



研究成果を英語で伝えるスキルに磨きをかけたい皆さんへ：このシリーズでは、東京大学のウッドワード先生が、あなたの今の英語能力を使って成果をより効果的に上手に伝えるためのアイデア、作戦、ヒントを紹介します。また、日本語でのプレゼンにも役立つ多くのアイデアも見つかるでしょう。

By Invitation of the Editor-in-Chief

English Scientific Communication Part 5—Using presentation software effectively—key principles



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In this series of articles, we are looking at methods to communicate science more effectively in English. As chemists, when we wish to communicate our research at conferences and symposia, there are two common ways in which we do so: posters and oral presentations. In today's article, we turn our attention to oral presentations and focus on the most powerful tool we have available: presentation software. There are many different pieces of software you might use to assist you in delivering an oral presentation, including Powerpoint, Keynote, PDF and Prezi. Here we will not focus on any particular platform, but will discuss some basic design principles and usage strategies that will supplement and complement your spoken English, making it both easier for you to deliver your presentation, and easier for your audience to understand.

The power of images

In English, there is a famous expression, "a picture is worth a thousand words." The importance of this concept is never greater than when we are presenting, particularly in a non-native language. We can let the picture take over the hard work for us! In previous articles, we introduced John Medina's brainrules.net, where he highlights 12 key ideas based on the way the human brain works. Brain rule number 10 is that "vision trumps all other senses." Studies have shown that our recall based on hearing something new improves six and a half times if we see a picture about the same thing at the same time. This is a great combination in presenting—if we can add pictures to illustrate our ideas when speaking, the

audience will be less reliant on the quality of our English and have far better understanding and recall of our ideas.

Naturally, when presenting chemistry, we will be using plenty of visual representations including reaction schemes, 3D structures, equations, graphs, spectra etc. Next month we will talk in more detail about how best to use these items. However, do not be afraid to use simple images instead of text to make important ideas more memorable. Think about how we often use cartoons or icon pictures to explain things—for example the signs next to the priority seats on the train. Visual expression of concepts can compensate for poor quality English explanations, so think about creating simple graphics to explain key ideas and supplement your descriptions, even if they are not technical ones.

The power of animations

Moving on from images, the use of short movie clips and animations in science presentations can be extremely powerful. Unfortunately, on many occasions, presenters are not sufficiently technically prepared to use these properly and often clips and animations don't play properly or require opening a different piece of software. This can seriously interrupt the flow of a presentation and so if you plan to use animations or movie clips, make sure you understand your presentation software properly and arrange the clips to play smoothly, directly within your presentation they work in all situations. For example, in some cases you need to have the video or animation files in a particular folder while in other cases they are

embedded in the presentation file (this is preferable). If you bring your presentation on a memory stick, sometimes the connections get broken. If you wish to show a video clip from the internet, for example from YouTube, then don't open a browser during your presentation. Instead you should use one of the many available pieces of software or browser plugins to download the clip, trim it to just the part that you want to show and then insert it directly into your presentation slide (along with appropriate references and credits and any additional useful annotations). It may be necessary to convert the file to a different format for this to work, but there are good free tools available for this. Proper preparation is essential for a smooth presentation and the time spent doing this is always time well spent.

Text or no text?

There has always been a lot of debate over the use of text in presentation slides. Many experts argue that you should avoid using text as much as possible and based on the earlier discussion, it is clear that using appropriate images is much more effective. However, when presenting in a non-native language, using text on presentation slides can be extremely helpful for both you and your audience.

When speaking in a non-native language, two common problems are forgetting words and poor pronunciation. Using text on presentation slides can help with both of these things. The first one is very straightforward—hard to remember technical words can be included on presentation slides so that you can quickly refer to them if necessary.

With the extra challenges of presenting in English, it is also useful to have short, key bullet points on slides to remind you of the sequence and structure of the presentation and to help you avoid missing out important parts. What you should work to avoid is having long detailed bullet points and slides filled with text. Most importantly, you should work hard not to read from your slides—this is very frustrating for the audience and will cause them to lose interest quickly.

Problems with poor pronunciation can be solved very effectively using presentation slides. Understanding the reason for this can be extremely helpful in helping design presentations and once again we can turn to neuroscience. Multisensory or multimodal integration is the study of how we process different forms of sensory input (e.g. sight, sound, touch) simultaneously. In particular, it seems that the nervous system can integrate the different inputs to generate a single response. A classic example of tricking the brain based on different inputs is the McGurk effect, in which hearing a person making a particular sound while seeing the person making a different sound can cause a third, different sound to be perceived (a nice example is available on YouTube at <https://www.youtube.com/watch?v=G-IN8vWm3m0>). Interestingly, this effect seems to be stronger for English native speakers than Japanese! We can use a similar trick to help with pronouncing difficult words. If the audience is able to read the word at the same time it is spoken, they will not notice the pronunciation is poor. In cases where they may not have understood the word at all, they now perceive it clearly. We can use the same concept to enhance the power of images, by synchronizing their appearance in the presentation slide with our speech. By instantly providing a context for what is being said, the audience can narrow down the possibilities of what is being said and understand it more clearly.

Remote control

This begs a question. How can we ensure that words and images appear at the same time we are speaking, as this is necessary for the greatest effect? The problem is one that is very easily solved using modern presentation software and a small handheld presentation remote control. When preparing presentation slides, instead of making them static, it is extremely powerful to have text and / or images appear on the slide at the same time you are speaking. To do this, you need to learn how to use the animation features of your presentation software. It is very straightforward to make objects appear, disappear or even move or be emphasized on a single mouse (or remote button) click. Try to buy or borrow a presentation remote control and practice using it. It soon becomes second nature to click the animations forward as you speak and the audience can experience difficult words or images to simplify complex ideas at exactly the same time you are speaking about them. It is hard to express on paper how effective this can be, but try watching a video online of the late Steve Jobs giving an Apple keynote presentation. The appearance of bullet points and images is synchronized with his speech and the effect is smooth and powerful.

In article 2, we discussed a basic model for information processing by the human brain. We highlighted the importance of both the restricted size of the working memory and the way the perception filter selects what information to pay attention to. These ideas are extremely important in slide design. The most important idea is to not present unnecessary information to the audience, as it will distract them. If you present a slide with four different graphs on it and then spend 5 minutes talking about only the first one, the audience will be distracted by the presence of the other graphs. They will look at them carefully and try to understand what they mean. This will divert their atten-

tion away from what you are saying. Instead, you should only show them the first graph while you are talking about it. Fill the entire slide with that one graph and have it appear only when you start to talk about it. When you are ready to talk about the next graph you have two choices. If you will not refer to the first graph again, then simply remove it. If you later want to refer to it or compare it with the second graph, then use an animation to shrink it and move it to the corner of the slide. You may also want to fade it to gray, to keep the audience's attention away from it. You can then bring in the second graph when you start to speak about it and you can use animation to later put the two graphs side by side (restoring the first one's colours) for comparison. By always limiting the information you present to the audience at any time, you can keep them focused on what you are saying and make use of the multisensory integration described above. Using a presentation remote control makes all these tasks smooth and easy and will give your presentation a very professional feel.

Developing your presentation to exploit these ideas requires more effort and attention to detail than having simple static slides, but the benefits easily outweigh the additional effort required. Once you start to use these techniques, you will find it very natural to synchronize your slide content with what you are saying. Finally there is a huge additional benefit to delivering visual material in this manner. It no longer becomes necessary to use a laser pointer to indicate the thing you are referring to. As introduced previously, "laser pointer wiggle" is distracting and reveals just how nervous you are. By planning your contents carefully and using a remote to control their timing, you can avoid using a laser pointer altogether.

Next month we will look into some more detailed aspects of effective presentation software usage.

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