

# Presenting scientific work-news media theory in presentations, abstracts, and posters

## ABSTRACT

The effective presentation of scientific work in abstracts, posters, and PowerPoint presentations resembles popular newspaper writing far more than it does traditional paper writing. In the former three, a good “hook” is essential and must be obvious and apparent up front. A slight element of truthful sensationalism is therefore often helpful. Research preparation and presentation and skills of all sorts are increasingly critical in the incrementally competitive world of academia. This paper will offer factual and practical guidelines with regards to preparing research in these formats since self-presentation is essential for career progression. It is not only what we do but how we are seen to be doing it, acceding to Batman’s aphorism: “it’s not who I am underneath but what I do that defines me.”

**Key words:** Biostatistics; computers; PowerPoint; presentations; research; software

## Introduction

Scientific papers are usually written with caution and circumspection, such that each statement is buttressed by references or by inferences from novel results being presented. However, other than for the purposes of paper publication, the submission of scientific work as an abstract, a poster, or a presentation resembles popular media narratives far more than it does traditional paper writing.<sup>[1-4]</sup> In the former three, a good “hook” is crucial so as to hang a paper that is presented in one of these formats. A slight element of truthful sensationalism is therefore often helpful—just like a newspaper headline that catches your eye and invites you to read it.

## Rationale

The commercialization of research has become inevitable as competition for research funding and personal advancement

intensifies. This has been paralleled by pressure from institutions which seek to accrue institutional prestige (that attracts prominent researchers, and thus students, and thus funding). The “publish or perish” mantra has thus become increasingly ubiquitous, persistent and indeed vital for individual and institutional survival.

## Media Writing Theory


The editors and journalist Harold Evans has baldly stated, vis-à-vis newspaper writing, that:

It is not enough to get the news. We must be able to put it across. Meaning must be unmistakable, and it must also be succinct. Readers have not the time and newspapers have not the space for elaborate reiteration. This imposes decisive requirements. In protecting the reader from incomprehension

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:** reprints@medknow.com

**How to cite this article:** Grech V. Presenting scientific work-news media theory in presentations, abstracts, and posters. Saudi J Anaesth 2019;13:S59-62.

Access this article online	
<b>Website:</b> <a href="http://www.saudija.org">www.saudija.org</a>	<b>Quick Response Code</b> 
<b>DOI:</b> 10.4103/sja.SJA_556_18	

## VICTOR GRECH

Department of Paediatrics, Mater Dei Hospital, Msida, Malta

**Address for correspondence:** Prof. Victor Grech, Department of Paediatrics, Mater Dei Hospital, Msida, Malta. E-mail: victor.e.grech@gov.mt

and boredom, the text editor has to insist on language which is specific, emphatic and concise. Every word must be understood... every sentence must be clear at one glance, and every story must say something. There must never be a doubt about its relevance ... there must be no abstractions.<sup>[5]</sup>

This is equally applicable to the other above-mentioned scientific presentation formats. For this reason, in order to succeed, scientists must accede to the “inverted pyramid” structure just like a newspaper, with the title/heading and introduction dominating for two reasons: to engage the audience instantly and to summarize the narrative so that the audience knows what to expect.<sup>[6]</sup> This should include a justification for the narrative’s very existence and list the important points in decreasing order of importance. From the audience’s viewpoint, “the best intro will demand that you read on. The worst will make it likely that you will move on.”<sup>[7]</sup>

The rest of the narrative must continue to engage and challenge the audience and keep the promise given at the outset—to describe simply, succinctly, and with clarity and thus retain the audience’s interest. The following concrete suggestions were gleaned through years of participation and presentation in the international Write a Scientific Paper (WASP) course, of which the efficient writing of abstracts, the creation of interesting posters, and the effective utilization of PowerPoint are considered essential core topics.<sup>[8,9]</sup>

## Title

The title is like a newspaper headline. It struggles for attention among multitudes, and must perforce be snappy, and not only stimulating but somehow also intriguing enough to encourage a reader to read the first sentence of the rest, the so-called lead sentence that will determine whether the reader can be nudged into following the rest of the narrative. In practice, all unnecessary detail should be dropped from the outset. A title should be in sentence case and in general, if a title includes a colon or a dash, it is likely too lengthy.

## Lead Sentence

Following the title, the lead sentence should grab and hook the reader straight away. It is for this reason that a narrative of this kind should ideally focus on a single message. The lead sentence should be part of the introduction, and the entire narrative should follow the IMRAD (Introduction, Methods, Results, and Discussion) format. This format was first formally introduced by Pasteur (1822–1895), the French biologist, microbiologist, and a chemist who remains renowned for

his discoveries in the fields of vaccination, fermentation, and pasteurization.<sup>[10]</sup>

In general, it is crucial to keep it simple and not to talk down to an audience since this may precipitate a feeling of inadequacy. Prolivity must be avoided at all costs. One must strive to be readily understandable, instantly readable, and the work at hand should instill a desire to continue to pay attention and finish the narrative being presented. The three above-mentioned formats will now be specifically addressed.

## Preparing an Abstract

The keys to abstracts are brevity, clarity, simplicity, and parsimony. Indeed, abstracts beyond a stipulated length will be truncated. An abstract may be a summary of a paper that is being submitted to a journal, or a conference submission for work in advanced stages, or completed for presentation. Nonetheless, the principles are the same.

An abstract must be honest and refrain from unfounded claims or deliberate bias. An abstract is the first thing a journal editor or a conference scientific committee sees. These may reject outright if inappropriate or poorly written/ designed, or send out for review. In the latter instance, a title and abstract are the only parts of the paper that a potential referee sees when invited to review a manuscript for a journal via an e-mail. A poor title and/or abstract may thus lead to swift rejection at the very outset, even prior to formal review. The abstract is therefore a hook, a sales pitch, and should briefly include what is known about the subject and what the research in question adds. An abstract must therefore be attractive in newspaper style<sup>[5]</sup> while adhering to IMRAD.

The introduction is a background: what is known, what is not known, and hence the justification for the study. This segues into the Methods section which should summarize basic information such as data origin/s, sample size, groups used, duration, and the time period of study. The results are key. *P* values should be quoted. The discussion is the primary take-home message and should give some perspective as to the work’s importance.

Acceptance at a conference is useful as it may result in free advice from peers or experts. It is crucial to remember (a mantra that this author reiterates again and again during WASP courses) that an abstract submitted and even presented at a conference, which is not then written up as a paper is a pitiful waste. If research is not published, it is almost as if it has not done! Remember that formal paper publication is a vital part of one’s curriculum vitae.

## Preparing a Poster

A poster is usually presented at a conference. The organizers of such events are often keen to accept as many posters as physically possible since accepted posters mean more conference registrations (and payments). For this reason, a poster in a poster session in a large meeting must vie for attention with several dozens or hundreds of other posters, possibly in one poster session in an event wherein there are several poster sessions. In order to be noticeable, it must be interesting and visually slick, and must somehow stand out. This is crucial, as if a poster garners no feedback whatsoever, it is a waste of the creator/s' time. It is for this reason that a poster must harness newspaper article guidelines.

A poster should not have an abstract, but it may include a very brief reference list and must include a brief list of acknowledgments. Keep it short and simple. A poster is only a summary of a research paper, and not an entire paper or dissertation that is somehow crammed onto a poster. Once a poster viewer is attracted, attention will be retained by good design and good science, and although this may sound cynical, in this author's opinion, in that specific order of importance.

A poster should include as little text as possible. The message should be imparted graphically and creatively, ideally with a total count of  $\leq 800$  words, along with a crisp and clean design that will entice a strolling audience. Since a poster is not a printed page, there is no extant formal convention in which the content may be presented. The desired reading order of the various elements should thus be obvious and if necessary numbered or arrowed.

At a distance of 3–4 m, a poster should have a title that is easy to read and should look uncluttered, with neat illustrations and text. Elements of different sizes and proportions should be used to allay reader boredom. As in a news article, the main points should be one-liners in large font, followed by some detail in smaller font sizes as bullet points, at a minimum of 18 point font. Common, simple, and readable fonts should be utilized. A poster should be read in about 10 min. A contact e-mail is important for potential networking and this may also be printed on the poster as a QR code.

In general, in a conference, an oral presentation ranks slightly higher than a poster. After a poster presentation, it is important to incorporate any useful comments that may have been generated, and to write up the research as a paper. Once again, if research is not published, it is almost as if it has not done.

## Preparing a PowerPoint Presentation

Slide show presentations are integral to the workplace, and PowerPoint is ubiquitous since it ships with the Microsoft Office Suite. However, the increasing sophistication of such software may encourage presenters to privilege form over content. But slide shows should supplement and not substitute a presentation.<sup>[11]</sup>

It is possible to apply scientific research from educational psychology to slide shows so as to not only avoid this fate but also to optimize presentations. This section applies several educational psychology concepts to PowerPoint, most notably those of the Mayer's Multimedia Learning Theory. Slide shows should supplement and not substitute a presentation. Presenters should avoid prolixity, complexity, and gaucheness and strive instead for simplicity, brevity, cogency, and clarity.

Presentations must also be mindful of newspaper article writing theory, to grab the attention of the audience from the outset and keep the attention engaged on the speaker and the presentation's contents.<sup>[12]</sup> Some practical points:

A presentation should adhere to the IMRAD format. For each slide, a picture and a few lines of text should suffice as an *aide memoire* for the speaker to make a point. Speakers should minimize text and attempt a word count of up to 15 words per slide and to not exceed 4–5 lines per slide. Symbols should be used if these can replace words and shorten the total amount of text in the slide. A slide show is not a teleprompter and a speaker should never read from the screen unless reading quotes. Presenters should thus strive to have as few slides as possible in order to retain audience attention. In practice, it is difficult to present more than approximately one slide a minute as faster slide advancement risks losing an audience.

Presentations should be specifically tailored to the audience at hand and should also be paced accordingly.<sup>[13]</sup> Timing is crucial. Overrunning speakers are chairpersons' principal nightmares. Presenters should rehearse and ruthlessly pare presentations to fit their allotted time slot.

Audiences learn better when they are primed with the names and characteristics of the main concepts that are to be addressed.<sup>[14]</sup> Audiences should therefore be familiarized with the names and characteristics of the main concepts and key terms that the presentation will dwell upon, from the outset, along with what the presentation intends to set out to do: typically demonstrate result/s.

Speakers should be well groomed and attired appropriately. The level of formality of the latter should also be pitched to the occasion and audience at hand. For example, the attire during an informal presentation at a journal club during a break at work is totally different to a presentation at an international conference.

It is inappropriate and boorish and even rude for presenters to turn their back to their audiences. For this reason, a comfort monitor is crucial for a presenter to remember the contents of the current slide, which, as already stated, is an *aide memoire* for a speaker to talk from.

The audience's attention may be better retained if it is possible for the speaker to occasionally stray away from the comfort monitor, if space permits. For this reason, a remote "clicker" is useful to advance slides and a quick glance at the next slide suffices for an experienced speaker to continue the presentation.

Readability is increased by high contrast, such as black text on a pale (or even white) background. A theme becomes irrelevant if black text is projected on a white background (this author's personal and admittedly minimalist preference). Text transitions should be very occasional and reserved for particular emphasis. If used judiciously and sparingly, such effects place emphasis where really needed. Overstated effects pertaining to graphics are tasteless and slide transitions should be understated, such as a simple fade.

It is easy for a PowerPoint presentation to corrupt a speaker into elevating form over content, and presenters should beware this possibility. On the other hand, the correct application of the Multimedia Learning Theory has been shown to result in significant improvements in retention when compared with individuals instructed using traditional methods.<sup>[15]</sup> These improvements were shown to also apply to long-term transfer and long-term retention.<sup>[16]</sup>

## Conclusion

The fundamental principles are often forgotten and are best summed up by these two famous quotes:

- "Less is more" by the renowned architect Ludwig Mies van der Rohe (1886–1969), a founder of the minimalist architecture and design movement<sup>[17]</sup>
- "Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away," a quote by Antoine de Saint-Exupery (1900–1944), a French writer, poet, and aviator.<sup>[18]</sup>

The points raised in this paper are crucial as it is not enough for an academic to publish good work in respectable journals. Researchers must also be cognizant of the best ways in which research should be presented.

## Acknowledgments

The inspiration for this paper arises from the international Write a Scientific Paper course (WASP-<http://www.ithams.com/wasp>).<sup>[8,9]</sup>

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Grech V. WASP (Write a scientific paper): Preparing an abstract. *Early Hum Dev* 2018. pii: S0378-3782(18)30402-X.
2. Grech V. The application of the Mayer multimedia learning theory to medical PowerPoint slide show presentations. *J Vis Commun Med* 2018;41:36-41.
3. Grech V. WASP (Write a scientific paper): Optimisation of PowerPoint presentations and skills. *Early Hum Dev* 2018. pii: S0378-3782(18)30404-3.
4. Grech V. WASP (Write a scientific paper): Preparing a poster. *Early Hum Dev* 2018. pii: S0378-3782(18)30405-5.
5. Gillan C, Evans H. *Essential English for Journalists, Editors and Writers*. New York: Random House; 2010.
6. Grech V. WASP (Write a scientific paper): Presenting scientific work. *Early Hum Dev* 2018. pii: S0378-3782(18)30401-8.
7. Cole P. News Writing. *The Guardian*; 25 September, 2008. Available from: <https://www.theguardian.com/books/2008/sep/25/writing-journalism.features>. [Last accessed on 2018 Sep 25].
8. Grech V, Cuschieri S. Write a scientific paper (WASP) – A career-critical skill. *Early Hum Dev* 2018;117:96-7.
9. Grech V. WASP-write a scientific paper course: Why and how. *J Vis Commun Med* 2017;40:130-4.
10. Pasteur L. *Studies on fermentation*. Paris: Gauthier-Villars; 1876.
11. Tufte E. PowerPoint is evil. *Wired Mag* 2003;11:10-2.
12. Ricketson M. *Writing Feature Stories: How to Research and Write Newspaper and Magazine Articles*. Crows Nest: Allen and Unwin; 2004.
13. Blome C, Sondermann H, Augustin M. Accepted standards on how to give a medical research presentation: A systematic review of expert opinion papers. *GMS J Med Educ* 2017;34:Doc11.
14. Mayer RE. *Multimedia Learning*. New York: Cambridge University Press; 2001.
15. Issa N, Mayer RE, Schuller M, Wang E, Shapiro MB, DaRosa DA, *et al*. Teaching for understanding in medical classrooms using multimedia design principles. *Med Educ* 2013;47:388-96.
16. Issa N, Schuller M, Santacaterina S, Shapiro M, Wang E, Mayer RE, *et al*. Applying multimedia design principles enhances learning in medical education. *Med Educ* 2011;45:818-26.
17. Rossell Q. *Minimalist Interiors*. New York: Collins Design; 2005.
18. Smith MA. *Knight of the Air: The Life and Works of Antoine de Saint-Exupery*. New York: Pageant Press; 1956.