



Some thoughts on writing slide presentations: Avoiding ‘death by PowerPoint’

by Richard Clark

Power (point) snoozes

How often have you felt bored, even a bit sleepy, within minutes of listening (and watching) a slide presentation? A true story from my old research institute involved a rather elderly, balding Nobel-prize winner who nodded off during a slide presentation soon after the lights were darkened. This was in the last days of ‘real’ slides, when you could put slides in a projector carousel the wrong way around, and mechanical failures sometimes occurred. On this occasion the carousel jammed and slides were ejected up and out, like empty shells from a machine gun. One slide looped high through the air and landed with some force on the slumbering Nobel-prize winner’s bald pate. Being rudely awakened and somewhat startled, he jumped into the air, providing much amusement and a welcome diversion from the presentation.

None of us—not even Nobel laureates—are immune to slide presentation boredom. So what are the problems that cause such boredom and how can they be overcome? Are slides, and PowerPoint in particular, a good means of communication? There are a variety of views. Ronald LaPorte believes that PowerPoint has become the *prima lingua* of scientific communication and that traditional peer-reviewed journals are becoming obsolete [1]. In response, others have stated that PowerPoint slides rarely stand alone and they need written or oral supplementation [2]. Others go further. As we shall see later, John Sweller (who propounded a theory which helps to explain slide presentation boredom) thinks that the use of PowerPoint presentations has been a disaster [3]. Edward Tufte, who is well known for innovative approaches to presenting technical evidence, states that “PowerPoint is evil. Power corrupts. PowerPoint corrupts absolutely”[4]. We will come back to Tufte’s opinions too, but for the moment we should first try to evaluate why slide presentations can be so soporific.

The main problems with slides

The advice you are likely to hear on how to produce slides is “keep it simple or you will lose your audience’s attention” or maybe “use plenty of bullet points” or even “keep graphs and tables simple.” In my view, *trying to keep things simple causes most problems with slide sets at the moment*. This is not a good strategy for a medical or scientific meeting as it is condescending towards the audience at

they become bored with a lack of content and simple statements unsupported by data.

In an effort to inject something of interest into these bland ‘death by bullet point’ presentations some people like to add animations or cartoons, maybe a colourful background, or worst of all clipart. This variation is a second common problem facing writers of slide sets, and arises naturally from the ‘keep it simple’ scenario. I admit to a personal bias on this subject as I have very distressing memories of clipart from presentations given by an editorial manager. She tried to make the presentations more interesting with humorous clipart stick men, but it failed to relieve the tedium of the latest Excel costing model spread sheet, or other exciting administrative procedures. A shorter presentation without the clipart would have been better to get it over with as quickly as possible.

A third scenario, which is more recognisable to most people, is presenting too much information. This situation is made worse by the low inherent resolution of projected slides or acetates (i.e. you can’t read the things if the text is

too small and cramped). An example of this problem was at a meeting I was writing-up for a newsletter. Here, a Greek clinician presented a scientific paper using acetate sheets which were facsimiles of his published manuscript. Even though the room and the audience were small the text was not readable. Even if the acetates had been readable there wasn’t enough time to read it all. Worse still, the speaker was unintelligible owing to a thick Greek accent, and though the meeting was recorded I could not understand him even when

Imagine a world with no pronouns or punctuation, where any complex thought must be broken into seven-word chunks with colourful blobs between them. This is the reality of a PowerPoint presentation, repeated about 30 million times a day [6].

listening to the recording a second or third time. Luckily it was sufficient to read the published paper when writing-up the meeting!

In the following sections I’ll focus on why the keep it simple approach is the main obstacle to good slide presentations, and how to deal with this problem without falling into the trap described in the third scenario (i.e. avoiding both oversimplification *and* data overload).

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Dick and Jane have fun

PowerPoint guidelines often recommend something like a 6 times 6 rule (no more than six lines of text and no more than six words per line) to keep slides simple. In fact, EMWA also recommends this approach for workshop leaders preparing slides: “limit text to approximately seven words per line, and five or six lines per slide; keep graphs and charts simple” [5]. It’s a bit disappointing when you consider that this is the writing style used to teach young children to read (Figure 1).

Figure 1. Children’s literature provides a good example of how to write slides according to PowerPoint ‘keep it simple’ guidelines (from an unknown ‘Dick and Jill’ book, traditionally used to teach children to read in the USA).



When this simplistic approach is combined with various desperate attempts to enliven the presentation the results are instantly soporific. Another good way to induce sleep in your audience is to place a bullet point in front of each line of simple text, and animate the slides so that each line is revealed as the presenter clicks a button and simultaneously reads the line out aloud. Perhaps animate is an unfortunate and inappropriate word to use here, as this approach will soon result in audience lifelessness. The cognitive load theory provides a plausible explanation as to why reading and hearing the same text simultaneously has this effect, as has been mentioned in a previous issue of *TWS* [3]. It is far more effective to use visual evidence in the form of a picture, table, figure, graph or chart and discuss or describe what is shown on the slide.

Not only is this simplistic, bullet-pointed method dull, but this format can be misleading. The use of bullets and worse still, strange and complex bullet-point hierarchies (bullets with ‘sub-bullets’ and often ‘sub-sub-bullets’), creates an impression of false causal relations in the minds of the few audience members who are still awake. Often, bullet points seem to have been used randomly, and it is as if someone has carelessly shot each slide of text with a machine gun. As a result, text can be sliced into small, arbitrary and misleading fragments. Thus, bullet points are frequently a poor substitute for the proper use of *language*, and should be used sparingly—or at least thoughtfully.

Salami tactics

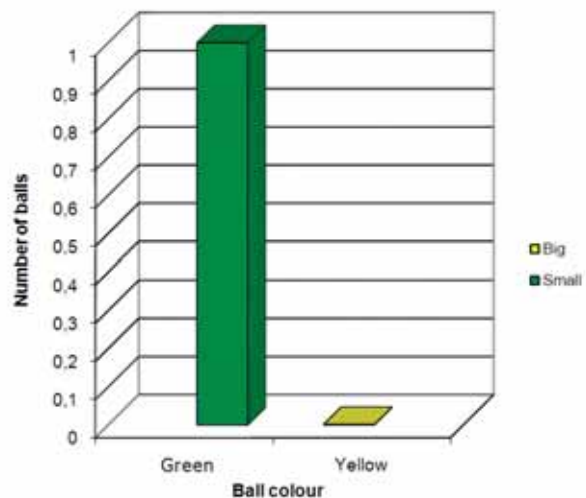
The simple approach is not limited to text. It also extends to figures and tables. All the same points apply about not condescending to offer a snippet of information that you think is important to the audience. An example is a slide showing a bar chart with one or two bars, or a table with three or four data cells. A succession of slides, each showing a tiny gobblet of data, is revealed to the audience with an increasingly hypnotic effect (I like to call this phenomenon ‘salami tactics’), whilst any story, narration, or context, is lost completely (Figure 2).

*As for a picture, if
it isn’t worth a
thousand words,
the hell with it.*

It is often said that a picture conveys a thousand words. Maybe we should update this saying with regards to slide presentations (and particularly PowerPoint which tends to steer the slide writer towards

simple, and yet strangely difficult to read, three dimensional charts and graphs)? The artist Ad Reinhardt is, perhaps more appropriate, stating “As for a picture, if it isn’t worth a thousand words, the hell with it.”

Figure 2. A typical ‘3-D’ bar chart of the type often used in presentations and generated automatically by Microsoft Excel ‘chart wizard’. Note the pointless 3-D effect and that this chart contains little information.



Unfortunately bullet points have become so ingrained in slide presentations (mainly because of the dreadful PowerPoint default style) that is difficult to get away from them. Bullet points are no more than little black circles in front of phrases that are supposed to summarise something. Remember, *using bullet points is not compulsory*—you can even use full sentences if you want! Again, bullet-point phrases slice the content of each slide into thinner and thinner fragments. Is this good? Sometimes yes; sometimes no. Sometimes it is very liberating to write in normal English and it can be far clearer. Compare the following well-known speech by Winston Churchill given on 4 June 1940, after the evacuation of British forces from Dunkirk, with a

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Figure 3. Winston Churchill's 'we will fight them on the beaches' speech as a PowerPoint presentation using the PowerPoint default bullet-point style and typical use of unnecessary clipart.



slide set made using the PowerPoint autocontent wizard, selecting the 'recommend a strategy' option from among the presentation types (Figure 3).

"We shall not flag or fail. We shall go on to the end. We shall fight in France, we shall fight on the seas and oceans, we shall fight with growing confidence and growing strength in the air. We shall defend our island, whatever the cost may be. We shall fight on the beaches, we shall fight on the landing-grounds, we shall fight in the fields and in the streets, we shall fight in the hills. We shall never surrender!" [7].

Some solutions?

This is the difficult part, and there is no simple answer. On the one hand, being too simplistic will lead to audience boredom and lack of meaningful communication of data or results. Clearly, this approach is particularly unsuitable for scientific presentations. The audience needs to be treated like intelligent adults and shown *evidence*—which is often complex—rather than the presenter's semi-justified opinions. The audience may then be interested, questioning and involved, and ultimately more convinced if the evidence is presented effectively and they can understand it for themselves. The reverse of this is when too much detail is included so that the audience cannot follow the presentation.

The solution is to think a bit when making slides. It is so easy to fall into the bad habits outlined. It is, however, not always easy to think of novel ways to present data without losing detail or becoming too difficult to follow, but it is possible. For example, Leonardo da Vinci and Galileo were

expert at integrating figures and text on a page to aid explanation, in what is now almost a lost art. Many other examples can be found in the writings of Edward Tufte, who is no friend to PowerPoint [4,8,9].

Tufte rightly argues that slides are a low-resolution format, and therefore not particularly suitable for conveying much useful information. Furthermore, slides are frequently cluttered with all sorts of design

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elements, unnecessary pictures and bullet points, all taking-up a surprising amount of the little space that is available. After all, if the rate of information transfer in slide presentations is 'approaching zero', as Tufte writes, then what is the point of having these meetings at all? We could use handouts which contain the detailed information required. (Think about how much readable

information is contained in a scientific paper, for example: this is a high-resolution method.) Thus, we return to LaPorte's belief that as scientific papers have been in existence for about 300 years it is time for a change, and that peer-review articles may soon be replaced by PowerPoint [1]. In response I would add that if something has been in use for 300 years it has probably survived because it is still doing something useful and different from any other formats of communication, rather than being due for replacement.

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One final ‘nuclear’ solution that should be mentioned is not to use slides at all in your presentation. This format is usually more suitable to a speech rather than a scientific talk though, as the audience will be unable to view any proof you may have (unless you give a handout such as published paper(s) on the subject). However, this approach can result in a very interesting talk as the audience’s attention is focussed on the speaker rather than slides. A skilful and very knowledgeable speaker may be able to work this situation to their benefit, but most would consider jotting down some key points on cards in case they get stuck even if they do not usually need to use them.

Those of us who want or need to use slides should remember that no quantity of clipart, cartoons, bullet points, weird 3-D charts, strange slide layouts and colours can make a presentation interesting for long. Let’s cut out the cheesy clipart, and ditch the default styles of bullets and charts favoured by slide presentation software. This is the first and most important step. After this, each presentation does warrant the cliché ‘a case-by-case basis’. In each instance thought will be needed rather than inputting data to templates. This approach should *give priority to scientific evidence* (otherwise there is no point having a presentation as there needs to be something substantial to communicate). Next, communicate this evidence effectively but without over simplification. By following these steps we can produce an interesting and informative presentation because the audience are given information and evidence that they may be interested in and which could be useful. This means the audience might stay awake.

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Call for contributions: The lost art of science writing

I am gathering examples of the style in which science used to be reported for a future feature in *TWS*. All contributions, for publication as boxes (up to 1000 words), are welcome.

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Three words or one?

For the moment, let’s disregard anything else you may want to do to this sentence to improve it (see my ‘possible edit’ below), and just consider *as well as*. Is it ever necessary to use it when writing in our field? Speaking is quite a different matter.

Safety pharmacology studies complying to GLP requirements were performed for <drug> and investigated effects on the central nervous system, respiratory and gastrointestinal systems, skin and subcutaneous systems as well as the cardiovascular system.

By the time they got to *subcutaneous systems* in this sentence, the author thought ‘We’ve had enough *ands* here, let’s put in an *as well as* to avoid repeating *and* and make it more interesting’. This is not necessary and makes this cumbersome sentence even worse. It is acceptable to repeat *and* as many times as you want in our type of writing as long as all the elements in a list are appropriately separated by commas (or semi-colons, if you like—I don’t). One solution for the above might be (possible edit):

GCP-compliant safety pharmacology studies investigated the effects of <drug> on the central nervous, respiratory, gastrointestinal, skin and subcutaneous, and cardiovascular systems.

Note the comma before the last *and* because of the *and* between ‘skin and subcutaneous’. If ‘skin and subcutaneous’ were not there, the comma before the last *and* is optional.

Some authors think that using *as well as* means that the verb in a sentence does not need to be in the plural:

Pursuant to article 67 (6) AMG, the National Association of Statutory Health Insurance Physicians (Kassenärztliche Bundesvereinigung) as well as the competent federal authority (Paul Ehrlich Institute) was informed immediately.

This is not the case. You still need to use the plural, so you may as well use *and*.

Maybe the best reason is that *and* is always shorter than *as well as*!

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