

Psychology and Scientific Inquiry

Day 2: Methods and
Problems of Experimentation



Because people and rats aren't the same... usually

Objectives

- Understand 3 common **Barriers to Scientific Inquiry in Psychology**
- Compare the 3 **Primary Methods** of studying Behavior
 - Identify *advantages* and *disadvantages* to each Method
- **Terms:**
 - **Intuition**
 - **Personal Bias**
 - **Hindsight Bias**
 - **Critical Thinking**
 - **Case Study**
 - **Survey**
 - **Naturalistic Observation**
 - **Random Sampling**



Remind Me...

- What are the 3 Elements Psychology must have? (*What is it?*)
- What are the steps to Scientific Inquiry?
- What do those steps help us answer questions about?



Today we talk more about HOW we can get answers, as well as, perhaps, some of the problems we see in Psychological Experimentation...

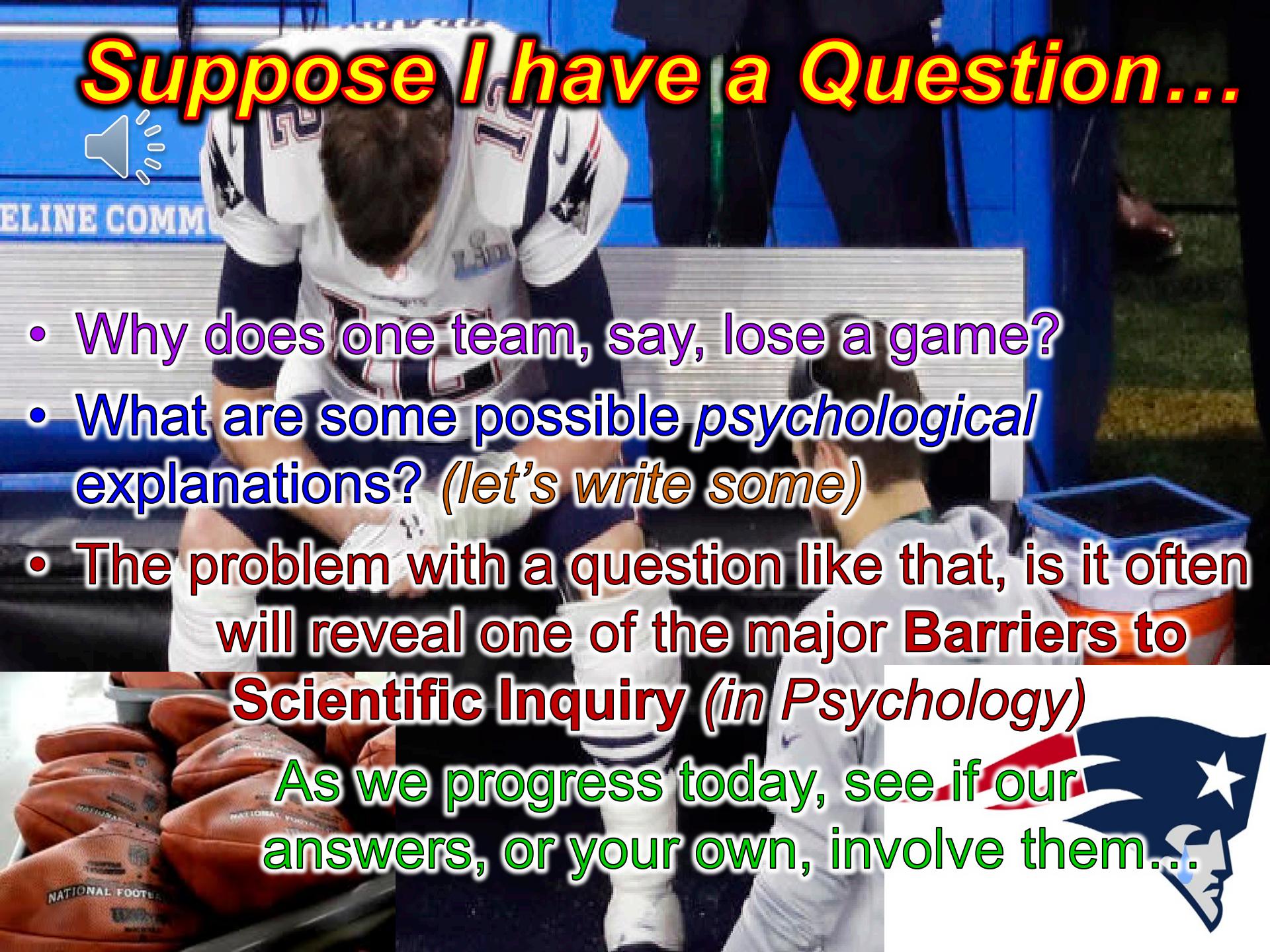
Suppose I have a Question...



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- Why does one team, say, lose a game?
- What are some possible *psychological* explanations? (let's write some)
- The problem with a question like that, is it often will reveal one of the major **Barriers to Scientific Inquiry (in Psychology)**

As we progress today, see if our answers, or your own, involve them...



3 Barriers to Inquiry

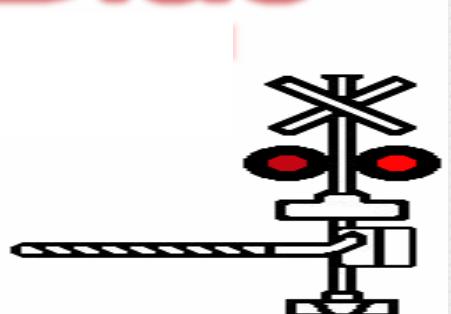
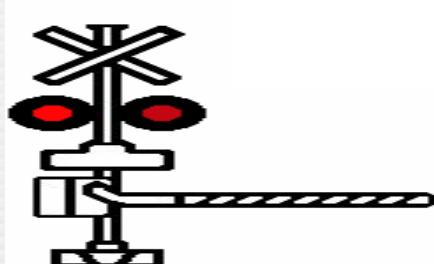


- 1) Intuition



- 2) Personal Bias

- 3) Hindsight Bias



1. *Intuition*

- Having direct knowledge or insight without observation or reason
- *Some common phrases to describe this are:*
 - **Common Sense**
 - **Gut Feeling**
 - **“It just felt right”**
- **So what's wrong with this?**



**COMMON SENSE
IS LIKE DEODORANT.
THE PEOPLE WHO
NEED IT MOST
NEVER USE IT.**



2. Personal Bias

- A tendency to favor (or disfavor) a particular group, thing, or outcome
- *In other words, you WANT a certain result to be true, not true, etc.*
- *i.e. Stereotypes, pre-conceived notions, or just wanting your hypothesis to be true*
-  *We often call that a “self-fulfilling prophecy”*
- *What's wrong with that?*

• Quote From Man Stabbed

www.khq.com

"What are you gonna do, stab me?"

KHL 
HD • 11:01 67°

3. HINDSIGHT BIAS

- After learning an outcome, believing you could have predicted it
- *The “I-knew-it-all-along” phenomenon*
- *They say “hindsight is 20/20”*
- *Of COURSE it makes sense afterwards...*



Remember, we often DO make the best decision we can AT THE TIME...

What's wrong with this?

3 Barriers to Inquiry

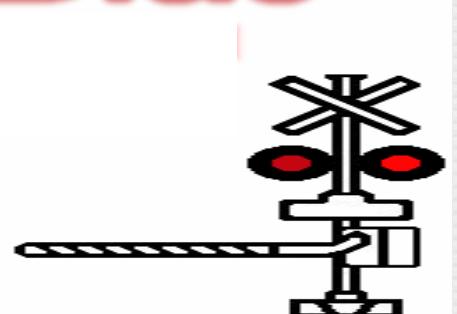
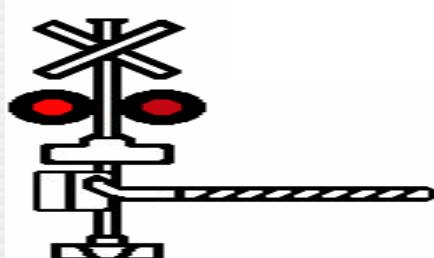


- 1) Intuition



- 2) Personal Bias

- 3) Hindsight Bias



So, I know to avoid them...

- Instead a good Psychologist uses...
- **Critical thinking**
 - Examines assumptions, evaluates evidence and assesses conclusions.
- Does not accept arguments and conclusions blindly.
Sounds like many Cadets I know...



So, I think critically...

- **But how DO I conduct a Psychological Scientific-Inquiry-Based Experiment?**
- **I'm glad you asked!**
- **There are tons of great methods, but most, in terms of studying behavior, fall under three categories...**





3 Primary Methods of Studying Behavior

- 1) Case Study
- 2) Survey
- 3) Naturalistic
Observation



1) Case Study

- Technique where **one person** is studied in depth to reveal **underlying behavioral principles**
 - *i.e. We study Major Wright to gain insight into the mind, life, and trials of a Major.*

What is GOOD about that?

What is BAD about that?



2) Survey

- Technique for **self-reported attitudes, opinions, and behaviors**
- *i.e. We have everyone in class answer a questionnaire about school lunch*

-



3) Naturalistic Observation

- Technique for **observing behaviors of groups in the “wild”** (*natural environment*)
 - Usually without participants knowing
 - *i.e. We hide in the lunchroom and observe behaviors... or use a hidden camera*
- What is GOOD about that?*
- What is BAD about that?*





- **Regardless of which method you use, you still need to determine HOW to decide your subject. The generally accepted “best” method in Psychology is random sampling**
 - **Each member of a Population has equal chance of being included in the sample**



What does that mean?

Why is that important?

In Conclusion...

- HOW we conduct an experiment in Psychology is often as important as WHAT the experiment is!
- Why?
- Thus, next week we will discuss how we look at, interpret, and use the “data”...



But on Friday,
OBSERVATIONS!

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