains.

Performance support and standalone use

The core use of PowerPoint and similar applications is to create decks that support face-to-face presentations. Often, however, PowerPoint decks created to support a live presentation have a second life in "standalone mode," separate from the live presentation. This can happen when a handout consisting of the presenter's deck (usually printed as thumbnail images) reaches people who did not attend the meeting, when a handout is reprinted in a conference proceedings, or when the presenter's PPT file is emailed or made available on the Web. There is also a newer use of PowerPoint: decks created solely for standalone use, often with extensive supplementary text added in PowerPoint's Notes pane.

A potential design problem and a frequent cause of confusion among commentators are the separate goals of designing both for a live audience and for subsequent standalone use. If the slides are optimized for the live

audience, they may be too sketchy to fully serve the standalone audience. On the other hand, if the presenter is trying hard to accommodate the standalone audience, there may be too much text for the live audience. The audience, then, will likely have to choose between reading the extensive text or listening to the presenter – a dilemma that is poorly resolved if the speaker becomes a human reading machine and reads slides verbatim (Doumont, 2005; Norman, 2004). Commentators should be careful not to confuse the two goals when discussing PowerPoint. Probably the biggest problem in Tufte's (2004) commentary is that he argues as though slides were free-standing graphics without any connection to a presentation.

Supplementary content

Tufte (2004) correctly insists that handouts are better than PowerPoint for displaying large tables and other kinds of data-intensive visuals. But he frames this observation as one more fatal shortcoming of PowerPoint. There is no reason to think and argue in such a binary manner. It makes perfect sense for a presenter to distribute handouts of data-intensive visuals or switch (Alt+Tab style) among software applications. So, for example, a presenter might switch to Excel or Adobe Acrobat (PDF format) in order to display (and possibly scroll through) a large table.

The communication context

Each presentation takes place in a specific and highly complex communication context, and numerous contextual factors influence both the performance and the design of the deck. It is necessary, therefore, to consider carefully differences in context when studying PowerPoint or offering recommendations.

What is the status of the presenter – boss, expert, student? What is the presenter's skill level? Has the presenter given this presentation many times or is this the first time? Usability expert Don Norman (2004) proudly states that his "best talk" employs a deck with only three words (other than a title slide), but this is clearly a talk that has been honed through many repetitions, and Norman's deck may have evolved over time.

There are still more factors: Is the speaking event formal or informal? Is the audience small or large (which tends to increase formality)? What are the goals and motivations of the audience – is the audience trying hard to absorb the content or just listening in a lackadaisical manner? One limitation of research studies in which students are the study participants is that students, especially if they expect to be tested on the content, are more motivated than the audiences of many business presentations.

Those studying PowerPoint should also be alert to the cultural characteristics of both presenters and audiences. For example, Blokzijl and Andeweg (2005) astutely observe that Dutch audiences may be unusually skilled at reading text on the screen while listening to a speaker, due to the Dutch practice of listening to and in large part understanding the dialog of foreign-language (primarily English) movies and TV shows while they also read the Dutch subtitles.

Other factors pertain to the physical setting and to presentation technology. For example, small screen sizes and large rooms require large fonts and large graphics and therefore limit the content that can appear on a slide. Alley and Neeley's (2005) recommendation that individual list items should be illustrated by their own graphic results in graphics so small (in some cases, 1/12 of the total slide area) that they will be useless in many physical settings.

Personal presentation style

A key aspect of the communication context surrounding PowerPoint presentations is the speaker's personal presentation style. Presentation styles differ along many dimensions, and differences in style are highly relevant to deck design and use. For example, a deck in which key text elements are arranged free-form on a slide may seem dysfunctional, but might work well for a speaker whose presentation style is attuned to such decks and who, for example, uses a light pen to point to the text element being glossed. Although commentators often condemn multiple levels of bullet points (Tufte, 2004; Doumont, 2005), two or even three levels may work well for a speaker who proceeds at a deliberate pace through a deck consisting of only a few slides. Although paragraph-long quotations are not ideal content for PowerPoint slides, I have seen presenters succeed by reading a quotation vividly. I have also seen presenters succeed by stepping to the side while the audience reads silently.

When studying deck design, it is very convenient to analyze and evaluate decks found on the Internet. However, this practice of viewing presentation decks as standalone artifacts is problematical. For example, it is especially easy for a commentator to disparage features of a deck that do not fit the commentator's own presentation style or the presentation style employed in the commentator's own professional or national culture. It is much better practice to balance the study of decks viewed in standalone mode with decks observed during the presentation, for in the latter case it is possible to see the relationship between the deck and the presenter and to gauge the audience's response to the presentation. Furthermore, there is special value in experimental studies like Blokzijl and Andeweg (2005) in which presentation style is a controlled variable in the research design.

Arguments based on unskilled presenters

There is nothing wrong with providing guidance geared to unskilled presenters. But a focus on unskilled presenters readily morphs into unproductive ways of talking about PowerPoint. Tufte (2004), for example, condemns PowerPoint in large part on the basis of its unskillful use. Fox and Cueva (2004) recognize this problem: "While Tufte makes no distinction in his criticisms with regard to user experience, it is possible that the problems he mentioned are more likely to be made by PowerPoint novices then experienced users."

Atkinson (2005), while prohibiting the use of bullet points, does not directly assert that bullet points ruin presentations. Rather he invokes a questionable lack-of-skill argument by assuming that presenters (or, at least, everyone he addresses in his book) are incapable of succeeding with bullet points. For example, Atkinson assumes that presenters cannot do otherwise than to bore audiences by reading bullet points: "You are no longer tied to the uncomfortable task of reading text off the screen and unintentionally ignoring your audience" (Atkinson, 2005, p. 18). Gold (2002), for one, hardly sees these behaviors as the inevitable consequence of using bullet points. Perhaps Atkinson should be advising his readers to look at the audience and not read the bullet points.

Another kind of hidden lack-of-skill argument consists of commentators contrasting their recommended designs with poorly designed counter-examples. Honest argument requires contrasting one's design ideas with competent instances of the alternative.

The Autocontent wizard

Searls (1998), Norvig (2000), Parker (2001), Godin (2001), Tufte (2004), and others have condemned PowerPoint on the basis of the absurd decks that can be

generated by the Autocontent wizard. Fox and Cueva (2004) report that only 5.6% of the presenters they polled (students) used the Autocontent wizard "often" (11.6% use it "sometimes"), and the Autocontent wizard can in fact be used intelligently, primarily to get a head start on formatting. Following Shwom and Keller (2003), I suggest that the practice of generalizing about PowerPoint on the basis of decks mindlessly generated with the Autocontent wizard should end.

A slide should convey "one idea"

One frequently expressed guideline for deck design is that each slide should convey no more than one idea (Norman, 2004; DuFrene & Lehman, 2004). But what is an "idea"? Even when commentators employ the broader term "main idea" (Shwom & Keller, 2003) or "topic" (Harvard School of Public Health, 2002), the problem remains: it is very difficult to operationalize the notion of one idea, one main idea, or one topic per slide. And what do we make of Godin (2001), who seems to recommend splitting an "idea" between two slides: "Remember that every slide doesn't have to stand on its own. You can use one slide to set up a point and then the next slide to bring it home"?

In a general way these guidelines make sense: presenters need to think about how much content they will put on each slide and, in particular, avoid excessive content. However, we need means of talking about and measuring the "amount" of content on slides, or we need to apply existing means (e.g., Kintsch & Van Dijk, 1978). Lacking this, commentators and researchers should be very cautious about incorporating the notion of one idea or topic per slide into their recommendations, theorizing, and experimental research designs.

Conclusion

Presentations supported by PowerPoint and similar products comprise a surprisingly complex communication medium that combines text, graphics, and (at times) multimedia with the complexities of face-to-face communication and (at times) recorded presentations. Given these complexities, a deep understanding of PowerPoint will come slowly. It is highly desirable, then, to establish and maintain a healthy critical landscape where distinctions, issues, and arguments are clear, precise, and nuanced and where the limitations of one's positions are readily acknowledged. Good temper, while not essential, is desirable. It is still very early in the history of PowerPoint studies, and there is certainly time to create this landscape.

References

Alley, M., & Neeley, K. A. (2005). Rethinking the design of presentation slides: A Case for sentence headlines and visual evidence. *Technical Communication*, *52*(4), 417–426.

Alred, G. J., Brusaw, C. T., & Oliu, W. E. (2003). *The handbook of technical writing* (7th ed.). Boston: Bedford/St. Martin's.

Atkinson, C. (2005). *Beyond bullet points: Using PowerPoint to create presentations that inform, motivate, and inspire*. Redmond, WA: Microsoft Press.

Bajaj, G. (2003). *Indezine: The PowerPoint Ezine – 32* (Nov. 17). Retrieved January 6, 2006, from http://www.indezine.com/products/powerpoint/ppezine/o32.html.

Blokzijl, W., & Andeweg, B. (2005). The effects of text slide format and presentational quality on learning in college lectures. *Proceedings of the IEEE International Professional Communication Conference*, 288–299.

Blokzijl, W., & Naeff, R. (2004). The instructor as stagehand: Dutch student responses to PowerPoint. *Business Communication Quarterly*, *67*(1), 70–78.

Doumont, J. L. (2005). The cognitive style of PowerPoint: Slides are not all evil. *Technical Communication*, *52*(1), 64–70.

DuFrene, D. D., & Lehman, C. M. (2004). Concept, content, construction, and contingencies: Getting the horse before the PowerPoint cart. *Business Communication Quarterly*, *67*(1), 84–89.

Endicott, J. (2000). Growing up with PowerPoint. *Presentations*, 61–66.

Farkas, D. (2005a). Understanding and using PowerPoint. *Proceedings of the STC Annual Conference*, 313–320.

Farkas, D. (2005b). Book review of Cliff Atkinson's *Beyond bullet points: Using PowerPoint to create presentations that inform, motivate, and inspire* (Microsoft Press, 2005), *Technical Communication*, *52*(4), 465–467.

Fox, J., & Cueva, L. (2004). The cognitive style of PowerPoint (Graduate student manuscript published to the Web). Retrieved January 6, 2004, from http://ils.unc.edu/~jfox/powerpoint.

Godin, S. (2001). *Really bad PowerPoint (and how to avoid it)*. Do You Zoom, Inc. PDF Ebook formerly sold on Amazon.com, now incorporated into *Free prize inside: The next big marketing idea*. (2004). New York: Penguin Group.

Gold, R. (2002). Reading PowerPoint. In N. J. Allen (Ed.), *Working with words and images: New steps in an old dance*. Westport, CT: Ablex, 256–270.

Gold, R. (1999). Interview transcript (March 5), Interface innovations: What's next for online design? Boston Seybold Seminars Web Publishing Conference. Retrieved January 6, 2006, from http://seminars.seyboldreports.com/1999_boston/conferences/45/45_transcript.html.

Guadagno, R. E., Asher, T., Sundie, J. M., & Cialdini, R. B. (2006). The power of PowerPoint: The impact of technology and expertise on the evaluation of information. Unpublished Arizona State University manuscript, under review.

Harvard School of Public Health (Instructional Computing Facility). (2002). Guidelines for PowerPoint presentations. Retrieved January 6, 2006, from http://www.hsph.harvard.edu/it/slides.

Kintsch W., & Van Dijk T. A. (1978). Toward a model of text comprehension and production. *Psychological Review*, *85*, 364–394.

Norman. D. (2004). Interview transcript (undated), Don Norman on PowerPoint Usability: Interview with Cliff Atkinson. Retrieved January 6, 2006 from http://www.sociablemedia.com/articles_norman.htm.

Norvig, P. (2000). The Gettysburg Powerpoint presentation. Retrieved January 6, 2006, from http://www.norvig.com/Gettysburg.

Norvig, P. (undated). The making of the Gettysburg PowerPoint presentation. Retrieved January 6, 2006 http://www.norvig.com/Gettysburg/making.html.

Nunberg, G. (1999). The trouble with PowerPoint. *Fortune Magazine*, December 20, 330–332.

O'Hair, D., Stewart, R., & Rubenstein, H. (2004). *A speaker's guidebook* (2nd ed.). Boston: Bedford/St. Martin's.

Parker, I. (2001). Absolute PowerPoint: Can a software package edit our thoughts? *New Yorker*, May 28, 76–87.

PowerPoint Pogue's Homepage. Retrieved January 6, 2006, from http://www.nbc-links.com/powerpoint.html.

Schwartzman, R., & Tuttle, H. V. (2002). What can online course components teach about improving instruction and learning? *Journal of Instructional Psychology*, *29*(3), 179–189.

Searls, D. (1998). It's the story, stupid. Don't let presentation software keep you from getting your story across. Retrieved January 6, 2006, from http://www.searls.com/present.html.

Shwom, B. L., & Keller, K. P. (2003). "The great man has spoken. Now what do I do?" A response to Edward R. Tufte's "The cognitive style of PowerPoint." *Communication Insight* (newsletter of Communication Partners), *1*(1), 1–16. Retrieved January 6, 2006, from http://www.communipartners.com/ articles_presentations.html.

Stewart, T. A. (2001). "Ban it now! Friends don't let friends use PowerPoint," *Fortune Magazine*, February 5, 210.

Szabo, A., & Hastings, N. (2000). Using IT in the undergraduate classroom: Should we replace the blackboard with PowerPoint? *Computers & Education 35*, 175–187.

Top Sarge Productions (2005). Retrieved January 6, 2006, from http://www.vproservice.com/ppt/ppranger.htm.

Tufte, E. R. (2004). *The cognitive style of PowerPoint* (2nd ed.). Chesire, CT: Graphics Press.

Yates, J., & Orlikowski, W. J. 2006 (forthcoming). The PowerPoint presentation and its corollaries: How genres shape communicative action in organizations. In M. Zachry and C. Thralls (Eds.), *The cultural turn: Communicative practices in workplaces and the professions*. Amityville, NY: Baywood Publishing.

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