The Science(?) of Documentation

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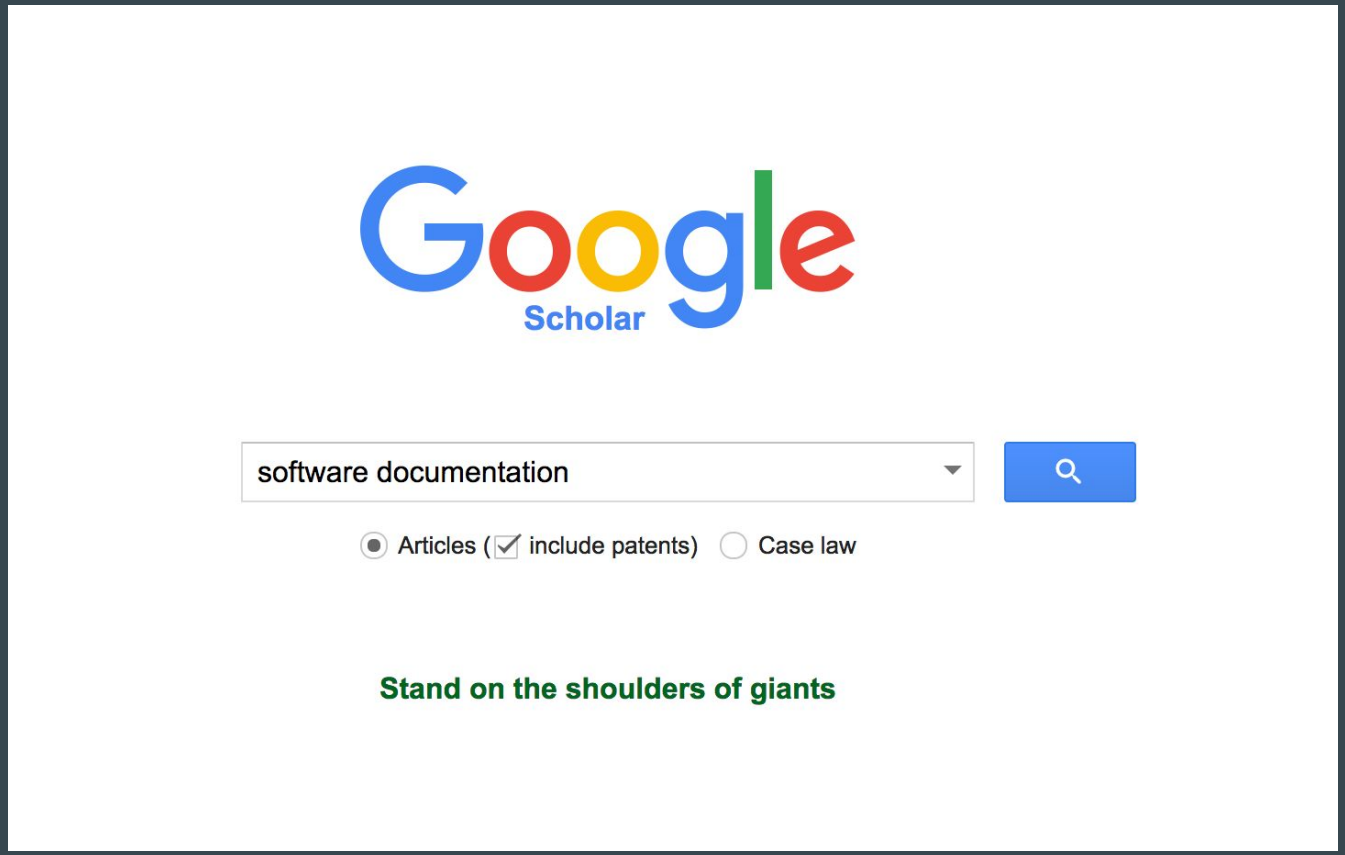
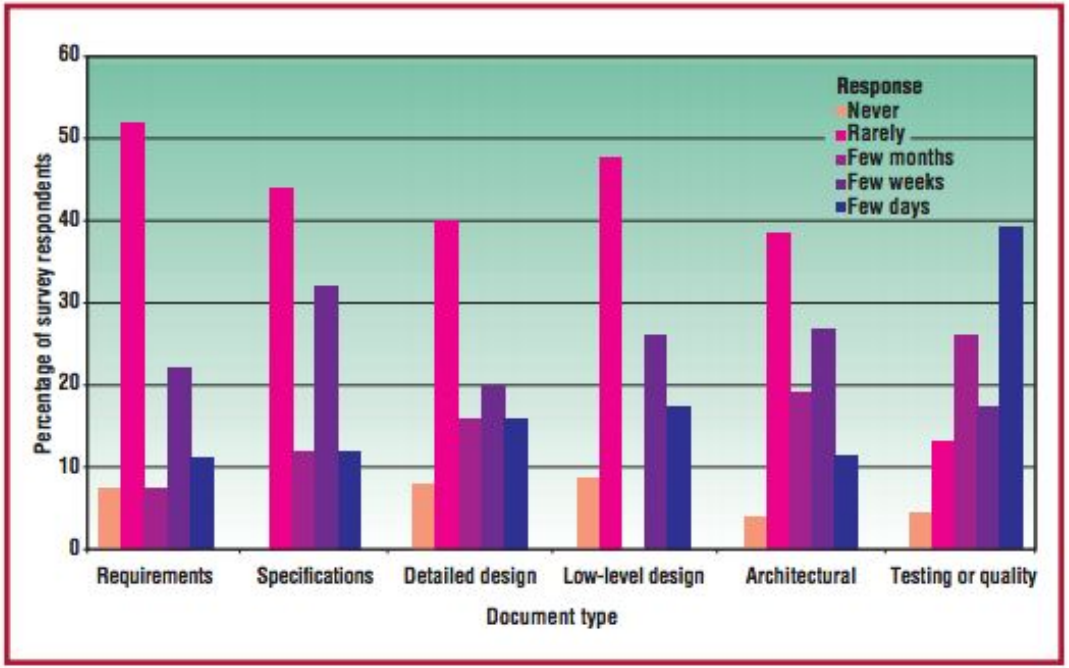
https://github.com/anzelpwj (← slides available here)

Let’s go to the GOOG



Most people think documentation is out of date, go to source code

Figure 1. The time between system changes and documentation updates for different documentation types.



Lethbridge TC, Singer J, Forward A. How software engineers use documentation: The state of the practice. IEEE software. 2003 Nov;20(6):35-9.

Forward A, Lethbridge TC. The relevance of software documentation, tools and technologies: a survey. In Proceedings of the 2002 ACM symposium on Document engineering 2002 Nov 8 (pp. 26-33). ACM.

Roehm T, Tiarks R, Koschke R, Maalej W. How do professional developers comprehend software?. In Proceedings of the 34th International Conference on Software Engineering 2012 Jun 2 (pp. 255-265). IEEE Press.

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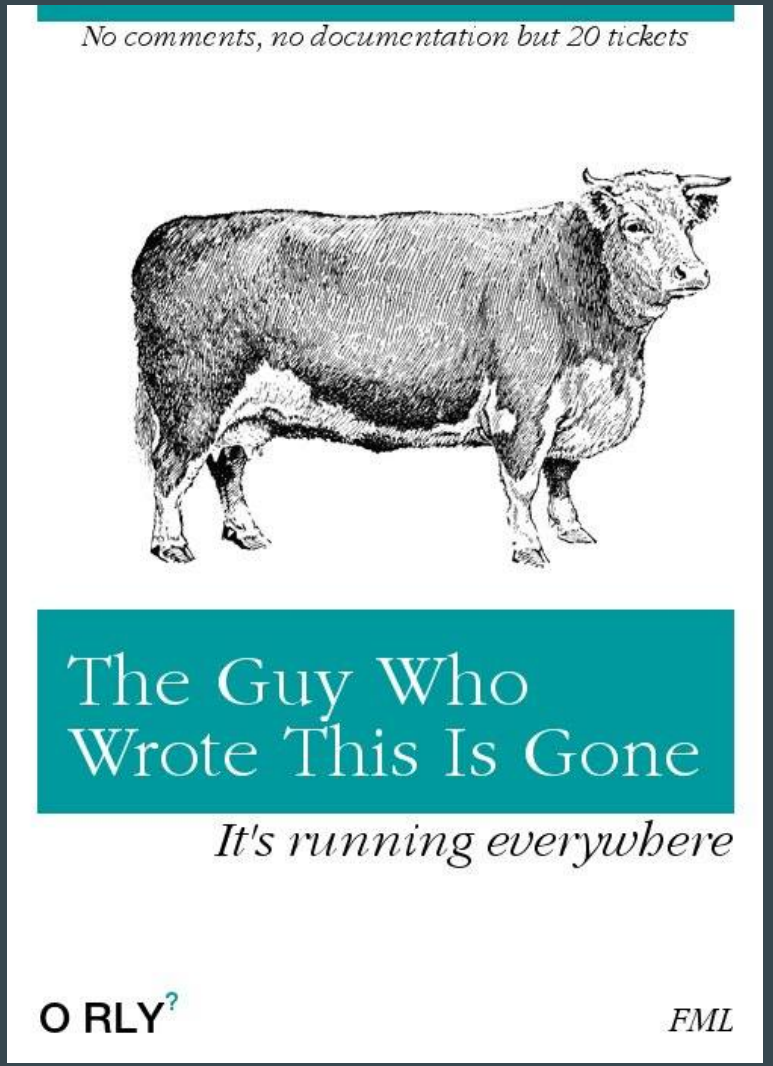
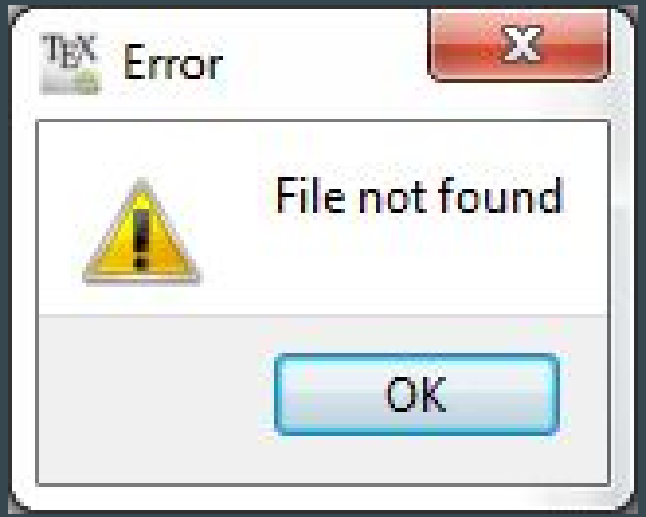

No comments, no documentation but 20 tickets
The Guy Who Wrote This Is Gone
It's running everywhere
O RLY?
FML

Anything else “software/technical documentation”?

- Anything cultural that improves documentation?
- Different development methodologies?
- Are auto-doc tools good? Bad?
- Hour-for-hour, what are the most important documents to write?
- Bueller? Bueller?




YOUR SCIENCE IS BAD
AND YOU SHOULD FEEL BAD
imgflip.com


SCIENCE IS
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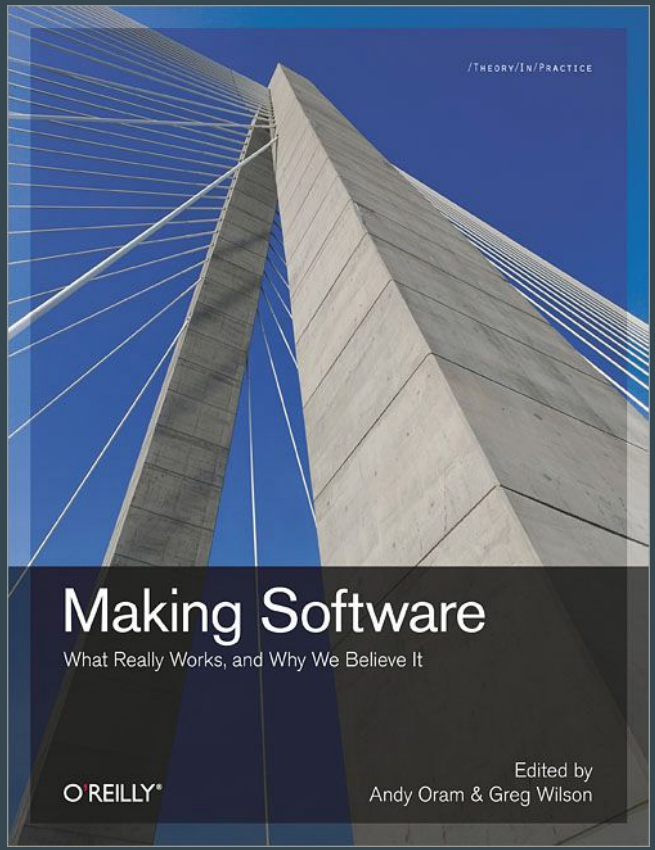
Coding isn't that much farther along

"Computer ~~Science~~ Strong Opinion"

- Greg Wilson

C-style syntax is as hard to learn as a randomly generated language

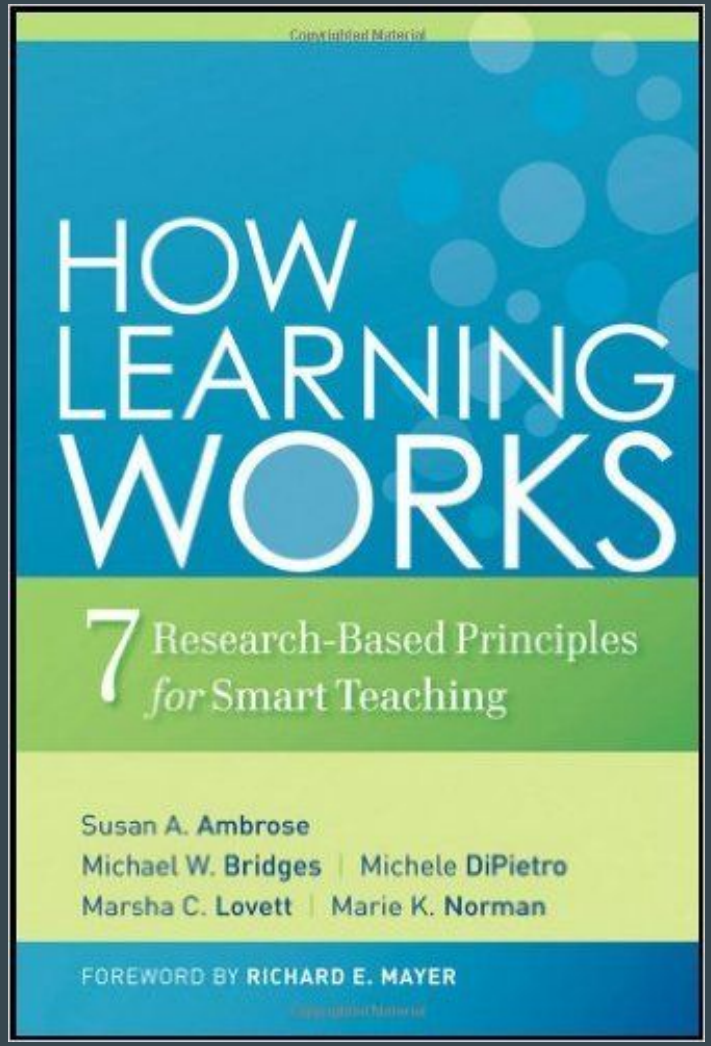
- Andreas Stefik



You can do science!

Educational psychology

- Ambrose et al. “How Learning Works”
- Guzdial “Learner Centered Design of Computing Education”



Look at study quality

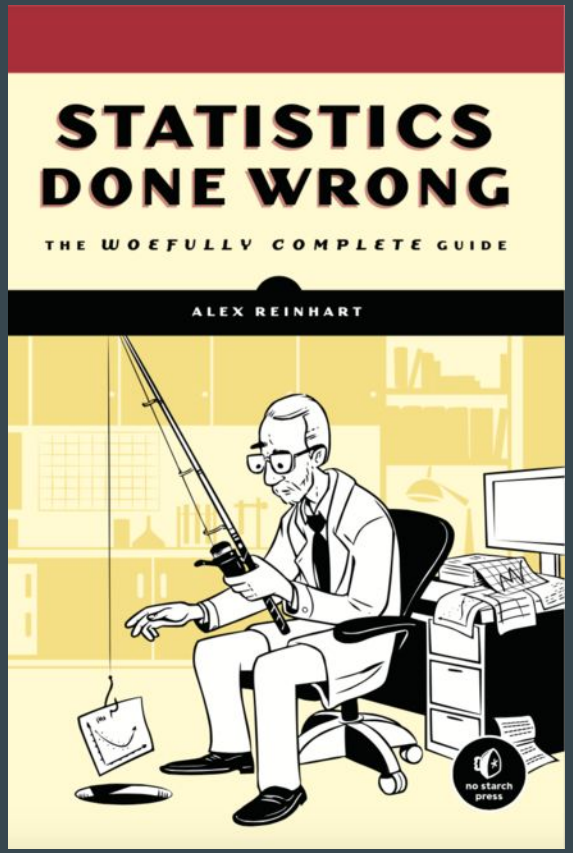
- Sample size
- Error-bars
- Significance
- Evidence hierarchy

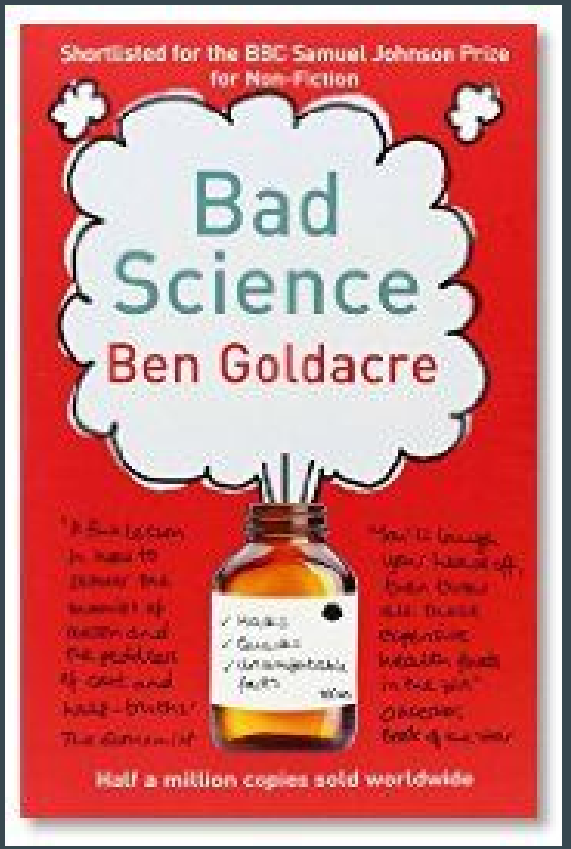
Meta-analysis

Randomized controlled trial

Survey

Case study





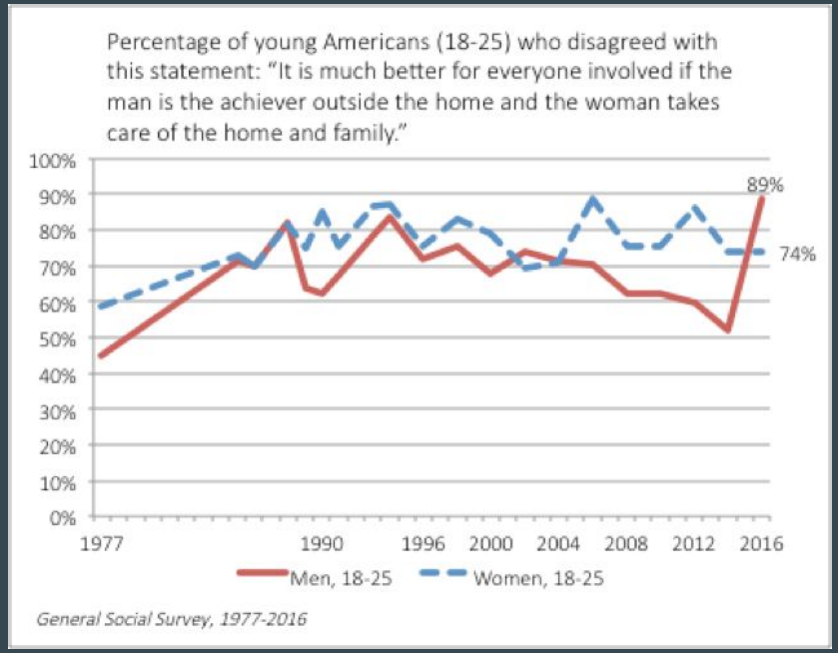
One final thought...

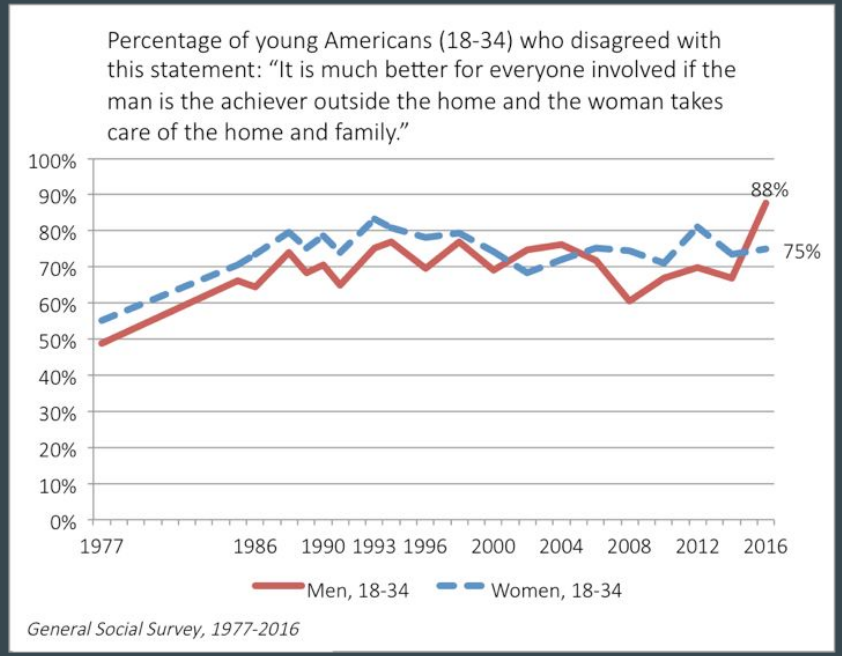
Articles in the [NEJM] Journal that were covered by the [New York] Times received a disproportionate number of scientific citations...The effect was strongest in the first year after publication, ***when Journal articles publicized by the Times received 72.8 percent more scientific citations than control articles.***

DP Phillips, et al. New England Journal of Medicine, 1991 “Importance of the lay press in the transmission of medical knowledge to the scientific community”, DOI: 10.1056/NEJM199110173251620

In conclusion

Look at study quality





https://thesocietypages.org/socimages/2017/04/03/adventures-in-garbage-millennial-confirmation-bias/

Educational psychology

- We build knowledge on prior models
- It's helpful for students to see mistakes being made ("expert blind-spot")
- Practice works better for facts, worked examples for skills
- Subgoals improve performance