

When Presentations Go Bad: A Commentary

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This commentary traces its roots to a fireside chat between the authors as we lamented the state of communication among geologists (and, to be fair, other scientists). We agreed that presentations we witnessed at recent GSA annual meetings supplied infinite fodder for critique. This is not to say that all of the talks were bad; in fact, there were many outstanding ones. But for several minutes, our conversation centered on our recollections of especially poor presentations.

"Remember the guy who just photocopied a page out of a textbook and threw it up on the overhead and then talked to a screen we couldn't read for five minutes?"

"Oh yeah, and what about the speaker who wanted to walk through every detail of five years of research in a 20-minute talk?"

"And then there were the slides that used five colors and four fonts."

"What about that 10-minute talk that whipped through 90 slides.. .in each carousel! That was two slides every 6.66 seconds."

"Absolutely perfect examples of presentations gone bad."

We decided this socializing could be organized into a useful commentary providing some constructive criticism and giving basic guidelines for public speaking and for designing and using visual aids. We are not attempting to establish ourselves as supreme experts in scientific communication. Rather, our backgrounds have provided us with more insight into designing and delivering good presentations than most scientists typically acquire. Tim is a geologist who started his academic career as an artist and worked several years preparing scientific figures for publication. Kristan conducts research on the connections between scientific communication and public policy and has more than 10 years of experience communicating technical information to diverse audiences. Additionally, we have served as student projectionists at GSA meetings and have been unfairly blamed for many of the shortcomings highlighted in Part II of this paper!

Before you assume that this discussion does not apply to you, consider this: One or both of us attended every GSA meeting from 1994 through 2000 and witnessed presentations spanning every subfield of geology. More than half of these presentations (including some given by the secondary author) would not have received a passing grade in a 100-level communications course. In preparing this commentary, we both learned more about successful presentations and contend that even the most experienced speakers can benefit from reviewing these guidelines.

Two essential components must be considered in critiquing any presentation: the presenter and the presentation itself. When either disregards accepted communication principles, the results are usually boring, poorly delivered, incoherent talks. After our critique of several GSA meetings, we concluded that there is some good news and some bad news to be found on the geologic communication front: We will begin with the positive. Most of the talks we attended fulfilled two crucial rules of communication: The speakers clearly enjoyed their work and their enthusiasm showed, and very few of them read their papers verbatim but rather spoke conversationally about their topic.

Unfortunately, enthusiasm and an extemporaneous style are seldom enough to save a poorly designed or delivered paper. Too many of the presentations violated other basic principles of effective

communication. The goals of any professional meeting, conference, or symposium include sharing information, learning about new work, forging new alliances, and generating new ideas. But if your talk does not present information in a comprehensible way, then what is the point in speaking? Why create slides if the audience cannot see or understand them? The content is the most important aspect of any scientific talk; however, we argue that academic thought is only useful when it is communicated and understood by the interested scientific community.

Key Elements in Preparing and Presenting a Talk

Delivering a talk is not the same as writing a paper and should not be treated as such. Remembering this one point will do wonders for any presentation. Working from this baseline, the following suggestions will help refine and enhance your communication skills.

1. Introduce, Inform, Conclude

In most introductory communication courses the teacher will instruct the class, "Tell them what you are going to tell them (introduction), tell them (body), and then tell them what you told them (conclusion)."

A typical introduction uses a grabber, such as a rhetorical question, a statistic, or a story to grab the audience's attention. You should then clearly state in ONE sentence the thesis of the talk (e.g., I am here today to demonstrate that the wheel is most effective when patterned after a circle rather than a square). Finally, in ONE sentence, state what the talk will cover. (For example, "This presentation will review wheel design and our wheel construction method, and will demonstrate why the circular design rolls better than the square design.")

In the body of the talk, present your information in the same order, using transition statements between each point to review the point just completed and introduce the next. The body should include basic information about your research method and your results. A talk is not being peer reviewed nor is it likely to be the basis for reproducing your research. (How many abstracts did you cite in your last publication?) Therefore, unless your talk is about a new method or a study of a method (methodology), a one- or two-sentence summary is enough. The bulk of the body should be delegated to presenting your findings, which should be the points you listed in your introduction. The conclusion should repeat the main thesis statement and the primary points covered, then link back to the introduction, perhaps by answering the rhetorical question or finishing the story.

2. Keep It Simple

Narrow the talk to between two and four key points. Most studies conclude that people cannot mentally organize more than that during a presentation. A common mistake in scientific talks is speakers who try to put several years of research detail into a 20-minute talk. It cannot be done coherently. Details should be left to written materials. Audience members who want more detail will contact you later.

3. Talk to Me

Use appropriate language and speak conversationally. A talk is not the same as a paper. Your audience cannot go back and review what you said or stop and consult a dictionary for words that are unfamiliar. Use short words whenever possible, decipher acronyms clearly and slowly, and avoid jargon even when speaking to peers. Moreover, creating new terms should be left to manuscripts and should only be done when no other combination of terms is practical. Geology is an incredibly diverse discipline, and it is a mistake to assume that everyone who chooses to attend your talk has enough background to understand the jargon and the acronyms specific to your sub-field.

4. Body Language Matters

Much of an audience's response to you and your talk has nothing to do with what you say, but with how you say it. To ensure that the audience stays focused on what you are saying:

- Look at the audience, not at the podium, floor, or audiovisual screen,
- If you are shaking, do not use a laser pointer or try to brace your arm on the podium for stability.
- If you use a pointer, put it down or turn it off when you do not need it.
- Try not to hide behind the podium.
- Gesture and move naturally.
- Avoid jewelry that clangs on the podium; the microphone will amplify the noise. This also applies to tapping your fingers or repeatedly shuffling notecards and papers.

5. Watch the Clock

Practice a talk at least once before stepping in front of a podium and time it. Then, watch the clock while speaking. Regardless of how interesting your topic may be, going past your allotted time is rude to your audience and to other speakers. A typical maximum rate of speech is about 100 words per minute, so a 20-minute talk should include no more than 2,000 words.

AUDIOVISUAL MATERIALS

The age of desktop publishing has been both a blessing and a bane to those of us trained in communication and visual arts. When used appropriately, new technology can sometimes save even poor speakers. But there are far too many cases of digital presentations gone bad. That is, speakers use the technology without considering basic communication or visual art principles.

Audiovisual materials are meant to support a presentation; they are NOT the presentation. Commonly committed errors include trying to cram too many slides into one talk, trying to cram too much information onto a single slide, or using distracting color schemes or patterns. Following are basic guidelines for designing and using visual aids to accompany your presentation.

Remember Murphy's Law

First and foremost, be prepared for equipment to fail. Either be prepared to talk without your visual materials or have a backup system.

Computers and Presentation Software

Personal computing hardware and software technology has advanced sufficiently to allow speakers to create highly portable, versatile digital presentations. This has been both the boon and the bane for many. On one hand, it allows for colorful, dynamic presentations that can be edited up to the last minute. On the other hand, such presentations are subject to two types of problems.

The first is equipment failure. If the computer decides not to work for whatever reason, you'd better have a backup hard copy of the presentation. Second, because software often includes color schemes and canned templates complete with animation, you have the opportunity to be graphically creative. Unfortunately, many of the schemes and tools made available provide few or no guidelines on what works visually, what color combinations lead to eyestrain, or which types of text or graphic elements do not reproduce well on the big screen.

Use the following guidelines when designing your next digital presentation.

Preparing Slides Using a Computer

General Rules

- Avoid using patterns and screens; stick with solid colors. If you are using only black and white, it is simpler and cheaper to make overheads of your figures using a conventional laser printer.
- Be brief and to the point on text slides; use an outline at most. Wordy introduction or conclusion slides distract your audience from the primary source *of* information, which is you, the speaker. Use graphics and photos to support your key points.
- Keep figures and maps simple, as they are displayed for only a short time. The more complex the slide, the less useful it will be. Too many times we've heard speakers say, "I know this is busy, but you only need to look at this tiny point." The audience will not look only at the tiny point, but will try to decipher the complex visual, missing whatever you are trying to explain.

Use of Color

- Use dark backgrounds and lighter lettering for digital or slide presentations, and use light backgrounds and darker lettering for overheads.
- Avoid combining contrasting colors (e.g., purple background and primary yellow text). Such combinations are eye catching, but do not always reproduce well (photographically or in a digital projection). Moreover, high-contrast combinations can lead to eyestrain. This is one of the reasons why using color can be more pleasing to the eye than using black-and-white overheads. If you like yellow text on a purple background, use a pastel shade rather than a bright primary yellow. It will be easier to read and just as eye catching. Avoid using primary colors in figures. The extreme contrast makes the figure "vibrant," which distracts from the data.
- Avoid graphic elements that consist largely of some bright color. The object can lead to saturation during reproduction in a digital camera or during digital projection and it can be difficult to adjust the equipment without washing out other features in your slide.
- Choose colors that minimize contrast but allow the text or lines to stand out. We've observed that digitally drafted slides work best with darker background colors and text and lines that are bright but complementary to the entire color scheme. Stick with earth tones and avoid primary colors unless you are trying to emphasize some specific, very small component of the entire slide.

Text Slides

- Text size should be no less than 14 to 18 points and no more than 36 points. Anything outside this range will be too small to read or will overemphasize the BIG text.
- Serif typefaces such as Times or Palatine have characters with stems (serifs) that can fade during transfer to film or during projection. If you must use serif fonts, use BOLD to ensure that each character reproduces well. Your audience does not have much time to read your slides, so, as with content, keep the typeface simple.
- Avoid dark lettering on dark backgrounds. The same goes for baby blue lettering on baby pink backgrounds—yes, it has been done; the offenders need not be mentioned by name. When in doubt use white on dark backgrounds and black on light backgrounds.

- Avoid drop shadows, outlined, or embossed text, which generally does not reproduce well.

Maps and Figure Slides

- Use pastels or earth tones on maps and avoid complex patterns and fine lines. Maps convey a great deal of information; bright colors and complex patterns strain the eyes or may be downright revolting, thus defeating the purpose. Your audience has only seconds to a minute or two to read your map; keep it simple and they will remember more.
- Use a line size of between one and four points. The most important lines in the figure should be the thickest.
- Use dashed lines only where absolutely necessary.
- Avoid placing text over lines. Unless you mask out the line, the text is hard to read.
- Use color to differentiate sets of data represented, in a single graph. The convention of using different shapes defeats the flexibility of using color, and the symbols are often hard to differentiate.

Shooting Slides on a Digital Camera

Use a digital camera to achieve the best results for slides. If you don't have access to one, professional production is available for between \$1 and \$4 per slide. The greatest value in using this technology is that the entire image of the slide will be in focus. Using a digital camera generally saves you money compared with shooting the slides off the computer screen.

Shooting Slides from a Computer Screen

This procedure can be both expensive and difficult; it can, however, be mastered with time. "We have yet to meet anyone who has not burned through three or four rolls of film trying to get their slides just right. The greatest difficulty arises from the fact that many computer screens have some degree of curvature, and if the camera is not set properly, portions of the slide will not be in focus. Likewise, the camera focal plane must be sub-parallel to the computer screen. Color saturation, where the colors appear to bleed into one another, is also a major headache. For some success in shooting slides from computer screens, settle on a standard color scheme and do the following.

- Test different film types and brands. Some films are good at capturing certain wavelengths of light, while others may result in poor color reproduction.
- Use slower films (<200 ASA).
- Use larger f-stops (smaller aperture) for maximum depth of field. This will help prevent capture of the curvature of the screen or any tilting of the screen with respect to the camera.
- Use shutter speeds slower than 1/60 sec. We have achieved good results using shutter speeds of 1/30 sec.
- Shoot slides off of a flat-screened monitor.

These are only guidelines; there is no guarantee (implied or otherwise) of success. We recommend having your slides professionally produced.

Don't Let This Be You!

We hope these suggestions help you produce a more effective presentation, which will help you disseminate your ideas. Keep in mind, however, that your presentation may be doomed by any of the following. (We have seen many examples of these; no names are provided to protect the guilty.)

- You have put together 180 slides in two carousels. You have 10 minutes to talk, and you are changing slides on the average every 6.66 seconds. It takes a great projectionist 3 seconds to focus an image, which gives your audience 3.66 seconds to view two slides; witnessed, GSA New Orleans, 1996.
- Using pink text over a sky-blue background that fades to white along the vertical sides; witnessed, a department seminar.
- You or the person who produced your color scheme is completely color-blind; although we cannot prove it, we have suspected it on numerous occasions.
- Forgetting to turn off the auto-focus. Auto-focus, much like a frictionless surface, exists only in the form of a mathematical abstraction or in regions of space where presentations are not typically given. It is produced for the sole purpose of allowing a speaker to blame the fuzzy nature of his/her slides on the supposed incompetence of the student projectionist rather than the poor quality of his/her slides; witnessed, GSA 1994, 1995, 1996, 1997, 1998, 1999, 2000.
- Complete lack of useful content due to incoherence, poor preparation, and/or indecipherable audiovisuals; witnessed, GSA 1994, 1995, 1996, 1997, 1998, 1999, 2000.

Avoid these pitfalls. Use our guidelines to prepare your next talk, and you should have an improved approach to speaking and to using audiovisual supports. Your audience will appreciate it!