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INTRO TO SCIENCE WRITING

Week 2 – Spotting Studies

7/18/2020

Thinking critically doesn't mean being critical

- Put in effort to understand the deeper issue/project/system
- Be willing to question things and not to take them at face value
 - *Researchers often appreciate it when people ask critical thinking questions*
- Sample critical thinking questions:
 - *What do you mean by that?*
 - *What do your critics say about that?*
 - *How does that work?*
- Be alert during interviews and don't solely rely on questions you've written beforehand
- Revisit your sources based on information you gather to see if it checks out
- How well do you have to know a study to pitch it for an article?
 - *Jumping the gun (such as only reading the study's press release) can be trouble*
 - *Depends on the situation: competition, reputable research/journal, expertise*

Headlines are telling

- Article 1 (Washington Post): https://www.washingtonpost.com/news/to-your-health/wp/2017/09/13/researchers-find-hint-of-a-link-between-flu-vaccine-and-miscarriage/?utm_term=.6c9c0e1f6c77&wpisrc=nl_rainbow&wpmm=1#comment
 - *Headline changed from “Flu vaccine may be linked to miscarriage” to “What to know about a study of flu vaccine and miscarriage”*
- Article 2 (STAT): https://www.statnews.com/2017/09/13/flu-vaccine-pregnancy-miscarriage/?utm_source=STAT+Newsletters&utm_campaign=ec12d9db57-MR&utm_medium=email&utm_term=0_8cab1d7961-ec12d9db57-134435473
 - *Headline: Study shows miscarriage risk may have increased after flu shots, puzzling researchers*

Conflicts of interest

- Researchers who are pioneers in their field have a stake in supporting their own theories
 - *Motivated by funding, grants, general exposure*
- Researchers funded by industry including food industry, drug company, tobacco
 - *Motivated by profit*
- Some researchers in both categories receive open-ended funding and are free to design the study as they want, but they still know which organization their money is coming from, creating pressure to make the study favorable towards the source of money
 - <https://www.vox.com/2016/3/3/11148422/food-science-nutrition-research-bias-conflict-interest> – *Marion Nestle tracked all industry-funded food and nutrition research she found. Of the 168 industry-funded studies she has examined, 156 boast results that favor the funder. That's more than 90 percent.*
- Importance of peer reviewers – supposed to act as an independent body reviewing the quality of journals, which further impacts importance and impact
 - *Top general journals: Science, Nature, NEJM, JAMA, PNAS, Cell, PLOS, Lancet, BMJ*

Is the study good?

- Researchers

- *Follow the money: is it from a company or other party of interest?*
- *Is there an agenda or conflict of interest?*

- Study

- *Do you agree with the methods?*
- *Do they ask the right questions?*
- *Is the study far-reaching?*
- *Does it involve people or other organisms (yeast, zebrafish)?*

- Conclusions

- *Do you agree?*
- *Are they fair?*
- *Does it make sense?*

- Note that some topics, such as diet and chronic disease, are hard to research

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CLASS EXERCISE – STUDY ANALYSIS

Studies

- Group 1: <https://onlinelibrary.wiley.com/doi/epdf/10.1002/oby.21185>
- Group 2: <https://drc.bmj.com/content/3/1/e000115>
- Group 3: <https://academic.oup.com/ajcn/article/103/3/775/4564591>
- Be sure to pay attention to to the criteria we discussed!