Ban the Bullet-Point!
Content-Based PowerPoint for Historians

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POWERPOINT AROUSES MANY STRONG FEELINGS, but the debate over the popular program typically pits advocates against detractors: fewer people discuss *how* PowerPoint should best be used in the classroom. Howard Strauss of Princeton University has observed that "a lot of the stuff that people try to do in smart classrooms is done badly,"[1] but University PowerPoint guidelines, with their lists of "dos and don'ts," appear mostly to be the work of IT professionals, not humanities instructors. Drawing on my own experiences lecturing with PowerPoint, I suggest in this article that historians should use the program to display primary sources. They should avoid using PowerPoint as a summary of lecture notes, and abandon bullet points altogether. This advice apparently contradicts conventional wisdom; at least it contradicts the advice given at several major research universities. I will provide some sample lecture slides to justify my approach and end with a brief list of technical hints on designing PowerPoint presentations for history lectures.

I was an instant convert to PowerPoint. While Sara Tucker, an outspoken IT advocate who uses the program, described the learning curve as "a black hole of time and effort,"[2] I found most features self-explanatory. My training consisted of a three-hour seminar in which I paid little attention to the instructor: I explored the drop-down menus at my own pace, experimenting
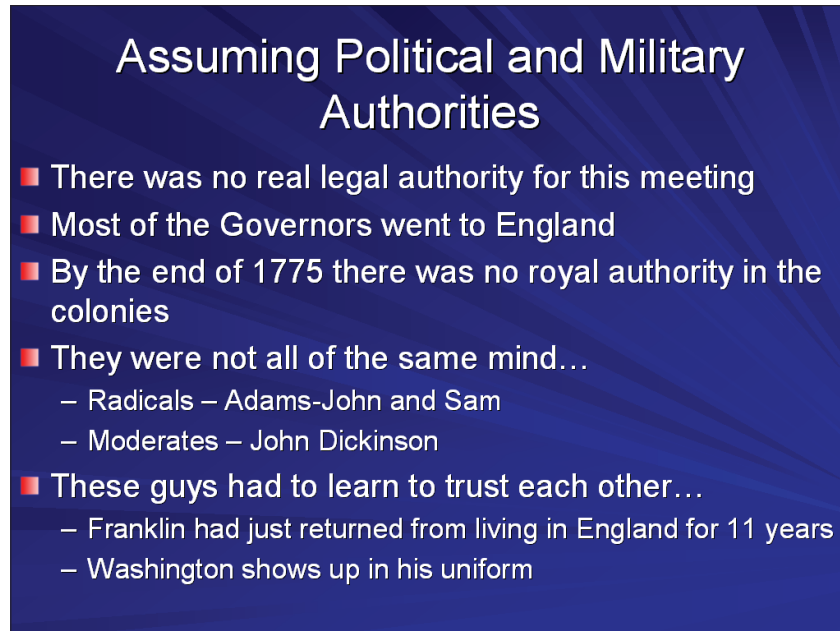
with any features that seemed interesting. I now give all my lectures and conference presentations with PowerPoint. From my perspective its only major drawback is the possibility of last-minute technical failure.

As PowerPoint becomes ubiquitous in academia, however, PowerPoint's skeptics and critics increasingly win my sympathy. I cannot agree with Edward Tufte's conclusion that "PowerPoint is evil," but am forced to concede the validity of his criticism: "the PowerPoint style routinely disrupts, dominates, and trivializes content."[3] The solution, however, is simply to impose a new style on PowerPoint, and ignore the program's annoyingly counterproductive attempts to "help" its users format slides. PowerPoint contains dozens of useless features. Instructors who ignore feature creep and concentrate on content can bend PowerPoint to their will. The program is flexible; indeed, it has even become a medium for creative art.[4] Lecturers who wish to use PowerPoint effectively, however, must understand what they wish to achieve from the program, which requires a strategy for effective teaching.

Perhaps it is best to begin with the most common error of bad Power-Point teaching: reading slides out loud. In 2004, the Educause Center for Applied Research found "many professors cram slides with text and then recite the text during class, which some students say makes the delivery flatter than if the professor did not use slides."[5] A 2005 poll on what audiences dislike about PowerPoint lectures found that the top annoyance was "the speaker read the slides to us."[6] This error is difficult to avoid, however, when lecturers treat PowerPoint slides as lecture notes. Consider a slide made by Vermillion of East Tennessee State University (figure 1). Her slides are perhaps better than average; certainly better than the exaggeratedly terrible slides Tufte designed to illustrate bad PowerPoint style.[7] They are visually pleasing, and while the animated background (blue rays that shimmer gently) is probably a mistake, the white Ariel text is easy to read against the dark background.[8]

The text on the slide, however, apparently foreshadows the spoken lecture, particularly in the colloquial phrase "these guys had to learn to trust each other." A subsequent slide on the Revolutionary army includes the title "Big problems…" followed by a series of bullet points: "Sanitation / Drunkenness / Free to come and go / Elect their own officers / Lack of respect."[9] I have not heard Vermillion present these slides, but reading the bullet points probably reveals the main thrust of the lecture. This particular presentation, furthermore, had sixty slides, which meant that Vermillion gave herself little opportunity to digress from her bullet points.

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Figure 1: Vermillion on the American Revolution

title "Big problems…" followed by a series of bullet points: "Sanitation / Drunkenness / Free to come and go / Elect their own officers / Lack of respect."[9] I have not heard Vermillion present these slides, but reading the bullet points probably reveals the main thrust of the lecture. This particular presentation, furthermore, had sixty slides, which meant that Vermillion gave herself little opportunity to digress from her bullet points.

This sort of "bullet point" presentation style gives students little incentive to listen to the lecturer. Unclear points may be clarified: students may want to know, for example, whether or why Washington's uniform helped earn Franklin's trust. But in general, the main points of the lecture are written down on the slides. Most students will therefore write down the points displayed on the slide, and then wait with varying degrees of patience for the next slide.
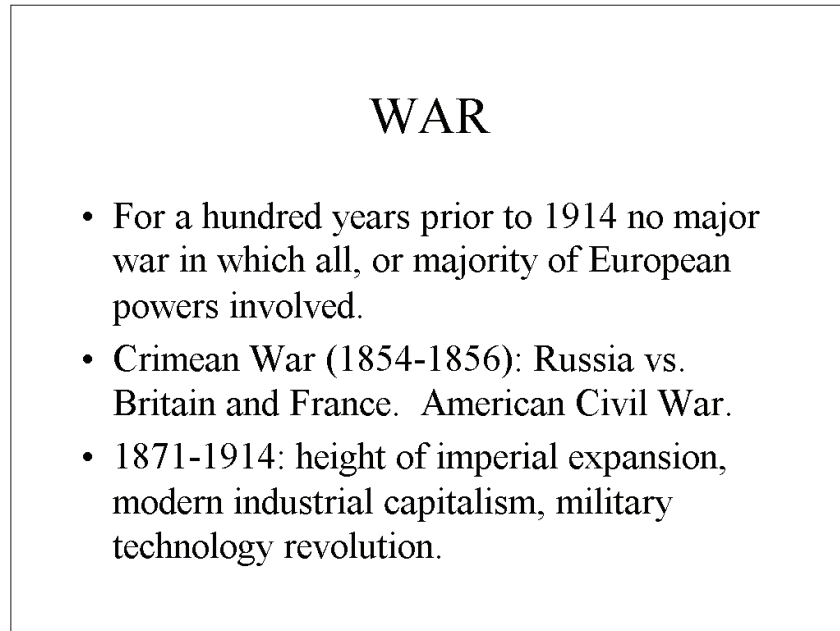
Aware that reading slides out loud makes for ineffective teaching, several user guides recommend that instructors relegate PowerPoint slides to the margins of their lectures. Implicitly assuming that detailed slides will contain detailed lecture outlines, Colin Purrington urged: "do not simply 'read' your slides to your audience. Have a minimum of text on your slides."[10] World History slides from Whittier College in California (figure

2) have apparently been designed with a similar philosophy: they have a Spartan style, with black Times New Roman text on a white background. The lecture from which this slide was drawn, furthermore, only contains fifteen slides, suggesting that each slide remains on the screen, on average, over three minutes. Since these slides do not require three minutes to digest, they hold little interest, thus shifting student attention back to the lecturer.[11]

Both Whittier and Vermillion, however, are using PowerPoint to provide a summary of the lecture. After the Whittier lecturer finished discussing the Crimean war, for example, he or she presumably turned to the American Civil War. Whittier's students probably have more incentive to listen to the lecture than Vermillion's. The slides do not specify, for example, what military technologies had proved so revolutionary. Nevertheless, all the information contained on the slide was apparently repeated in the lecture. One of my colleagues who uses this teaching strategy explained to me that repetition helps pound information into dull-witted undergraduates. Students read the bullet points, then hear the lecture, and then receive a summary of the lecture at the end of class: in the end, hopefully, something will stick. I suspect, however, that audiences reciprocate this contempt for their intelligence. Instructors who assume that undergraduates are incurious and unimaginative may also fulfill their own prophecy, insofar as bullet point lectures do little to engage students' curiosity and imagination.

But PowerPoint does not have to be used as a lecture outline! I start from the pedagogic assumption that even the most gifted speaker cannot hold the full attention of an undergraduate audience for a full class period. Any audience grows weary of listening to a single voice, which is why documentary films alternate between two narrators. Some scholars seem to believe that "today's generation of television-reared, short-attention-span children"[12] are uniquely incapable of concentrating; the pernicious influence of video games and MTV is much abused.[13] But if readers consider their own experiences at academic conferences, or in a less-than-favorite undergraduate class, they will realize that the attention of professional academics can also wander. Less anecdotally, a 1976 study by Johnstone and Percival found that student concentration consistently flags around twenty minutes into a lecture.[14]

A realistic pedagogical strategy should, therefore, take limited attention spans into account: lecturers should accept the reality that they cannot hold student attention indefinitely. Effective teaching, however, does not require complete control over student attention. PowerPoint slides can serve as a supplementary point of interest; a focus at which wandering attentions can gather. Students can and do multi-task. The challenge facing instructors is not to get students to focus exclusively on the lecture, but to get them multi-tasking on academic material.

Figure 2: Whittier College on the World Wars

WAR

- For a hundred years prior to 1914 no major war in which all, or majority of European powers involved.
- Crimean War (1854-1856): Russia vs. Britain and France. American Civil War.
- 1871-1914: height of imperial expansion, modern industrial capitalism, military technology revolution.

My solution is to provide students with multiple sources of academic stimulation and trust that students will find something of interest and meaning. When students tire of listening to the instructor, they can look at the slides. When the slide has been digested and loses its interest, students may be ready to listen to the lecturer again. A teaching evaluation once described my style as "MTV history" and I embrace the description: I suggest that instructors should err on the side of over-stimulation, rather than risk boring repetition.

For this strategy to be effective, a PowerPoint presentation must not be a lecture summary: it must instead contain distinctive content not presented by the lecturer. Side content and lecture content should complement each other with both forming a whole. PowerPoint presentations should be *presented*, which means that they should require commentary. A film is not expected to make sense without the soundtrack; similarly a PowerPoint presentation need not be a self-explanatory, stand-alone document. This strategy is at complete variance with Purdue University's PowerPoint guide, which suggests using slides to display "brief, concise, descriptive phrases that will help you remember what you want to present and to serve as a reminder for your audience."[15] PowerPoint slides, I suggest, should not be used as a mnemonic device, either for teachers or students. Instead,

PowerPoint should be a means for providing supplementary material not contained in the instructor's lecture.

In my own lectures in modern European history, I mostly use Power-Point to display primary sources. Slides displaying primary sources create a different PowerPoint experience than slides created in the ubiquitous "bullet point" style. To contrast the two approaches, consider a slide from a British archive of GCSC teaching resources, created in the ubiquitous "bullet point" style (figure 3). The instructor, Mooney, summarizes inter war Germany using Microsoft's pre-installed "Blueprint" design template, which I would describe as one of the better templates. He also has a non-animated footer showing the date, lecture title and slide number. His title is animated to appear with the "dissolve" option. The four bullet points of content are animated using the "wipe/down" option. Students are presumably expected to write the four points in their class notes.[16]

A content-driven approach to PowerPoint history looks completely different. Lecturing on modern German history at the University of Nevada, Reno, I used six slides merely to discuss Mooney's third point: hyperinflation. On the first slide, I showed pre-inflation German banknotes for ten and one hundred marks, observing to students that the United States also issues banknotes with these same denominations, which might give students a rough idea of what German currency wasworth before hyperinflation began. I then asked the students to imagine their own reaction to hyperinflation over the next four slides, in which new banknotes were animated to appear using the "appear" option. The second slide in the series, for example, showed banknotes denominated at 500, 10,000, 500,000 and one million marks. For five slides, the denominations leap higher and higher, creating a certain degree of tension: how high will the numbers go? Through the third, fourth (figure 4) and fifth slides, the denominations rise to one trillion, at which point the German government issued bills linked to the United States dollar.

A final unanimated slide (figure 5) depicts the social consequences of hyperinflation: a German housewife using banknotes to kindle the stove. Where Mooney's slide covered the fact of hyperinflation in a bullet point, my slides show hyperinflation through historical artifacts that are, I suggest, concrete, memorable and interesting.

The display of primary sources may run through slides more rapidly than the "bullet point" approach: I have used as many as sixty-six slides in a fifty-minute lecture. This violates one piece of conventional wisdom about good PowerPoint use, the notion that presenters should minimize the number of slides. Thomas Saylor of Concordia University, for example, suggested a maximum of three slides a minute,[17] presumably because students otherwise do not have enough time to copy the bullet points into

Figure 3: Mooney's slide on Interwar Germany

Figure 4: Slide 4/6 illustrating German hyperinflation

Figure 5: Slide 6/6 illustrating German hyperinflation

German banknotes being pulped for use
as waste paper

Banknotes used to light the stove
(Berlin: 9 August 1923)
http://www.vision.net.au/~pwood/aug04.htm

their notes. Patricia Lopes Don at San José State University concurs: she puts "the saturation point" at nine slides for a twenty-five minute lecture, roughly three minutes a slide.[18] I only needed two minutes to run through my six "hyperinflation" slides, and spent at most ten seconds each on slides two, three and four, including animation. Students did not object, perhaps because there were no bullet points to transcribe. Slides should stay up only long enough for the audience to get the point, but a slide can still be worthwhile even if its point is brief.

I also break with the consensus opinion about the amount of text one can use effectively per slide. Berkeley University's "Introduction to PowerPoint" suggests a maximum of "six points per slide" with "six words per line,"[19] yielding an upper limit of thirty-six words. Saylor promotes the identical six-six rule as the "joy of six."[20] San Diego State is slightly more flexible: "Limit your slides to five or seven lines per slide, and five to seven words per line."[21] I believe, however, that students can digest larger amounts of text, particularly when it is neither broken up into bullet points nor boringly identical to the words coming out of the instructor's mouth.

Consider, for example, a slide from a lecture on the Scientific Revolution, presented in a first year survey course on "Europe 1500-present," about the disbelief and skepticism that initially greeted the Copernican solar system (figure 6). I wanted to highlight the absence of experimentalist epistempology in an age when European scholars expected to reconcile

Figure 6: Luther on Copernicus for "Modern Europe"

all knowledge with the revealed truth of the Christian scriptures. To make this point, I showed students an excerpt from the memoirs of Anthony Lauterbach, a personal friend of Martin Luther, describing Luther's reaction to the Copernican solar system. The slide contains 141 words, not counting the URL citation. My lecture alluded only to five words from the bottom of the page: "I believe the holy scriptures"; i.e. not experimental results. (The top-heavy slide design reflects technical difficulties: students sitting in the back of this particular classroom could not see the bottom of the slide.)

Several PowerPoint experts may object that lengthy slides of this sort distract student attention from the lecturer. Saylor urges instructors to "use text sparingly" since "if your audience is concentrating on written text, they are most likely not giving you their complete attention."[22] Saylor's analysis is correct, and several students indeed ceased to hang on my every word while reading the "Luther on Copernicus" slide. I nevertheless suggest that this is not a problem, since lecturers should neither expect nor aspire to command students' undivided attention for the entire class lecture. Lecturers can, however, provide multiple sources of academic content, and even if students do not concentrate on the lecturer for the entire class period, the lecturer can still get them concentrating on history. Students reading a primary source about Martin Luther, I suggest, are different from students reading a magazine.

I would like to end by explaining slides that use the visual capabilities of PowerPoint Slides to make a substantive argument. Lecturing on the Holocaust, I showed a series of slides with sobering photographs of Nazi death-squads in action.[23] After explaining the particularly dramatic circumstances that produced the image depicted in Figure 7, I asked the class why the many photographs they had seen consistently showed people being shot in the back of the head: "What's so special about the back of the head?" Students proposed several theories, and somebody eventually produced the answer I was fishing for: executioners do not want to look into the eyes of the victim.

The next slide (figure 8) showed Bach-Zelewski's infamous comment to Himmler that performing mass executions transformed German men into "neurotics or savages." Next to this quotation, I showed photographs of Bach-Zelewski, Himmler, and the Minsk ghetto where the conversation took place.

Students could read the quotation at their leisure. The accompanying lecture described Bach-Zelewski's subsequent hospitalization for "psychic exhaustion" drawing heavily on Christopher Browning's *Ordinary Men*, part of the assigned readings for that week.[24] Subsequent slides turned from the psychology of perpetrators to the gas chamber, a device that, I suggested, the Nazis introduced to ease the psychological stress on their own soldiers. Judging by the cluster of students who wanted to discuss the lecture with me after class, this proved one of my most successful lectures to date.

Notice the lack of bullet points: these slides do not summarize the lecture, though they complement and enhance it. The central point of the lecture accompanying these slides, my interpretation of Browning, is not mentioned on the slides themselves. My PowerPoint presentations, if posted online, could not be used as a study guide for any students who missed class. I consider this desirable because, as Jeffrey Young found, when instructors post lectures online students are "less likely to attend classes." Young cites what is probably a typical student reaction: "If he's reading me a PowerPoint and I could read it myself later, then I'll check my e-mail."[25]

One possible objection to this lecture style is that it does not provide students with an easy study guide. Students want to copy down bullet points so that they know what to study for exams. I end every lecture with a final slide showing "key terms" that feature prominently in exams: names, events, concepts, slogans, and so on. The appearance of this slide signals the end of the lecture; indeed, I originally introduced the "key terms" slide to prevent students from interpreting the words "any questions?" as "class dismissed." The key terms, however, are not read aloud, and do not re-

Figure 7: Slide on Nazi atrocities

This picture was found in a soldier's personal papers with the title "The Last Jew of Vinnitsa."

(Vinnitsa is in Ukraine)

Figure 8: Slide on Bach-Zelewski

Erich v. Bach-Zelewski

The Minsk Ghetto

"Reichsfuehrer, those were only a hundred. […] Look at the eyes of the men in this kommando. How deeply shaken they are. These men are finished for the rest of their lives. What kind of followers are we training here? Either neurotics or savages!"

Bach-Zelewski to Himmler, Minsk, August 1941

Heinrich Himmler

Himmler in Minsk

quire any comment. The slide speaks for itself, and while students copy the key terms in their notes, I am either answering student questions or waiting for them to be posed.

In conclusion, PowerPoint is at its most effective when used not as a bullet-point summary of the lecture, but to display content that complements the spoken lecture. Historians already understand how to use PowerPoint to show maps: Ronald Mellor of UCLA described it as "one of the big things that PowerPoint allows me to do,"[26] and a summary of PowerPoint lectures accompanying high-school textbooks found that even the most text-intensive PowerPoint lectures use "a few maps."[27] PowerPoint, however, can be used to display more than maps. Teachers can enhance their lectures by showing students political cartoons, propaganda posters, artifacts of visual culture, and primary source quotations.[28] My favorite undergraduate classes were taught by sages on stages and I do not subscribe to the "guide on the side" style of teaching, but one might compare effective PowerPoint lectures to a guided tour of a museum: PowerPoint slides are the artifacts on display, and the lecture is the tour guide's commentary, during which questions may be asked and answered.

<center>* * *</center>

Content-Based PowerPoint in Three Easy Steps

(1) Never use bells and whistles. Purrington advises that "transition fades, bouncing text, or swooshing noises" leave audiences "cringing with pity and horror." While he may exaggerate slightly, PowerPoint users should take to heart his conclusion that such styles are "an unstated admission by the speaker that the topic is uninteresting, or that the presenter does not think of himself/herself as a strong public speaker."[29] The battle to end these practices, alas, is not yet won. In 2004, David Antonacci, who devised a series of sample slides to illustrate what he called the "Learning Theory Approach," seems to have gone out of his way to use every feature in the PowerPoint arsenal: text that changes color, clip-art fireworks, "spiral" animation, and a wide variety of annoying sound effects.[30] Saylor urged PowerPoint users to "minimize or avoid animated texts, sounds, and fancy transitions,"[31] but I reject even the most minimal effects.[32]

I recommend a text style so minimalist that the viewer perceives no style at all. I personally use black Ariel text on a white background. I animate arrows with the "wipe" feature to show the movement of an army across a map, but otherwise always use the "appear" option. (Tip: in the "Custom Animation" window, never click on an object in the "Check to animate slide objects" menu, because Windows uses "fly from left" as its default

animation. Instead, select the item you wish to animate before opening the "custom animation" box, and under the "effects" tab select your animation from the menu "entry animation and sound.")

This ban on sounds and animation exempts primary sources in audio or video formats. I once used an eyebrow-raising video clip of interwar swing dancing to illustrate the recreations that the Nazi hierarchy attacked as "degenerate." The clip nicely drew students into a discussion of Nazi social policy. But sounds or video without any educational content should be avoided. Instructors unsure whether a particular media file is worth including in a lecture could follow a simple test: only use a media file that you would wish students to discuss in an essay assignment.

(2) Never use AutoContent. David Byrne correctly described Auto-Content as PowerPoint's "worst feature,"[33] and the Rutgers PowerPoint Manual agrees, advising simply, "do not choose it."[34] Microsoft justifies AutoContent as a feature that can "make it easy for you to create your presentation by providing ideas."[35] University faculty, however, should not draw their ideas from software corporations, but from their training and passion for their subject. I am pleased to report that Microsoft itself is discontinuing AutoContent in future versions of Windows 2007: good riddance to bad rubbish.

While researching this article, I was surprised and dismayed to learn that several University training courses recommend this pernicious feature. Eastern Illinois University, for example, teaches staff how "to deliver class lectures and conference presentations"[36] using AutoContent, and San Diego State University lamentably suggests that AutoContent can "easily be modified for your use," admonishing that the blank presentation format "is not recommended for beginners."[37] Speaking as an intensive and enthusiastic PowerPoint user, I am unable to imagine any situation where AutoContent would be appropriate or helpful.

(3) Never use a design template or pre-formatted slide. In other words, never use titles, footers or bullet points: design each slide from scratch from the "blank" slide layout. This last rule will probably generate the most dissent. Rutgers University's PowerPoint guide suggests that beginning PowerPoint users "will probably want a basic layout with a title."[38] Some universities have even created individual in-house design templates for their faculty to use.[39] Custom slides are very easy to make, however, and I advise even beginning users to think creatively about slide layout.

Some PowerPoint users, indeed, may wish to keep slide titles to assist them in constructing slideshows in "outline view." As the Purdue Power-Point guide puts it, "PowerPoint uses that information to help you orient yourself during presentations."[40] I personally never use the "outline view" while constructing my own presentations, and recommend using the "slide

sorter" view instead. Indeed, I have found it essential to customize my toolbar so as to display a "view slide sorter" icon. (On the "Tools" menu click "Customize," then select the "Commands" tab. Drag the Slide Sorter command from the "View" menu to your toolbar of choice.)

Note that in several editions of PowerPoint, the "insert slide" function (e.g. the command control+M) creates formatted slides by default. Frustrating hours navigating the help menu suggest that appropriate modifications to the Slide Master might solve this problem, but I eventually found it easier to create one blank slide by hand, and then use the "copy-paste" feature to create multiple blank slides. (To create a single blank slide manually, left-click on a slide for "Slide Layout." You may be able to select a blank slide from the menu, but if your program insists on creating a formatted slide, click edge of the title box reading "click to add title" with the mouse, and then press delete; repeat for the subtitle box. To create multiple blank slides, go to Slide Sorter View, select your blank slide with the mouse, press the key combination control+C, then repeatedly press control+V.)

Notes

1.   Cited from Jeffrey R. Young, "When Good Technology Means Bad Teaching," *Chronicle of Higher Education* (12 November 2004).

2.   Sara Tucker, contribution to the H-Teach discussion thread "Encouraging Multi-Media Use," (February 1997), WWW document, URL <http://www.h-net.org/~envision/discussion/threads/encourag.html>, accessed 15 December 2006.

3.   Edward Tufte, "PowerPoint is Evil: Power corrupts, PowerPoint corrupts absolutely," *Wired* vol. 11, no. 9 (September 2003) WWW document, URL <http://www.wired.com/wired/archive/11.09/ppt2.html>, accessed 15 December 2006.

4.   See David Byrne, *Envisioning Emotional Epistemological Information* WWW document, URL <http://www.davidbyrne.com/art/eeei/index.php>. "Learning to love PowerPoint", *Wired Magazine* vol. 11, no 9 (September 2003) available online at WWW document, URL <http://www.wired.com/wired/archive/11.09/ppt1.html>, accessed 15 December 2006.

5.   Cited from a summary provided by Jeffrey R. Young, "When Good Technology Means Bad Teaching," *Chronicle of Higher Education* (12 November 2004).

6.   Dave Paradi "What Annoys Audiences About PowerPoint Presentations?" WWW document, URL <http://www.thinkoutsidetheslide.com/pptresults2005.htm> accessed 15 December 2006. See also Mary Munter, Dave Paradi, *Guide to Powerpoint* (Upper Saddle: Pearson Education, 2007).

7.   Tufte, "Powerpoint is Evil."

8.   East Tennessee's staff directory did not include a faculty member of this name, and my emails to the department chair went unanswered. This slide is part of a lecture from History 2010, WWW document, URL <http://www.etsu.edu/cas/history/ppt/vermil-

lion/Chapter6/APCH6.ppt> accessed 15 December 2006.

9. The ten bullet points actually run "Week later Washington Arrives to take Command / Very enthusiastic but undisciplined troops / Big Problems / Sanitation / Drunkenness / Free to come and go / Elect their own officers / Lack of respect / Whippings and court-martials / 'Discipline is the soul of the army'."

10. Colin Purrington, "Advice for Preparing and Delivering Research Slide Shows," (2005). WWW document, URL <http://www.swarthmore.edu/NatSci/cpurrin1/powerpointadvice.htm>, accessed 16 December 2006.

11. Assuming a 55-minute lecture, each slide will be displayed for an average of 3.6 seconds. See URL <http://web.whittier.edu/academic/history/worldhistory/WorldWarI_files/frame.htm>, accessed 16 December 2006.

12. Stephen Budiansky, "The Trouble with Textbooks," *Prism* (February 2001), WWW document, URL <http://www.project2061.org/publications/articles/articles/asee.htm> accessed 15 December 2006.

13. One scholar argues that as digital technology has spread, "students' brains have physically changed." See Mark Prensky, "Digital Natives, Digital Immigrants," *On the Horizon*, vol. 9, no. 5 (October 2001), WWW document, URL <http://pre2005.flexiblelearning.net.au/projects/resources/Digital_Natives_Digital_Immigrants.pdf>, accessed 18 March 2006.

14. A.H. Johnstone, F. Percival, "Attention breaks in lectures," *Education in Chemistry*, no. 13 (1976), 49-50; cited from J. Middendorf, A. Kalish. "The 'change-up' in lectures, *National Teaching and Learning Forum*, vol. 5, no.2. (1996), WWW document, URL <http://www.ntlf.com/html/pi/9601/articlel.html>, accessed 15 December 2006.

15. "Web by Design," WWW document, URL <http://www.iupui.edu/~webtrain/tutorials/powerpoint2000_basics.html>, accessed 16 December, 2006.

16. Schoolhistory.co.uk, Germany 1918-1945 (Depth study) worksheets and PowerPoint's, WWW document, URL <http://www.schoolhistory.co.uk/gcselinks/indepth/germany/resources/FirstWorldWarforGermany.ppt>, accessed 15 December 2006.

17. This advice is taken from a guide for students. Thomas Saylor, "Creating an effective PowerPoint presentation," WWW document, URL <http://people.csp.edu/saylor/effective_powerpoint.htm> accessed 15 December 2006.

18. "Establishing World History as a Teaching Field: Comments from the Field," *The History Teacher*, vol. 36, no. 4 (2006), paragraph 29.

19. Berkeley University, "Introduction to PowerPoint," p. 5. <http://ets.berkeley.edu/TrainingSupportCenter/Handouts/Ppt_formatted.pdf>, accessed 16 December 2006.

20. This advice is taken from a guide for students. Thomas Saylor, "Creating an effective PowerPoint presentation," WWW document, URL <http://people.csp.edu/saylor/effective_powerpoint.htm> accessed 15 December 2006.

21. San Diego State University, "Microsoft PowerPoint: Introduction (Macintosh)." (San Diego: 2000), 5. Available online as WWW document, URL <http://www-rohan.sdsu.edu/~bats/PDF/FacStaff/PPt/PPT_Intro_mac_fs.pdf>, accessed 15 December 2006.

22. Saylor, "Creating an effective PowerPoint presentation."

23. Photographs of Nazi atrocities are widely available online, but several pictures are available at The History Place, "World War Two in Europe," WWW document, URL <http://www.historyplace.com/worldwar2/timeline/einsatz.htm>, accessed 15 December 2006.

24. Christopher Browning, *Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland* (New York: Harper Collins, 1992).

25. Cited in Jeffrey R. Young, "When Good Technology Means Bad Teaching," *Chronicle of Higher Education* (12 November 2004). The student cited is Brian J. Rizman, then a junior at Saint Joseph's University.

26.   Ronald Mellor, "Teaching with Technology," Interviews with UCLA faculty, WWW Document, URL <http://www.college.ucla.edu/edtech/interviews/mellor.htm>, accessed 15 December 2006.

27.   For a summary of PowerPoint presentations packaged with High School text-books, see Valerie Cox, "Matching Textbook Ancillary Resources to Teaching and Learning Styles In the AP Classroom," *World History Connected*, vol. 3, no. 2 (February 2006), WWW Document, URL <http://www.historycooperative.org/journals/whc/3.2/cox.html>, accessed 18 December 2006.

28.   See for example Sara Tucker, "Teaching world history with computers: why I do it and what's involved." WWW Document, URL <http://www.accessmylibrary.com/coms2/summary_0286-9141421_ITM> accessed 15 December 2006.

29.   Colin Purrington, "Advice for Preparing and Delivering Research Slide Shows," (2005). WWW document, URL <http://www.swarthmore.edu/NatSci/cpurrin1/powerpointadvice.htm>, accessed 16 December 2006.

30.   For annoying sound effects, see slide 36 "What is the median of the following scores?" David Antonacci, "Effective Teaching with PowerPoint: A Learning Theory Approach" (Educase Center for Applied Research, 2004), WWW document, URL <http://www.educase.edu/LibraryDetailPage/666?ID=SWR0417>, accessed 17 December 2006.

31.   Saylor, "Creating an effective PowerPoint presentation."

32.   Vermillion included a few sound effects in her lectures. A few presentations begin with what sounds like applause, perhaps as to signal the class "quiet now, lecture is about to begin." One slide begins with a cannon shot, apparently to add drama to a turning point in the lecture.

33.   Tim McKeough, "The Art of PowerPoint: David Byrne (Yes, that David Byrne) Defends a Reviled Software," *The Toronto Star* (March 13, 2005) WWW document, URL <http://www.davidbyrne.com/art/eeei/press/EEEI_Toronto_star.php> accessed 16 December 2006.

34.   "It is designed for corporate presentations and is guaranteed to come up with some inappropriate 'autocontent' for you." Karen Routledge, *The Rutgers PowerPoint Manual*, specifically the page "Choosing the Format of your Slides," WWW document, URL <http://rci.rutgers.edu/~routledg/powerpoint/02choosingformat.htm> accessed 15 December 2006.

35.   Microsoft, "Add a Template to the AutoContent Wizard," WWW document, URL <http://office.microsoft.com/en-us/powerpoint/HP052390641033.aspx>, accessed 16 December 2006.

36.   Microsoft PowerPoint 2003: Introduction, University of Eastern Illiniois, Workshops in Booth Library, see WWW document, URL <http://www.library.eiu.edu/workshops/description.asp?descID=60>, accessed 16 December 2006.

37.   San Diego State University, "Microsoft PowerPoint: Introduction (Macintosh)." (San Diego: 2000), 6. Available online as WWW document, URL <http://www-rohan.sdsu.edu/~bats/PDF/FacStaff/PPt/PPT_Intro_mac_fs.pdf>, accessed 16 December 2006.

38.   Karen Routledge, *The Rutgers PowerPoint Manual*, specifically the page "Choosing the Format of your Slides," WWW document, URL <http://rci.rutgers.edu/~routledg/powerpoint/02choosingformat.htm> accessed 15 December 2006.

39.   For sample templates from Charles Stuart University in Australia, for example, see WWW document, URL <http://www.csu.edu.au/staff/powerpoint/>.

40.   Purdue University, "Web By Design: PowerPoint 2000", WWW document, URL <http://www.iupui.edu/~webtrain/tutorials/powerpoint2000_basics.html>, accessed 17 December 2006.