Book Review

Alley, M. (2013). *The craft of scientific presentations: Critical steps to succeed and critical errors to avoid* (2nd ed.) New York: Springer-Verlag. (286 pp., 6 b/w illustrations, 53 color illustrations, paper $34.95. e-book, $24.99).

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The Craft of Scientific Presentations is a book written primarily to assist scientists and engineers in planning and giving better oral presentations. This book can benefit communication center consultants by helping them understand the particular needs of STEM speakers, the contexts in which they speak, and the problems they tend to have when speaking.

Alley gives three reasons STEM professionals would benefit from his book, including retaining credit for one's own work and generating interest in one's work. However, the third reason Alley gives is more significant for communication experts - the need for scientists and technical experts to effectively communicate their work to politicians and other public audiences. Politicians and publics can be critical to continued science research. To reach these audiences, Alley emphasizes the importance of presentations demonstrating compelling content, passion for the topic, and audience awareness. Communication consultants can play a primary role in helping integrate those elements into such presentations.

Alley is particularly well-known in the field of technical communication for the extensive work he and his colleagues have done with the effective use of PowerPoint in scientific and technical presentations. He has a Master's in Science in electrical engineering and a Master of Fine Arts in writing and is an Associate Professor of Engineering Communication at Pennsylvania State University.

Much of what Alley discusses will sound familiar to speech communication professionals, as the majority of the book presents basic public speaking principles tailored for a scientific/technical audience, to whom he appeals by including examples from such technical experts such as Jane Goodall and Albert Einstein. While this method is preferable to long lists of negatives to avoid, in my opinion, it would be more helpful to positively describe things technical speakers SHOULD do, which would make his suggestions clearer for both the technical experts and the communication consultants using the book.

I agree with Alley's assertion on page 274 that the greatest contribution of this book is that it exposes weaknesses in the way that most scientists and engineers design their presentation slides. For consultants who do not work with scientists and engineers frequently, Alley's descriptions and slide examples are good examples of the kinds of challenges you may face in consulting with STEM speakers. The work of Alley and his colleagues on PowerPoint could assist any public speaking instructor or consultant, especially those working with technical experts. Unlike the rest of Alley's advice, which is heavy on general philosophy and light on "how to," the chapter on working with PowerPoint contains specific guidelines.

While some of his advice on PowerPoint will sound familiar, much of the chapter contains explicit recommendations

for constructing assertion-evidence style slides that will drive technical presentations. His research shows that using a one or two-line assertion headline (a complete sentence), paired with visual evidence supporting that assertion is the best way to help non-technical audiences understand complex technical information. Particularly in the section "Critical Error 7: Following the defaults of PPT," Alley gives research supported, step-by-step instructions on why and how to build effective slides using this method. This book combines information from several journal articles into one chapter, and is the best place for a communication specialist who works with technical experts to learn and understand the method. The assertion-evidence style can be gainfully applied to other situations as well, since its focus on using text sparingly and highlighting a limited number of visuals that support the primary claims of a presentation mirror good PowerPoint protocol.

Science communication research has shown that there are specific issues that should be addressed by scientists and engineers speaking to public audiences (Burns, O'Connor, & Stocklmayer, 2003; Dudo & Besley, 2016; Grundmann, 2013; Murdock, 2017). Without using this research to support his assertions, Alley does mirror its recommendations in several areas, correctly noting that it is vital for technical presenters to: memorably explain complex scientific concepts, show passion for their work, use concrete language, emphasize the importance of science topics to audience members, and use stories and examples to create a personal connection to the audience.

There is a possibility for confusion because Alley does not differentiate clearly between techniques best for public audiences, science classrooms, and professional scientific presentations. He uses examples from all of these situations interchangeably throughout the book, when clearly these situations require different techniques. For example, several of the slides Alley shows as being excellent examples of illustrations for technical presentations would not be appropriate for non-expert, public audiences. For this and other reasons, it would be useful for communication consultants to guide STEM speakers in their use of this book.

That said, the book would be an excellent read for any communication specialists who work with or would like to work with scientists, engineers, or other speakers who have highly technical knowledge. My own research (Murdock, 2017) shows that communication specialists are often better able to help STEM speakers improve their public speaking than are scientists with some training in public speaking techniques. Still, it helps if communication specialists understand the particular challenges STEM speakers face with public speaking situations. Alley's *The Craft of Scientific Presentations: Specific Steps to Succeed and Specific Errors to Avoid* is a great overview that illustrates many of those challenges and shows how to help solve them using communication techniques.

References

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