A104/105: Finding Facts in the Alternative World

2018 Computers in Libraries Panel

Panelist Sara Tompson, M.S., Manager
JPL Library, Archives & Records Section
Sara.R.Tompson@jpl.nasa.gov
#CILDC 2018 – Tompson – Intro

1. I’ve been a STEM Librarian since 1987 (with some admin-only gigs)
2. Now working at second Federally Funded Research & Development Center (FFRDC) in my career – the Jet Propulsion Laboratory, run by Caltech under contract to NASA
   • FFRDCs do professional, peer-reviewed and vetted STEM work with government funding
   • Universities and agencies do the same

However, I’m not here to convince you about #2, really…
Instead, let’s discuss:
   • Need for us info pros, ESPECIALLY, to be rigorous
   • Some tools for vetting information so we, and our customers, do not succumb to fake facts

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not constitute or imply its endorsement by the United States Government or the Jet Propulsion Laboratory, California Institute of Technology.
#CILDC – Tompson – Intro – Recognize This?! 

• Image shows phrases that were often used as fake headlines in movies, sometimes TV shows 
  • http://mst3k.wikia.com/wiki/New_Petitions_Against_Tax 
    • (Image source)
  • If you see either “Building Codes Under Fire” or “New Petitions Against Tax” as headlines anywhere but in older movies, be suspicious!

Plus ça change, plus c'est la même chose!

- Tompson, Sara. *Evaluating Information Resources OR Bibliographic Baloney Detection (with apologies to Dr. Sagan!)*. Invited panelist, North Suburban Special Librarians program, *March 5, 2002.*
#CILDC – Tompsoon – Info Pro No No’s

Professional horror stories (mostly on social media):

- Wrong dates
- Mis-citations
- Citing non-authoritative sources or sources who are definitely NOT subject matter experts
- NOT checking sources
- I cop to sharing the too-early-demise-of-Tom-Petty posting – was from national news, so their oops too!
- Errors about as bad on the left as on the right, per my Facebook feed
  - And yes, I have friends of many persuasions.
#CILDC – Tompson – Info Pro No No’s…

• **Your** info pro no no’s to share? …

• We info pros must be good examples, not bad. Even, or perhaps more so, on social media!

• Please, please, please:
  1. Do **not** forward without reading what you forward
  2. Do check the date of the piece you are forwarding

• **See more tips on following slides**
RADCAB - Your Vehicle for Information Evaluation

Click or tap each RADCAB concept for further information.

R | Relevancy
   | Is the information relevant to the question at hand? Am I on the right track?

A | Appropriateness
   | Is the information suitable to my age and core values?

D | Detail
   | How much information do I need? Is the depth of coverage adequate?

C | Currency
   | When was the information published or last updated?

A | Authority
   | Who is the author of the information? What are his or her qualifications?

B | Bias
   | Why was this information written? Was it written to inform me, persuade me, entertain me, or sell me something?
#CILDC 2018 – Tompson – Tools


## The RADCAB™ Rubric

Information Evaluation Assessment

<table>
<thead>
<tr>
<th>RADCAB CONCEPTS</th>
<th>CRITERIA &amp; PERFORMANCE LEVELS</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Worth</td>
<td>Down and Out</td>
</tr>
<tr>
<td>RELEVANCY R</td>
<td></td>
<td>in Researchville</td>
</tr>
<tr>
<td>I have no idea how to find relevant information.</td>
<td>I know I can create keywords from my research questions to find relevant information but it takes too much time.</td>
<td>I create keywords from my research questions and use them to find relevant information.</td>
</tr>
<tr>
<td>APPROPRIATENESS A</td>
<td></td>
<td>I have no idea to discern appropriate information for my age or core values.</td>
</tr>
<tr>
<td>DETAIL D</td>
<td></td>
<td>I have no idea if an information source has enough information for me.</td>
</tr>
<tr>
<td>CURRENCY</td>
<td></td>
<td>I don't care about the currency of my information</td>
</tr>
</tbody>
</table>

jpl.nasa.gov
One of my heroes, the late astronomer Carl Sagan, has some tips for us:

Sagan’s “The Fine Art of Baloney Detection” is a chapter in his 1995 *The Demon-Haunted World: Science As a Candle in the Dark*. Full text of the book is on the Internet Archive!


See also this blog post: “Lie-proof Your Life with Carl Sagan’s ‘Baloney Detection’ Checklist”

Carl Sagan’s “Baloney Detection” Checklist, summarized:

- Wherever possible there must be independent confirmation of the “facts”
- Encourage substantive debate
- Arguments from authority carry little weight
- Spin more than one hypothesis
  - Try not to get overly attached to any of your hypotheses
  - Ask if the hypothesis can be falsified
- Quantify
- In a chained argument, every link must hold up
- Apply Occam’s Razor! (Simplest truth most likely)
The Skeptics Guide to the Universe
Since 2005, “…dedicated to promoting critical thinking, reason, and the public understanding of science through online and other media.”

- Logical fallacies page is very instructive:
  - [http://www.theskepticsguide.org/resources/logical-fallacies](http://www.theskepticsguide.org/resources/logical-fallacies)
- Lively weekly podcast
- Social media:
  - [https://www.facebook.com/theskepticsguide/](https://www.facebook.com/theskepticsguide/)
  - @SkepticsGuide
The Skeptics Guide: Logical Fallacies

• Just a few of the 20+ fallacies the SGU Team describes:

  • Ad hominem – “...any [argument] that attempts to counter another’s claims or conclusions by attacking the person, rather than addressing the argument itself.”
    • Not the same as name-calling in and of itself.

  • Ad ignorantiam – “...basically states that a specific belief is true because we don’t know that it isn’t true.”
    • UFO proponent’s basis
Post-hoc ergo propter hoc – “...assumes cause and effect for two events just because they are temporally related...”

Somewhat similar to false causation. E.g. I had a cough. I saw a white dove. The cough went away. The dove was a positive spirit. DOES get complicated, with the placebo effect at work!

False Dichotomy - Reducing many possibilities to only two. “This fallacy can also be used to oversimplify a continuum of variation to two black and white choices....”

For example, science and pseudoscience are not two discrete entities, but rather ...fall along a continuum...”
#CILDC 2018 – Tompson – Library Publication Example

• **LJ** is offering a two-part course to help librarians, and their patrons, identify fake news!


---

**Facts Matter: Information Literacy for the Real World**
March 28 & April 11, 2018

*Join us* for the next generation of our wildly popular 2017 course: *Fighting Fake News*

Live Interactive Sessions on Wednesdays from 2–4 PM ET: March 28 & April 11, bridged with Homework, Online Workshops, Discussions, and Resources. Certificate of Completion Provided.

Also available On-Demand! Can’t make a live session? All sessions will be available to you ‘on demand’ following the initial broadcast. Libraries serve people of all backgrounds and beliefs and function as trusted, nonpartisan sources of accurate information for their communities.

In these polarized times, helping your community understand news bias and identify reliable sources is more critical—and perhaps more difficult—than ever.
The American Association for the Advancement of Science (AAAS), founded by Thomas Edison and publisher of Science magazine, is fighting back against fake news.

- New program SciLine: “…independent, freely available service providing timely access to trustworthy, articulate experts for journalists and other communicators …..SciLine also offers accessible summaries explaining the methods and experimental evidence behind newsworthy scientific advances”
  https://www.sciline.org/our-mission/

- See also:
    http://science.sciencemag.org/content/359/6380/1094.full
Will we ever be able to always, positively, discern fact from fancy? Probably not!
A character in one of my favorite science fiction author’s books said:

“The soundest fact may fail or prevail in the style of its telling…."

_The Left Hand of Darkness_, by Ursula K. LeGuin, p.1(in most editions)

Nevertheless, as a STEM librarian and information professional, I believe we must try our best for truth ourselves and to aid the users of our resources and our social media friends to do so as well.