Welcome To
What We Talk About When We Talk About Bias

Library Instruction West 2018

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Cognitive Biases

- Bandwagon effect
- Bias blind spot
- Choice-supportive bias
- Congruence bias
- Contrast effect
- Focusing effect
- Framing
- Impact bias
- Information bias
- Loss aversion
- Neglect of probability
- Omission bias
- Planning fallacy
- Unacceptability bias
- Zero-risk bias

Et al. . . .
What do these biases have in common?
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We are often unaware of them
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They are influenced by culture and experience

We are often unaware of them

They can interfere with our ability to make objective, rational decisions
There are multiple dimensions of bias . . .

Bias in how information sources are constructed  
Bias in teaching practices  
Bias in how search tools function
Initial inspiration

System 1 thinking
• Intuitive
• Experiential
• Pattern recognition

System 2 thinking
• Analytical
• Deliberate
• Rational
Frames

These six frames are presented alphabetically and do not suggest a particular sequence in which they must be learned.

Authority Is Constructed and Contextual

Information resources reflect their creators’ expertise and credibility, and are evaluated based on the information need and the context in which the information will be used. Authority is constructed in that various communities may recognize different types of authority. It is contextual in that the information need may help to determine the level of authority required.
Dispositions

Learners who are developing their information literate abilities

- develop and maintain an open mind when encountering varied and sometimes conflicting perspectives;
- motivate themselves to find authoritative sources, recognizing that authority may be conferred or manifested in unexpected ways;
- develop awareness of the importance of assessing content with a skeptical stance and with a self-awareness of their own biases and worldview;
- question traditional notions of granting authority and recognize the value of diverse ideas and worldviews;
- are conscious that maintaining these attitudes and actions requires frequent self-evaluation.
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Why do cognitive biases matter within the context of information literacy instruction?
Session Outline

- **Introduction**: 1:00
- **Discussion of biases relevant to ILI**: 1:10
- **Ideas for Teaching Strategies**: 1:20
- **Think / Pair / Share Questions**: 1:30
- **Wrap-up**: 1:40
Learning Outcomes

• Attendees will gain a basic understanding of confirmation bias, anchoring bias and order effect bias as they relate to information literacy instruction.

• Attendees will consider a variety of different strategies relevant to information literacy instruction that have been designed to diminish these biases and will strategically think about how these can be incorporated into their own teaching practice.
I’ve chosen a rule that some sequences of three numbers obey — and some do not.

The sequence 2, 4, 8 obeys this rule.

What is the rule that I have in mind?
The answer:

Each number must be larger than the one before it.

We have a tendency to restrict the universe of possible questions to those that might potentially yield a “yes” and confirm our theory.

= confirmation bias
Conscious

Unconscious

Image credit: www.canadiangeographic.ca/
Confirmation Bias

Looking for what you expect versus what you do not expect

Pertains to how we search for information and how that information is evaluated
Information literacy and Confirmation Bias: You can lead a person to information, but can you make him think?

by Mark A. Allan

Abstract

Many librarians teach information literacy skills including how to identify “fake news” without seemingly incorporating information about the confirmation bias. Suggestions for incorporating this topic into various credibility and information literacy models are addressed, along with techniques that librarians can utilize or teach to their patrons to overcome this bias.
Anchoring Bias

Relying too heavily on the first piece of information offered when making decisions

Prevalent when people are dealing with new concepts
Do People Experience Cognitive Biases while Searching for Information?

Annie Y.S. Lau and Enrico W. Coiera, MBBS, PhD

Author information ▶ Article notes ▶ Copyright and License information ▶ Disclaimer
Order-Effect Bias

The temporal order in which information is presented affects our final judgment.

Can be subdivided into Primacy and Recency Effects.
Short Communication

First in, best dressed: The presence of order-effect bias in journal ranking surveys

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\textsuperscript{b} DeGroote School of Business, McMaster University, DSB #207, 1280 Main Street West, Hamilton, Ontario, Canada L8S 4M4

\begin{abstract}
The purpose of this study is to test for the presence of order-effect bias in journal ranking surveys. Data were obtained from 379 active knowledge management and intellectual capital researchers who rated 25 journals on a 7-point scale. Five different versions of the survey instrument were utilized. Consistent with the cognitive elaboration model, the satisfying theory, and the Grican maxim of orderliness, order-effect bias was observed in journal ranking surveys. Journals that appear in the beginning of the ranking list delivered to survey respondents consistently receive higher scores than journals at the end of the list. Overall, the position of the journal in the list explains over 10% of its score. Therefore, authors of journal ranking studies are recommended to use multiple versions of the survey instrument with randomized journal orders.
\end{abstract}
There’s a lot that exists outside of our awareness . . .
The Filter Bubble
How the New Personalized Web Is Changing What We Read and How We Think
Eli Pariser

"Well-timed... a powerful indictment."—The Wall Street Journal

"Vital."—Time.com
Teaching strategies relevant to addressing cognitive biases in information literacy instruction

01 Red Flag Monitoring

02 Consider the Opposite

03 Gamification

04 Assumptive vs. Non-assumptive Search Queries

05 Disfluency

06 Debiasing Search Interfaces
Red Flag Monitoring

Strategies for monitoring one’s thought processes

3 column reading logs / research journals

Research Reading Log

Source Citation in APA format:


<table>
<thead>
<tr>
<th>Page #</th>
<th>What the text says</th>
<th>What’s going on in my head (This reminds me of... I think this means... I’m surprised to learn... I can picture...)</th>
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http://libguides.pierce.ctc.edu/content.php?pid=694804&sid=5765758
Consider the Opposite

Considering plausible alternatives

Supports a questioning, critical disposition in the evaluation of information sources

Image credit: https://whitehatcrew.com/blog/laws-of-marketing-consider-the-opposite/
Gamification

Teaching confirmation bias, anchoring bias, bias blind spot et al.

Identifying the presence of bias in different scenarios via argumentation and voting.

Image credit: A Game Based Approach to Teaching Cognitive Biases (Richey, 2013)
Assumptive vs. Non-Assumptive Search Queries

We have a tendency to formulate search queries in a way that triggers a predefined answer.

Non-assumptive queries can lead to a change in belief via more comprehensive consideration.

Consider

“study gluten intolerance” vs. “gluten intolerance cause and symptoms”
Disfluency

Visual clarity of text can unconsciously lead to re-evaluation of previously formed attitudes.

Can reduce confirmation bias via a higher degree of analytical processing of information.

Consider

*Comic Sans Italicized*

vs.

*Helvetica*
Debiasing Search Engines

Adding information sources to “for” / “neutral” / “against” categories

Reduced impact of some cognitive biases, improved decision outcomes -- users preferred debiasing interface

Image Credit: Can Cognitive Biases during Consumer Health Information Searches Be Reduced to Improve Decision Making? (Lau and Coiera, 2009)
A Brief Quiz

Pollev.com/calstatemb
Think / Pair / Share Questions

Are there ways in which you have already been explicitly addressing cognitive biases in your teaching?

Do you plan to implement any of the strategies described today in your own teaching? If so, what might be some challenges in doing so?

Do you have any ideas for additional teaching strategies?

What is a remaining question that you have? What further research is needed in this area of information literacy?
Think / Pair / Share

Write down responses to questions on handout

Share those responses with 1 – 2 people sitting nearby

Share your thoughts with the larger group
THANK YOU

List of works cited: goo.gl/jJvbbH