

On conference posters

After a long day's learning in the conference hall, plodding to a poster session at 16:30 throws a smokescreen between us and the subtext of why we meet: drawing down the shimmering meniscus of a comically large Manhattan with friends old and new at the hotel bar. The lurch to the 07:00 session with a gullet still sloshing with carbonara and ale is a potent reminder that one needs to change one's lifestyle with some urgency, and no way to encounter 90 minutes of science.

I kid of course, but really, if ever a piece of genuine good news drew a near-universal response, it is "Your abstract has been accepted as: Moderated Poster." I'm here to tell you that ain't right! Academic meetings, like the one many of you are attending this very month, are the seat of viewing and vetting as-yet-unpublished research, and the bulk of the substrate is the poster presentation. It is unjust that this excellent medium gets short shrift in our *de facto* hierarchy below the podium presentation. Here then, a wee bit of space to celebrate, critique, and fuss about posters.

I. POSTERS ARE UNDERRATED

The podium presentation indeed stands as the place for a polished reveal of the data beneath a highly rated abstract. When it's done, a couple of questions from among the Six People Who Ever Ask Questions and then it's over. No chance to go back and flesh out a diagram or table, no chance to query the author, no connection to be made. This is where the poster shines. In the canonical session, the author stands with their poster and interested parties *take all the time they need* to extract the message and the validity. The author stands by and oft engages in a conversation about their work. This pause button on a body of work displayed *in toto*, plus the interactivity with the creator, is the killer feature that deepens learning. For the author, a session's interactions can act as impromptu peer review, with new perspectives to polish the work for translation into its future manuscript.

Put 20 posters in the same room on the same theme, and a curious learner could extract a new

body of knowledge, mull and take note of a few new ideas for their own research, and grab a couple of email addresses of new collaborators. This density informs the lay of the land, and as almost all are unpublished, the near-term direction of the topic at hand. By this I'm defining the poster as not just the 2D square of paper, but the 4D, self-paced and interactive session that provides opportunities a podium session simply can't. The visual style and flow of a poster feels best to a significant cohort of learners with a visual learning preference, and accessibility barriers can be lowered by the medium and the time afforded by it.

II. POSTERS ARE OVERRATED

I note above that a curious learner *could* extract a new body of knowledge from a poster session, but almost everything about posters and poster sessions makes that next to impossible. Picture a poster. Now be amazed as I describe your vision: there is a large title across the top, flanked by conspicuous institutional logos. There are three columns of text, figures and tables, and a wee font for the references at bottom right. If you take your specs off or close your eyes a bit, it might look well-designed because it is orderly. But jeez man, that's a lot of text! An entire manuscript draft crammed in there! Did you screenshot that table? It looks sort of blurry. Allow me to block anyone else's view as I press my face to the paper to parse the figures. Only 16 minutes to read and get the gist of the poster, a few words with the author, and I still have 12 minutes to look at the other 19 posters in the room!

In short, the ubiquitous poster design maximizes content at the expense of usability and knowledge extraction. There is nowhere but the conclusion to look for a message, the text blocks are impenetrable and the figures — the data — are deprioritized for column-width's sake. Zoom out and you are leaving the session with maybe a few new insights, slightly headachy from threshing through extraneous cognitive load to extract those pearls.

This is no moral indictment, but the literal default setting. It is both accepted and ubiquitous,

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an “expressed preference” that matters even though it betrays best practices in limiting the interaction costs of learning. We all have and share PowerPoint templates that remove much the work of design, then use it for years. No doubt the evolutionary tree of your current template converges on some PowerPoint 97 poster on the efficacy of Suby’s G solution after an abnormal Whittaker test — indeed there are probably a few primordial bytes from a long-faded mentor’s keystrokes, ancient DNA from the first furtive steps from bristol board and glue sticks to 1s and 0s.

Attention to the user’s experience when designing a poster — not contorting to fit a template — is the necessary step to improving the problems above. A blank sheet of paper, a sense of the main message of the work distilled into a sentence or two, and the cleanest edits of tables and visualizations you can make are the ingredients. A guiding principle ought to be, “If an observer had 90 seconds to get the message, how would I build that?” I have no graphic design or usability design pearls or suggestions other than *big text, big visuals*, but beauty is not the goal after all.

There is dearth of research into how users truly engage with posters, but a wealth of psychological literature into similar topics. It may feel risky, disingenuous, or even lazy to build a poster purposefully bereft of ink, words, and density, but the principles of working memory and cognitive load are well-articulated and at play. The act of decision-making, winnowing, and planning such a poster likely *builds* knowledge in the presenter as they are forced to engage deeply in understanding the fundamentals of their work. There are no clear template winners (indeed, I just suggested staying away from templates ;), but several resources to (better?) articulate these ideas and offer suggestion. The most famous — or at least viral — is the #betterposters videos of psychologist Mike Morrison.^{1,2} These have been widely disseminated, and you may have encountered an odd-looking poster with a great purple color block, a pithy conclusion statement in giant type, and a QR code conforming to the initial design idea. I’m not sold on that particular build but the snappy video and data- and principle-driven narrative are certainly stirring. Seek out a few critiques and it’s hard not to come away with the idea that our stagnant poster design ethos has passed its sell-by date.

III. E-POSTERS ARE OVERRATED (FOR NOW)

All this talk and reimagining and user-centered design has us on the cusp of great leaps in knowledge transla-

tion, and...posters themselves are losing ground in the all-digital world. It is a massive drag to schlep a poster tube across the continent, to find a printer for \$100, to pin it up, and then fire it in a garbage can after its 120 minutes in the limelight. Wasteful and annoying and anachronistic. Surely there’s so much we can do with digital that static paper can’t?

The current state of electronic posters does not seem to exploit any of these possibilities. There is no imagining conference halls with hundreds of dedicated screens or projectors to literally convert the poster to a digital display format. The cost, logistics, and fallibility of some fraction of screens obviates this, so we move posters online, or into 45-second displays in kiosks, or back to the fleeting navigation by a presenter over four minutes. We now port a 12 square foot poster — still festooned with text and logos and inscrutable graphics — to a laptop screen. The walkthrough glancing-and-absorbing, chatting with authors and friends are lost. Only the mandated or the ultra-curious are likely to navigate to and through a suite of online posters. I don’t know the answer, but I’d suggest that if one can’t achieve the “4D, self-paced, and interactive session,” perhaps the poster (the literal poster now ;) is itself doomed? There is no gospel that states that the bridge between a podium presentation and no presentation at all must be filled by a 4’x3’ paper. A short, well-designed slide show, a polished video, a who-knows-what innovation may be the new knowledge translation link. I sort of hope not.

(If I can get up and get there) I like posters and poster sessions, for the very reason that I’m in some control, and have the chance to interact and pick up dribs and drabs at my own pace. I would lament their loss (and to be clear, this doesn’t yet seem imminent), and hope that we arrive at a future in which we acknowledge user-centered design while still congregating to harvest and hone some pearls. To posters!

REFERENCES

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