A guide for writing plain language summaries of research papers

AUGUST 1, 2013 / CHRIS BUDDLE

Some time ago I wrote a post about the need to have **plain language summaries for research papers (https://arthropodecology.com/2012/11/08/science-outreach-plain-language-summaries-for-all-research-papers/).** That post generated terrific discussions, new collaborations and many ideas, and I am now trying to write plain language summaries of my own research as it gets published (https://arthropodecology.com/2013/03/26/seasonality-of-arctic-beetles/). The goal of this current post is to provide some guidance about **how to write plain language summaries.** This work does not come from just from me, but rather from continued discussions with others, notably **Mike Kelly** and colleagues over at **TechTel** (http://www.techtel.com). The idea of plain language summaries resonates with so many people, from the business and marketing community, journalists, through to science writers, researchers and academics. I am continuing to work with Mike, and will share more as our ideas and projects develop. For now, however, it's timely to provide some idea about how to write plain language summaries. As usual, your ideas, opinions, and comments are always welcome!

To revisit, what are plain language summaries?

Plain-language summaries are a way to **communicate a scientific research papers to a broad audience, in a jargon-free and clear manner**. Jargon is defined as technical terms understood only by specialists in a field of study. In this post, I am assuming that plain

language summaries are aimed at a '**scientifically literate**' audience, but an audience that is not specific to a discipline. Most scientists who publish in the peer-reviewed literature are familiar with Abstracts – which are a short synthesis of the research, and which typically highlight the research objectives, method and main findings. Abstract are typically aimed at the audience that will read a specialized journal, but often contain technical terms, and typically jump into a specialized topic quickly and concisely. **A plain language summary is different because it focuses more broadly, is without jargon, and aims to provide a clear picture about 'why' the research was done in additional to 'how' the work was done, and the main findings.**

Plain language summaries are a valuable contribution as they **allow research to be accessed by a broader audience**, and because the people who do the research write them, the findings are directly from the source and should capture the proper context for the research. Plain language summaries can provide a means to **promote research**, whether it is through a publisher, on the blog of a scientific society, or for a University's Media Relations Office. Department Heads and Deans can take these summaries and both understand and promote the high quality science done by their Professors, research scientists, and students. Journalists could read these summaries and not have to wade through technical terms, and have a higher probability of getting the message right. Colleagues can better understand the work that all scientists do, even when disciplines are quite far apart. Other scientists, journalists, the public, government officials, friends and family, can all better understand science if all research papers were paired with a plain-language summary. **Plain language summaries make research available, tangible, and are a way to truly disseminate research findings to all who are interested.**

How to write a plain language summary:

The first, and perhaps most essential step, is to explain 'why' the research was done. The overarching reason and rational for the research must be explicitly stated in general terms. It's easy to slip into the habitat of justifying research because "Little is known about x, y or z". However, this is not adequate for a plain language summary – 'something' is surely known on the topic, it's just a matter of defining that 'something' and explaining how the work is expanding beyond, perhaps to a new research direction, or in a different model system. Mike Kelly, from his perspective (and background) in marketing, was particularly instrumental in helping recognize that the "why" of research is vitally important, and explaining this should never be taken for granted. Scientists need to start a plain language summaries from a broad, 'big picture' and more general framework, and work to place their research paper

within this context: **they must address and answer the 'why'**. It takes a lot of time to define the 'why' and describe it to a broad audience – take the time – it will make the other steps much easier.

The second step is to state the more specific objectives of the research. This should flow easily from the first step if there is a clear rationale for the work. The research question is a continual narrowing down to a finer study topic, logically flowing from a big picture overview of the discipline into which the research is nestled. A research objective could be phrased as a question, or goal, and may have several sub-questions.

The third step is to explain 'what' you did to answer the research objective. Too much detail will be overwhelming and confusing, too little will not allow the reader to envision how things were done. Try doing a flow-chart that depicts the process of the science, and use this as a guide to writing how the work was done. The goal of a plain language summary is not to allow other scientists to follow your methods, but rather to provide readers with a sense of how you did the work, in broad brushstrokes.

The fourth step is to provide an interpretation of results andmake them relevant. Unlike a scientific paper, which typically presents results in a linear fashion and independent of a discussion, plain language summaries should integrate the results with a discussion or interpretation. A plain language summary should show readers how the results to fit together and provide insights into the bigger framework or context of the research. It is not necessary to provide all the results, nor is it necessary to provide specific details about each observation of experiment; rather, the results must tell a story and inform the readers of what you found and why the findings are important relative to your research question. The end of your summary should scope out again, and leave the readers will a strong and positive sense about the contribution of your science to the big-picture that you developed at the start.

The last step is to go through the plain-language summary with a keen eye for meaning and jargon. Assess each sentence and see that the writing is drawing out the meaning from the research, whether it is a description of the study organism or system, or a rationale for quantitative modeling. Without attention to meaning, at all levels, a plain-language summary will be a re-packaged Abstract, which is to be avoided. Circle or highlight all terms that could be considered jargon – **have a friend, an uncle or a colleague from a different discipline read over the work to confirm that the jargon is gone**. When jargon is identified, rewrite in non-technical terms – it will take more space, but this is better than having terms that cannot be understood by a general audience.

Then: edit, edit, and edit again.

Some hints….

- If you are visual person, **draw the plain language summary before writing it**, this will help draw out the meaning and allow you to understand the flow of the summary and how the different sections fit together.
- It will likely be helpful to first write your plain language summary with headings. Use headings such as "**Why we did this work", "How we did this work", "What were the interesting things that we discovered"**, etc. Afterwards, re-work the summary to remove the subheadings.
- **Don't talk down to your audience**. A common mistake is the 'dumbing down' of the research and this must be avoided. As mentioned, you are assuming the audience for this summary is scientifically literate, and thus you need to speak to them in this way.
- Aim for about 500 words – more is too much, fewer can be difficult, especially if your research is highly technical.
- **Have your summaries read by other people outside of your discipline**, and then have them explain it back to you. If it's a good summary, the explanation of your own work should be clear, accurate and precise. If it's not, find out the trouble-spots and re-work the summary.
- **Finally, don't rush the process**. Plain language summaries are very difficult to write; they take time, and often draw upon skills that have not been part of a researcher's typical training. Write the summary, leave it for a day or two, and come back to it. It is very important to get it right, as these summaries have the potential to be read by many more people than would normally read a scientific paper within a journal.

In sum, I hope you find that there is value in plain language summaries, and that this guide provides some ideas about how to write one.

You may have more tips or better ideas – please share! (comments welcome…!)

Academia, Methods in science, Outreach

HIGHER EDUCATION, **OUTREACH**, **PLAIN LANGUAGE SUMMARY**, **PUBLICATIONS**, **RESEARCH**

7 thoughts on "A guide for writing

plain language summaries of research papers”

1. ***savrajgrewal***
   AUGUST 1, 2013 AT 1:17 PM
   Hi Chris – another great post.

   Clear, concise writing is ESSENTIAL for all scientists. And not just in plain summary abstracts, but also in all papers, grants and reports. This is a point that I always try and get students to understand

   One resource I always turn to (and HIGHLY recommend) when I am writing is “On Writing Well” by William Zinsser. I included it at the top when I posted a list of my favorite “books for scientists” on our lab web page (www.thegrewallab.com). As I say in the post, I always bore students to death with how good I think the book is. But I recommend each lab (and scientist) should have a copy, and I always go back and re-read it when I start writing a new grant or paper.

   REPLY
2. ***ResearchImpact (@researchimpact)***
   AUGUST 1, 2013 AT 5:13 PM
   Thanks for the guide. I agree with the previous comment that this is an essential skill and it does need to be nurtured. As part of our institutional knowledge mobilization services we have been writing ResearchSnapshot clear language research summaries for about 5 years. We have 300 or so on our on line searchable database at http://www.researchimpact.ca/researchsearch. We have also published on this work:

   http://yorkspace.library.yorku.ca/xmlui/handle/10315/18163

   We work with a clear language practitioner to give clear language writing workshops to graduate and undergraduate students.

   I am interested in linking to any other repositories of clear language writing. The guide is great and if it gets used to produce content please post it as a comment here so we can connect to other examples of this practice.

   REPLY
3. Pingback: Tornado Quest Gee-O-Science Links For July 29 – August 4, 2013 | Welcome To Tornado Quest

4. Pingback: Morsels for the mind – 9/8/2013 › Six Incredible Things Before Breakfast

5. Pingback: Interesting Links: 3 hobbies for scientists, illustrated book of bad arguments, and more | fossilosophy

6. Pingback: What I learned from an arthropod ecologist « #GlobalHealthNut

7. Pingback: Yes? Or No? Or HOW? Catching a Predator at Birth (Maybe) | Emerging Technologies Librarian