

# **Week 2 Lecture - Research Sources**

Undergraduate Research Methods in Psychology

Quinton Quagliano, M.S., C.S.P

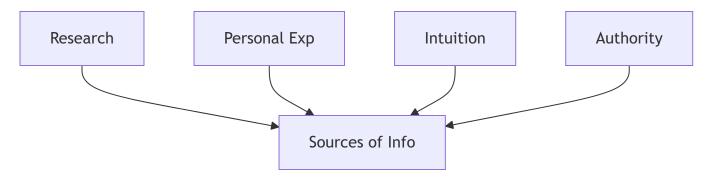
Department of Psychology

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#### 1 Overview

#### 1.1 Overview

- We can gain \_\_\_\_\_ from many origins; this is true of both scientific and common sources and:
  - Scientific Sources:
    - \* Journal
    - \* Books and edited books
    - \* Scientific
    - \* etc.
  - Common sources:
    - \* outlets (and lots of them!)
    - \* Newspapers
    - \* Think tanks (private "research")
    - \* "Well my friend said..."
- *But*, how do we these sources which ones are the "best" for drawing conclusions? (hint: research!)
  - Also, how do we read each of these more critically?
- · We'll compare 4 categories of sources:



## 2 Research vs. Personal Experience

#### 2.1 Overview

- Personal experience is simply the \_\_\_\_\_ that comes at us from every-day life.
- This is when we learn from the that occur to and around us.
- Example: I learn to walk carefully (like a penguin!) on ice because I have slipped in the past when walking normally. But does walking like a penguin actually work for

people to avoid slipping?

• We often rely on personal experience to make \_\_\_\_\_\_, but this does not always mean it is the most reliable source of information...

### 2.2 No Comparison

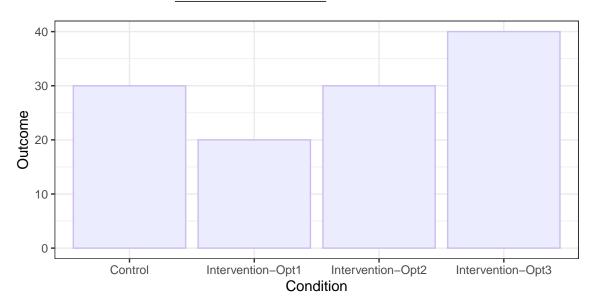
•	A <b>comparison group</b> is a key	between scientific research and
	personal experience. We must compare	our study results to some other benchmark,
	whether that is a	group (no intervention) or another type of
	intervention.	

• Without a comparison group we have three outcomes:

- Our effect is \_\_\_\_\_ than control (no intervention) or other interventions

Our effect is to control or other interventions

Our effect is than control or other interventions



• **Example:** A researcher performs a social intervention to reduce feeling of hostility towards an "out-group". It seems like the participants don't harbor any major negative feelings towards the out-group at the end of the study. A success!? Maybe...

- Why are the parisons are possible? (potentially) wrong here? What other comparisons are possible?

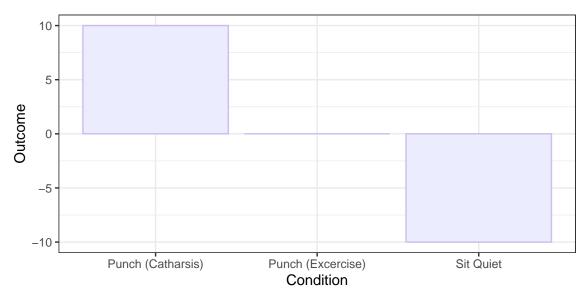
You may have some belief about the \_\_\_\_\_ of an intervention (from personal experience), but you won't have good \_\_\_\_\_ of its "real" effect, without a comparison group.

#### 2.3 Experience is Confounding

- Why did something happen? \_\_\_\_ make it difficult to determine causation in our personal experiences. Confounds are variables that may change how or why something happens.
- Example: A professor addresses you in a disappointed tone on the first day of class. You assume it is due to them just disliking students.
  - Why are the \_\_\_\_\_ (potentially) wrong here? What other explanations are possible?
- Because of confounds, there may be these
  - The professor had a rough day at home and it taking it out on students (unfairly)
  - You forgot your first assignment, and were late
  - The professor has mistaken you for a different student
  - Any number of other possibilities!
- In our own lives it is difficult to impossible to isolate individual causes for certain outcomes, but in research, we have \_\_\_\_\_\_ and statistical controls for confounds

#### 2.4 Research > Experience

- In research settings, we can better control for the \_\_\_\_\_ of confounds, and create comparison groups
- **Example:** Bushman's study (catharsis theory)



Another tale of why scientific process >

## 2.5 Probability in Research

<ul> <li>Individual differences are</li> </ul>	in theories! There are exception-
s/edge cases to all hypotl account for all possible so	heses and, as we mentioned in the last lecture, we cannot cenarios with a single
Research is always	which means it try to capture the majority
of experiences or the net	•
	ur experiences may contradict the of
evidence in the rese the research consen	arch body - but that doesn't mean that your experience or issus is "wrong"
<ul> <li>Connect to your previous in turn, are essentially a</li> </ul>	statistics class: conclusions are based on p-values, which, of a certain outcome.
resent a unique case tha	ally invalidate a theory or hypothesis. Instead, it may reput differs in some way than the others. We must research understand why!
•	ctor understands that a blood pressure drug works for ividuals with hypertension - but one of their patients isn't
responding to it.	
3 Research vs. Intu	uition
	uition
3 Research vs. Intu 3.1 Bias in Intuition	uition
	is often like a "hunch" or a "gut feeling". We may
<ul> <li>3.1 Bias in Intuition</li> <li>Recall that describe intuition as being</li> <li>Unfortunately, our intuition</li> </ul>	is often like a "hunch" or a "gut feeling". We may
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<ul> <li>3.1 Bias in Intuition</li> <li>Recall that describe intuition as being</li> <li>Unfortunately, our intuition in how we think</li> <li>3.1.1 Convincing Narratives</li> <li>Have you ever met some</li> </ul>	is often like a "hunch" or a "gut feeling". We may g "pre-scientific." may be swayed by certain sources of
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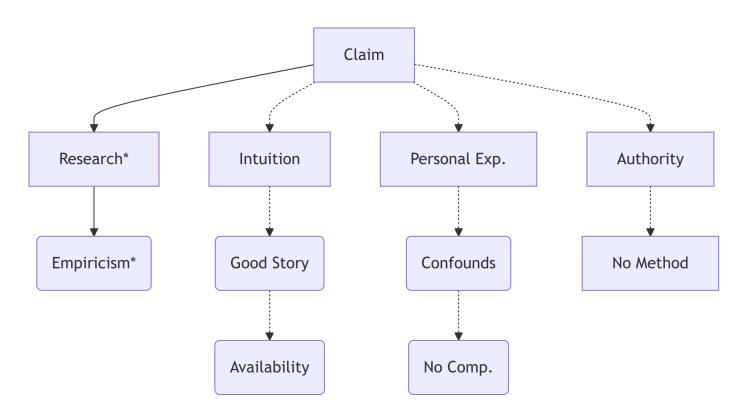
<ul> <li>This is a sort of "just-makes-sense" the naturally, it just</li> </ul>	ought process, where we think - "well, at way"
<ul> <li>However, this intuition can be an incorrect _ us from fully exploring whether things are act</li> </ul>	and may prevent and may prevent and may prevent
• Example: "Scared straight" program for scari	ng kids out of certain lifestyles
3.1.2 Availability Heuristic	
• Example: Anyone afraid of shark attacks in the	ne ocean?
<ul> <li>You may think that they happen often,</li> <li>But because of p idea of shark attacks is much more readily av</li> </ul>	opular media and news hype, the
A heuristic is just a cognitive     of thinking to come to conclusion. However, i cycle, it threatens to obscure what is actually	
This heuristic often causes over- or under- est	timations of certain situations occurring
3.1.3 Present/Present Bias	
<ul> <li>The present/present bias may be best und account for groups (see a possible outcome, do well as a possible outcome).</li> </ul>	e No Comparison)
• Example: Remember Harlow's monkeys' thir	d option
<ul> <li>Additional Example: I ran in sneakers A and n what about sneakers B?</li> </ul>	ny run was great because of them! But
<ul> <li>This may also be understood as also reflect certain (critical) events, but not others</li> </ul>	cting a to recall
3.1.4 Confirmation Bias	
<ul> <li>This is our tendency to selectively praising, criticizing, and noticing ir</li> <li>Especially relevant to situations like polit tion to protect "their"</li> </ul>	

<ul> <li>This often causes lead to a single conclusion: "I'm right"</li> <li>Example: <ul> <li>Google search: "Evidence that the</li> <li>"Evidence of the earth's shape"</li> </ul> </li> </ul>	bias in evidence-gathering and is likely to
3.1.5 Bias Blind Spot	
<ul> <li>Recall those last few examples of bias? to those same fallacies as anyone else.</li> </ul>	are just as susceptible
<ul> <li>It pays dividends to be when our intuition, experiences, and even</li> </ul>	and curious towards possibilities, even en research may say otherwise.
<ul> <li>Especially as scientists, there is a resistant to bias, we aren't</li> <li>Want to eliminate bias? Prove it wi</li> </ul>	to believe <i>we</i> are uniquely th sound science, methods, and reporting
3.2 Intuitive Thinking vs Scientific	(Empirical) Thinking
Taken together, there are lots of ways th	at intuition and expe-
	- <b>I</b>
rience can let us down in the general co	·
_	·
<ul> <li>In science, we are interested in using and writing, as to capture the overall (remember, science is probabilistic)</li> <li>Simply "conducting research" does not</li> </ul>	nclusions we empirical principals to guide our thinking
<ul> <li>In science, we are interested in using and writing, as to capture the overall (remember, science is probabilistic)</li> <li>Simply "conducting research" does not - we must be keenly mindful of the risks of</li> </ul>	nclusions we in data and phenomena protect us from biases
<ul> <li>In science, we are interested in using and writing, as to capture the overall (remember, science is probabilistic)</li> <li>Simply "conducting research" does not - we must be keenly mindful of the risks owith literature reviews</li> </ul>	empirical principals to guide our thinking in data and phenomena protect us from biases in biases in our research processes, starting
<ul> <li>In science, we are interested in using and writing, as to capture the overall (remember, science is probabilistic)</li> <li>Simply "conducting research" does not - we must be keenly mindful of the risks with literature reviews</li> <li>Research vs. Authority</li> <li>Faults in Appealing to Authority</li> </ul>	empirical principals to guide our thinking in data and phenomena protect us from biases in biases in our research processes, starting authorities throughout our lives: parents,

- Why do we trust journal articles? It isn't just because the researchers are simply

   , but rather, that the peer-review process is well set up to
   prevent poor science from slipping through
- Therefore, we must \_\_\_\_\_\_ the method by which a person comes to a conclusion, rather than basing our opinion of the person. This is the purpose of written articles, to interrogate the how, rather than the who

#### 4.2 Flow Chart of Claims



## 5 Examining Research Sources

## **5.1** Types of Articles

• Original Empirical Journal Articles: Some form of study in which a scientific process and analysis were conducted. These are often some type of novel observation or . Usually contains some form of introduction, methods, results, and discussion.

• Literature Review Journal Articles: A comprehensive literature review that, synthesizes, and compounds the many available empirical
studies in a specific research area. Often, comes across as an extended introduction section.
- Also, a great starting point when doing a literature review for your own!
Meta-analysis: An extension of a literature review articles that calculates a effect size from the surveyed research studies. A more
quantitative version of a classic literature review.
5.2 Types Books
• Scientific Books: a full-length scientific book written by the same single or multiple authors throughout. Focuses on a single, and functions as a sort of extended literature review.
• Edited Books: a collaborative effort in which many experts compose on specific topics. These are usually not peer-reviewed to
the same extent as journal articles - but the authors are usually some of the most respected researchers in an area. Be careful of appeals to because of this!  - These are popular among applied practitioners of psychology (
), because it allows them to keep up with developments and ideas in a nice range of areas.
5.3 Finding & Reading Research
• We will cover this in a separate workshop/presentation! This is a critical skill to develop as an early researcher, and is fairly complicated.
<ul> <li>We will also cover how to determine the sections of articles, and what questions you should ask of yourself in each section.</li> </ul>
5.4 Scientific Journalism's Role
Empirical articles will always be the way to gain scientific knowledge. Edited books, literature reviews, meta-analyses, etc. may all be good sources as well.

