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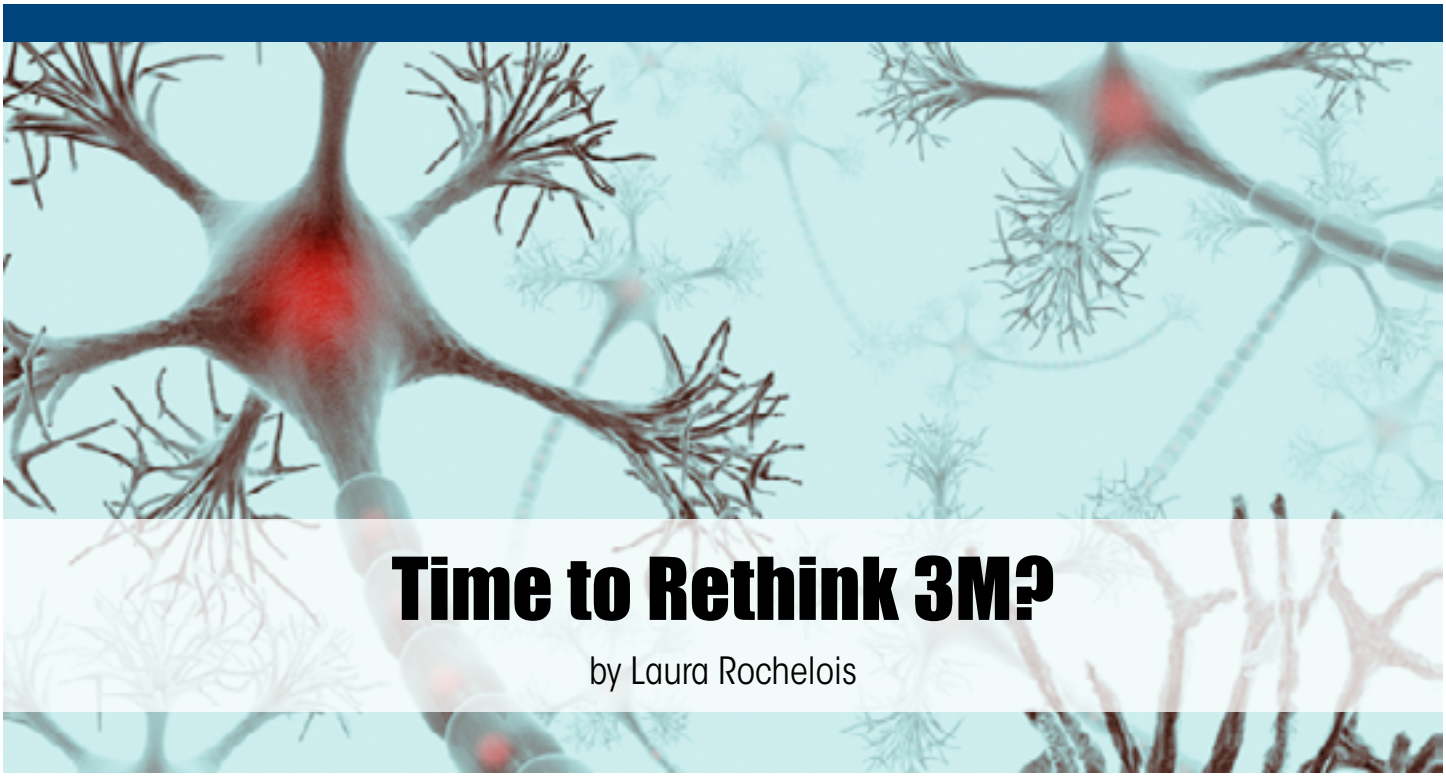

Time to Rethink 3M?

by Laura Rochelois

When it comes to pitching the use of trial graphics, there's not much out there that gets more play than the well-known 3M Study.[1] The 1986 study sponsored by 3M and conducted at the University of Minnesota proclaimed in bold letters on the first page of the published paper that presentations using visual aids were "43 percent more persuasive" than those without. As if that wasn't good enough, participants in the study were more likely to describe presenters who used visual aids as "clear," "concise," "interesting," and as having appropriate "supporting data," among other accolades. It sounds great at first blush, and there's no doubt that the study, sponsored by the leading manufacturer of overhead transparencies, is still a favorite in sales presentations and brochures.

However, when you look closely at the paper, which was not published in a peer-reviewed journal, it feels a bit like one of those global warming reports we hear about where any unhappy effects likely to result from the scientific gobbledygook have been offset by a political operative's tacked-on title: "Evidence for Climate Change Inconclusive." In this case, the problem is the reverse: the data is not quite as conclusive as the bold-faced proclamation in the introductory sentence. If only we knew what it means to be "43 percent more persuasive."

Fortunately, author Doug Vogel didn't stop with the 3M study. In 1996, he and colleague Joline Morrison set out to drill down on the findings described in that paper and published their results in *Information & Management.*[2]

This second study never makes the "43 percent" conclusion. Its results are far more useful and specific, not to mention better substantiated, than those reported in the 3M Study.

This later study looks at a variety of factors relating to the use of visual aids and their effects on both "perceptions of the presenter" and "components of persuasion," the latter of which it defines as:

1. attention,
2. yielding,
3. comprehension, and

4. retention.

The use of visual aids alone appears to have no direct effect on the first two components, attention and yielding, but has a strong positive effect on comprehension and retention. Interestingly, the use of visuals *does* tend to produce a higher regard for the presenter on the part of subjects, which, in turn, correlates with improved attention and yielding. This, of course, begs the question of which presenter qualities (professionalism? conciseness?) most effectively dial up the attention and yielding levels of an audience. But the interesting thing is that good visuals contribute directly to two components of persuasion: comprehension and retention. Now that's useful.

Morrison and Vogel also slice and dice various optional features of visual aids in multiple ways, yielding some useful findings. For example, it may surprise you to know that color visuals are not only prettier than black-and-white; they actually contribute to greater comprehension and retention of the subject matter being conveyed. Similarly, while well-done animation significantly improves comprehension, redundant or marginally relevant art and animation are at best ineffective and at worst harmfully distracting to viewers.

Research on effective visual communication in the courtroom should ask a number of additional questions:

• What exactly is a good versus a bad visual aid?

• What are the effects of the fact-finder's demographics or cultural background on his or her visual perception and susceptibility to persuasion?

• How do various courtroom factors, social and environmental, affect visual persuasion?

My point is not that trial graphics that aren't based on peer-reviewed research aren't worth the bother. In fact, in our age of 24/7 multimedia edutainment, I'd consider visual aids indispensable in any setting where the goal is to make a persuasive presentation, if for no other reason than because people expect it. But we need to get past the imited beginnings of the 3M Study. If visual persuasion is to come of age as a science, it must be based not on old saws and advertising taglines, but on something we should know a thing or two about: evidence.

A look at the greater weight of the available evidence suggests a few effective ways to incorporate visual persuasion into your next case:

> **First, respect the limitations of the brain.** The eye receives 10,000,000 bits of information every second. The brain processes 40 of these bits (.0004 percent). We hear 100,000 bits of information every second and are able to process 30 (.03 percent).[3] The central organizing principal in creating visuals is to eliminate everything that isn't necessary. Start at the macro level and remove all nonessential case themes, then all visuals that aren't critical, and finally all unnecessary elements in each visual. Find the core of your message and focus your creative energy there.
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> **Second, leverage the power of multimedia**. Once you have determined your core messages, use words and pictures together to improve meaningful learning.[4]

That's the theory part. Here's the practical part: it turns out that, according to Mayer, putting words and images on the same screen causes (you guessed it) cognitive overload. A more effective strategy is to let the speaker do the telling and the screens do the showing. Of course, real-time narration also leaves room for on-the-fly improvements, a handy thing during the unpredictable, shifty beast we call trial.

Other researched-based ways to reduce cognitive load and improve meaningful learning include keeping like items together (for example, incorporating key information into the main field rather than placing it in a corner) and breaking information into digestible parts. Design decisions also contribute to meaningful learning, since effective color choice, layout, camera angle and motion, to name a few, can reinforce emphasis, hierarchy and focus of information, cutting cognitive load and reorienting it in the right direction.

So, must successful trial graphics designers earn advanced degrees in neurology, psychology and ophthalmology? I hope not. But neither can we afford to ploddingly recycle unsupported mythologies dating from the dawn of our profession. To become experts who can create real value for our clients, we have to know something they don't. And to do that, we have to do our homework.

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Laura Rochelois is a principal at By Design Legal, a full-service trial presentation firm serving a national client base from its offices in Portland, Oregon. She may be reached at lr@bydesignlegal.com. For more information on By Design Legal, see www.bydesignlegal.com.

References

[1]Vogel, Douglas R. (1986). "Persuasion and the Role of Visual Presentation Support: The UM/3M Study." *Working Paper Series.* The other study that gets a lot of airtime and is also quite old and untested is the Wharton Study: Oppenheim, Lynn. (1981). "A Study of the Effects of the Use of Overhead Transparencies on Business Meetings."

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[3]Norretranders, Tor. (1998). *The User Illusion: Cutting Consciousness Down to Size.* New York: Penguin.

[4] Mayer, Richard. (2001). *Multimedia Learning.* Cambridge: Cambridge University Press.