



2019 SPSP CONVENTION

== FEBRUARY 7-9 ==



# Survey & Experimental Evidence of Cognitive Biases in Psychologists' Judgments

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Presentation Content  
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# Expectations of Experts

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**The  
Objectivity  
Demand**

Professional ethics  
codes and the  
ethos of science

The legal system  
assumes objective  
experts

# Are Experts Objective?

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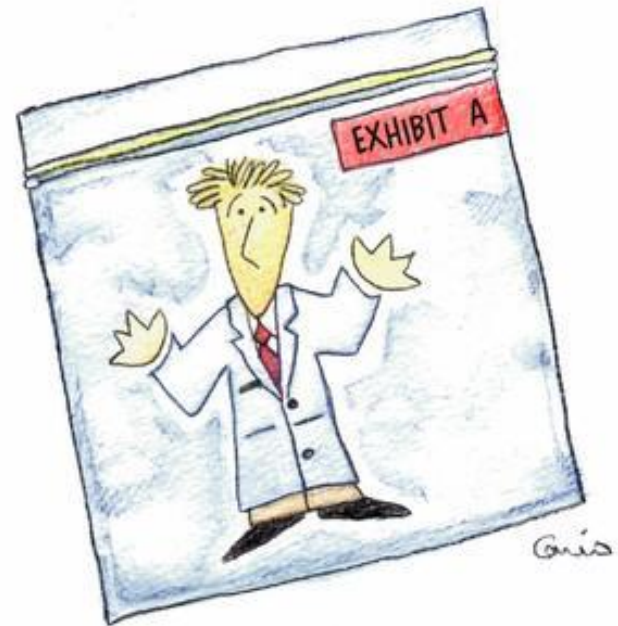
Are experts  
susceptible to  
cognitive biases?

- Are experts susceptible to cognitive biases (by virtue of being human), or are they protected against them (by virtue of expert training)?
- Lots of speculation, little experimental data

# Forensic Mental Health

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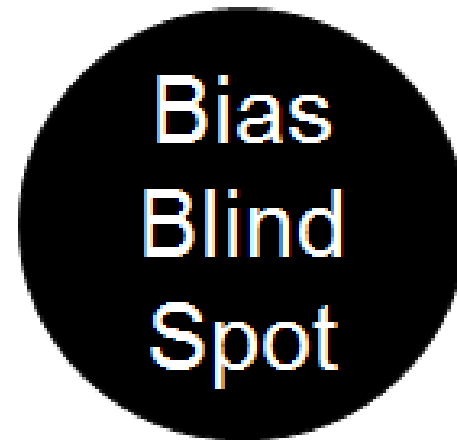
- Mental health professionals often asked to evaluate people to help the court adjudicate cases
- E.g., competency, mental state at time of offense, child custody, aid in sentencing, disability, civil commitment



# Study 1 – Survey Aims

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- Do forensic psychologists show evidence of the Bias Blind Spot?
- To what degree will these experts endorse new procedures that could mitigate any bias in their work?
- Will they perceive bias mitigation procedures as threatening?



**Tendency to recognize bias  
in others but fail to  
recognize it in oneself**

Pronin, Lin, & Ross, 2002

# Forensic Psychologist Survey (N=84)

Solicited participation  
in 3 CE workshops

Years of experience  
conducting forensic  
evaluations  $M = 9.71$   
( $SD = 9.49$ )



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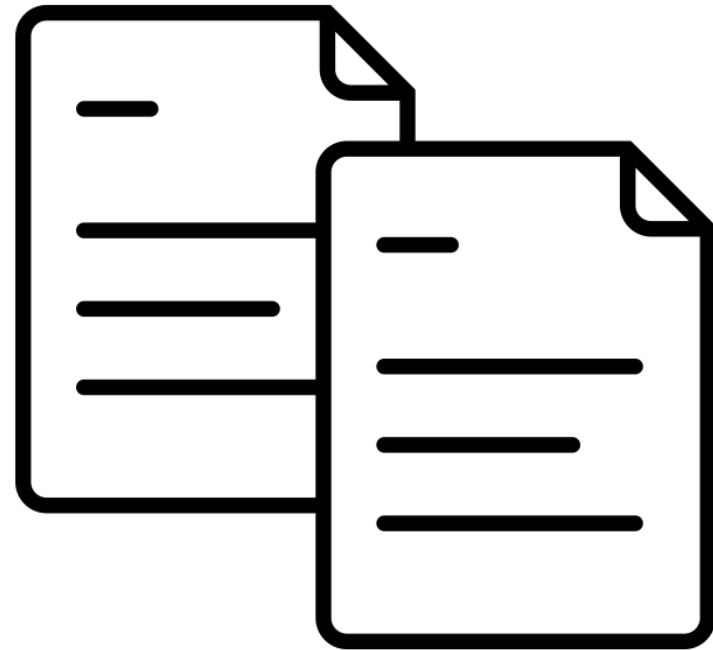


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# Survey

Questions about

- Perceptions of bias
- Bias Blind Spot
- Attitudes toward bias mitigation procedures

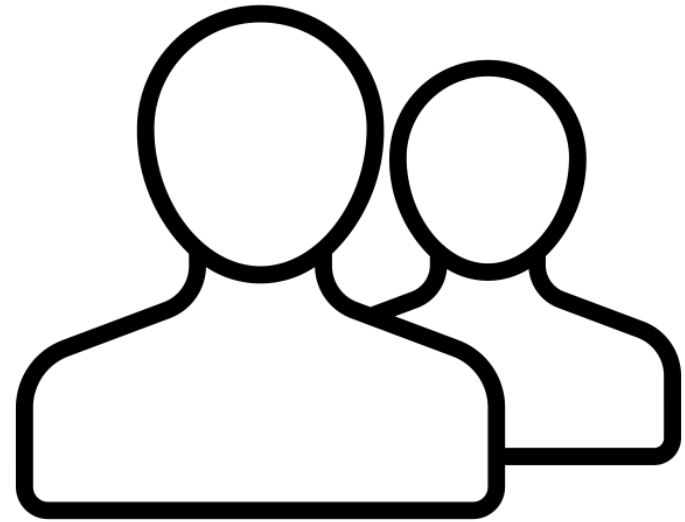


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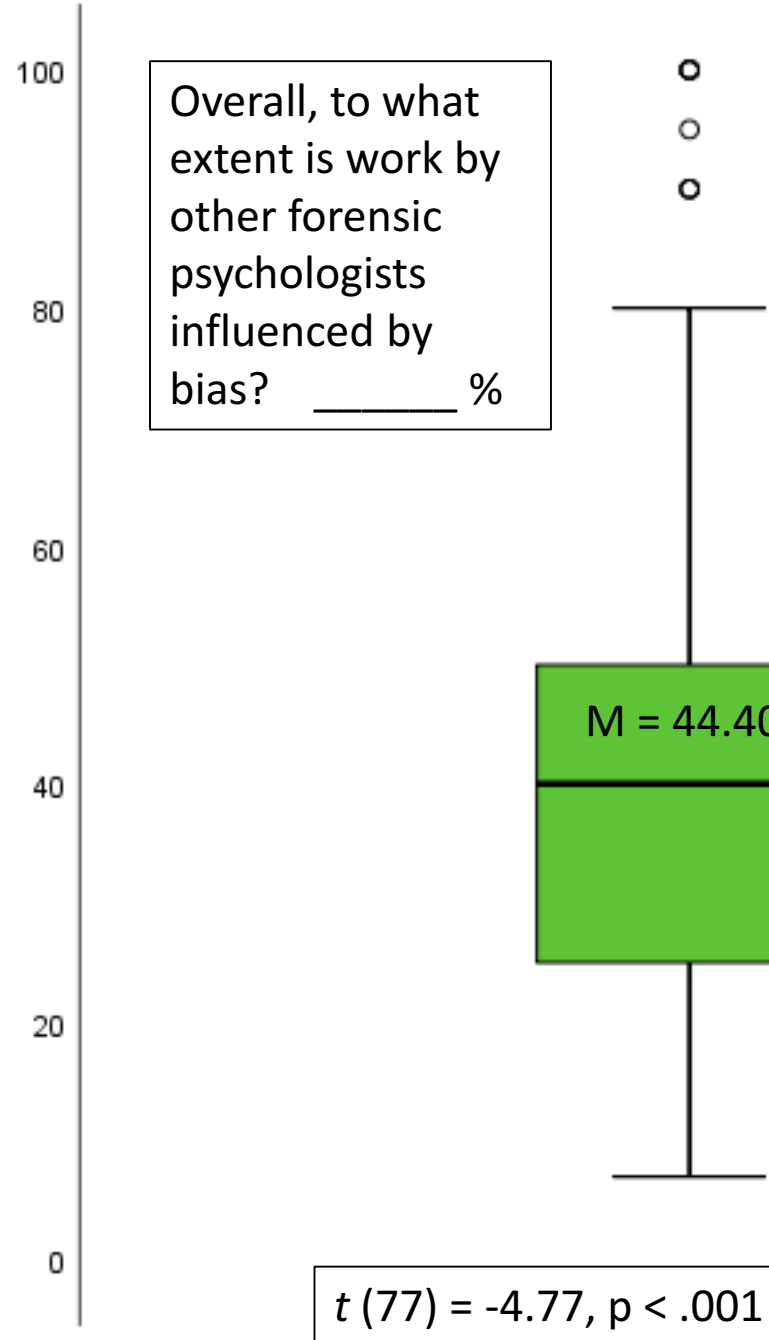
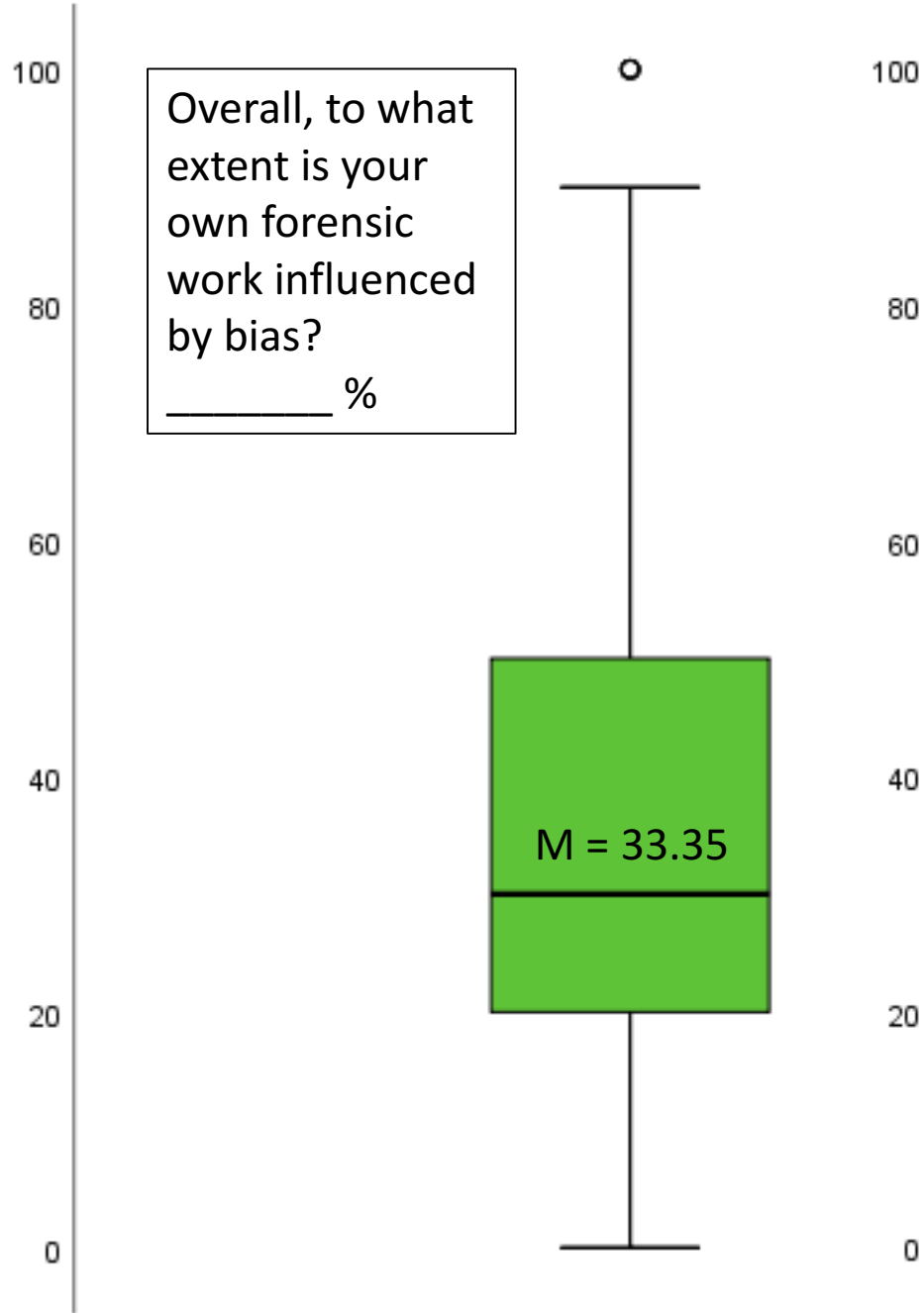
# Hypothesis 1

## “Bias Blind Spot”

Experts will rate their own susceptibility to bias in their professional work as lower than their colleagues.



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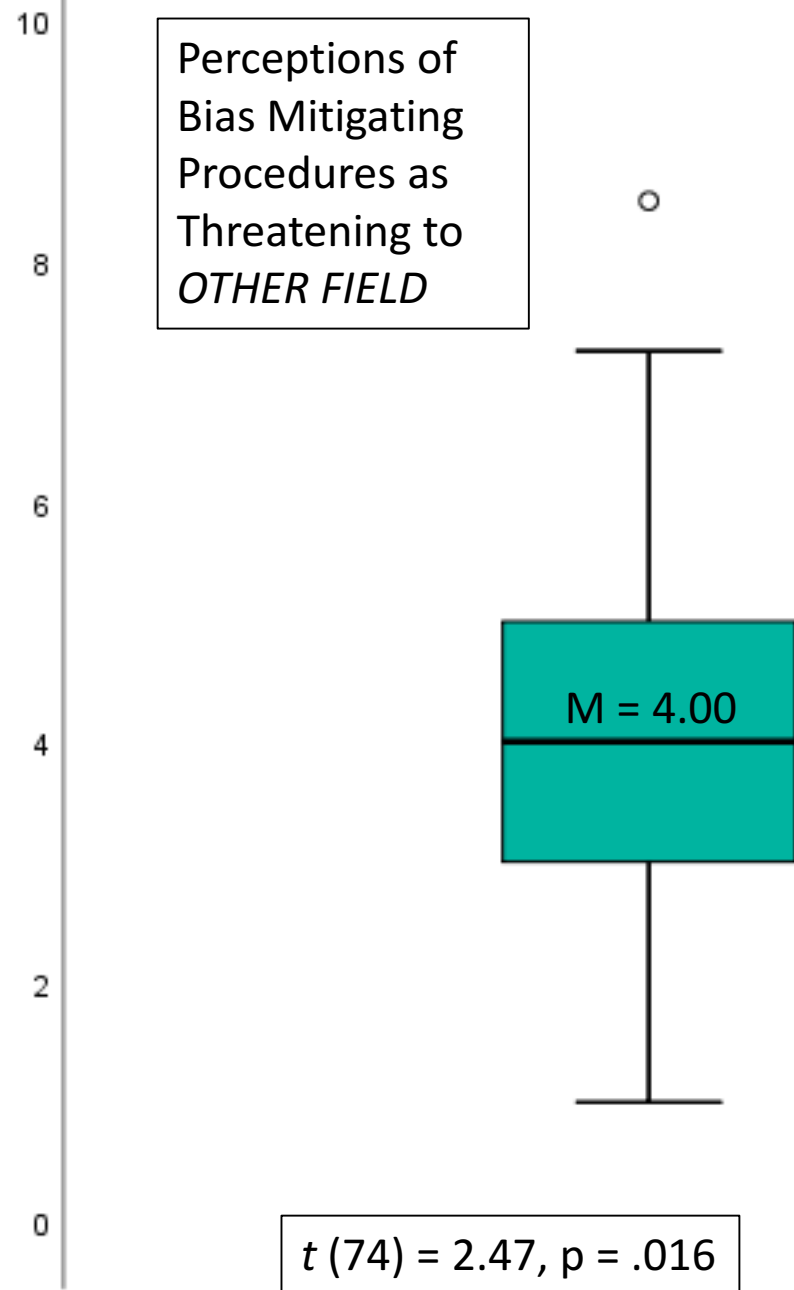
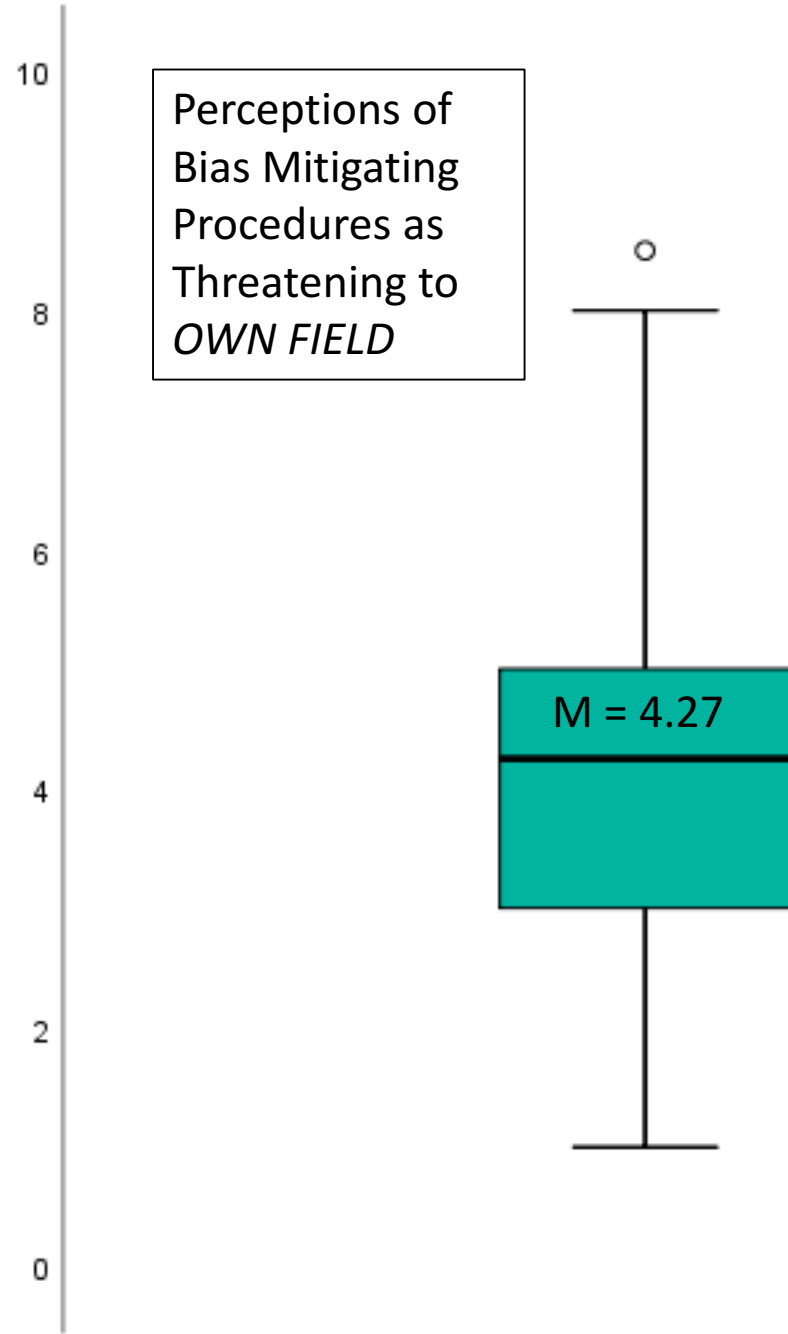
# Hypothesis 2

## Consequence of Bias Blind Spot

Experts will perceive bias mitigating procedures as more threatening to their own domain than an outside domain.



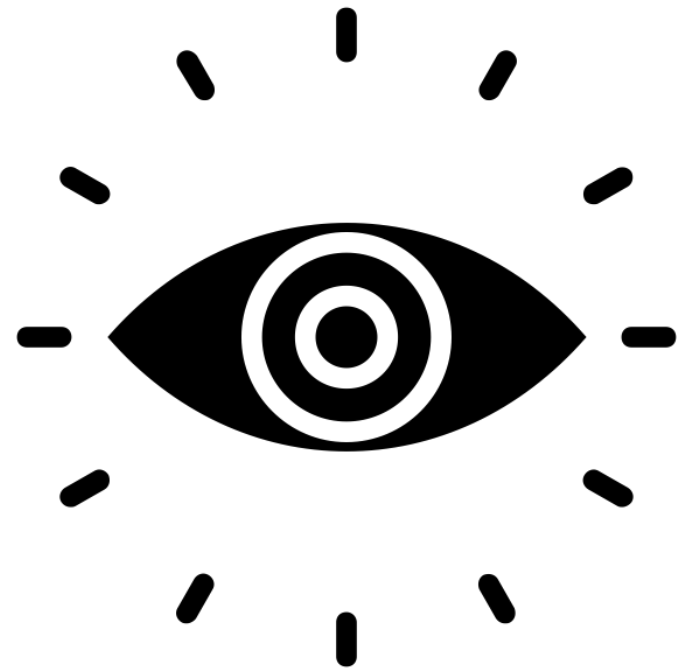
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# Hypothesis 3

Expertise will not protect against the bias blind spot or its consequences.

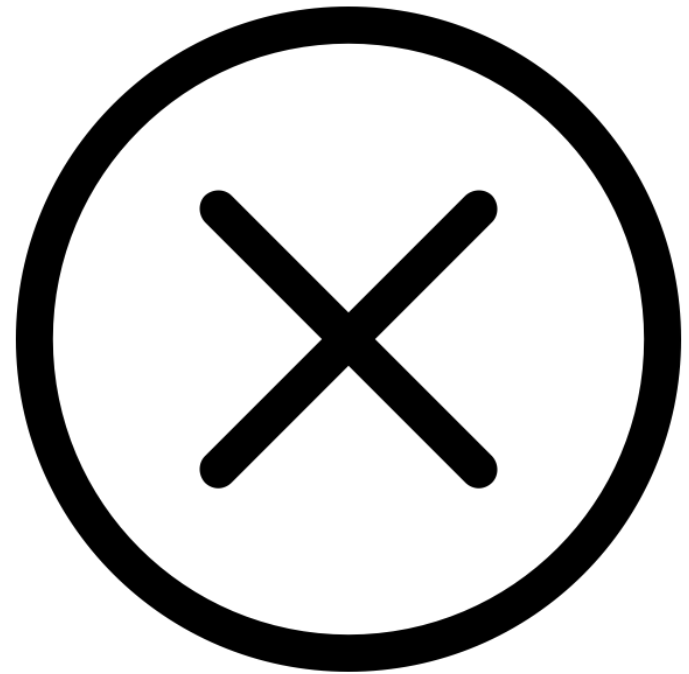
*Expertise might even exacerbate them.*



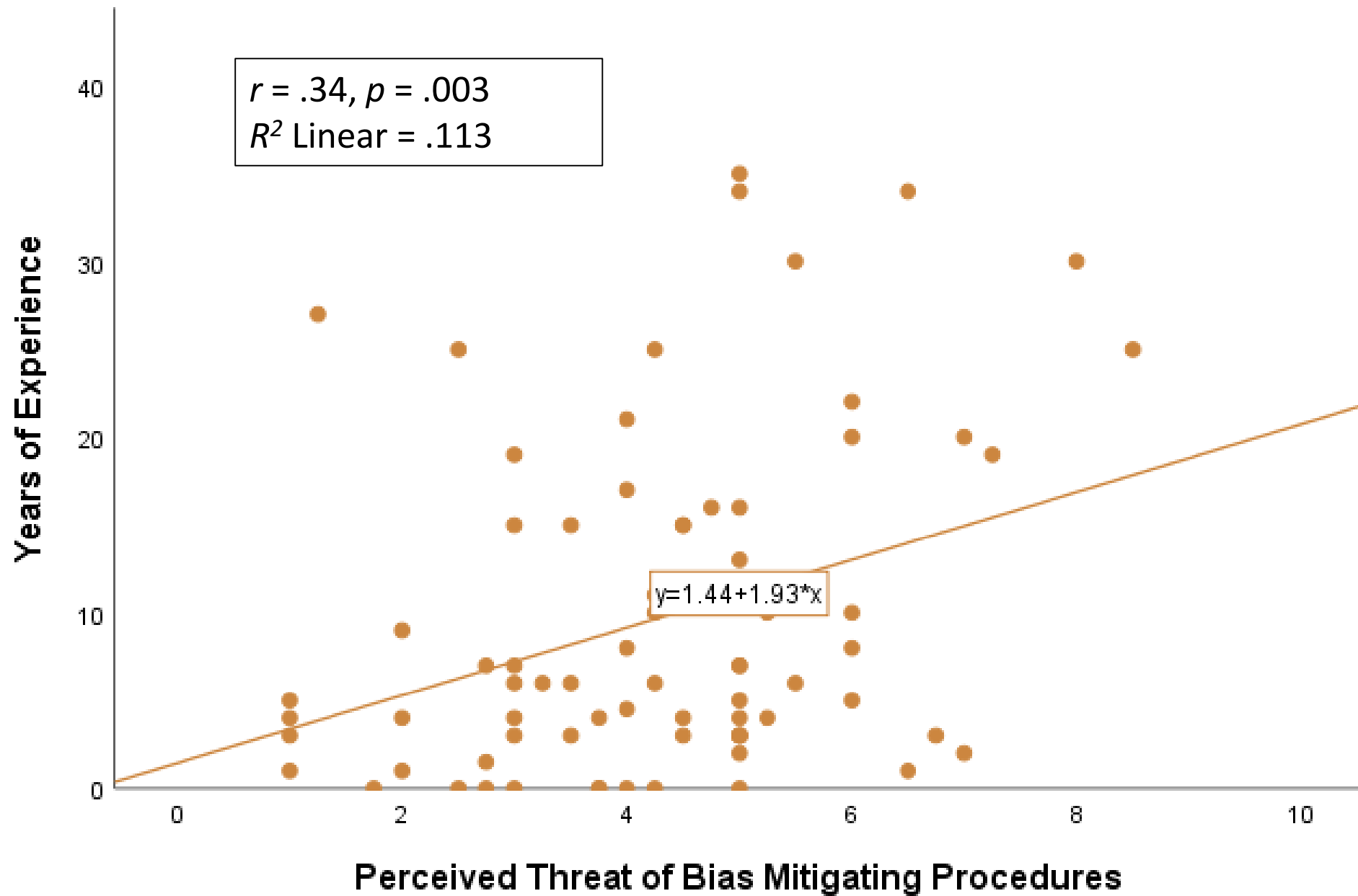
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# Hypothesis Partially Supported

- Years of experience  
NOT related to bias  
blind spot
- Board certification  
(n=5) & forensic  
fellowship (n=9) too  
small



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# Study 1 Discussion

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- Survey results suggest forensic mental health experts are susceptible to the bias blind spot and defensive about bias mitigation procedures
- But are they biased?

# Experimental Studies 2 & 3

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- Methodologically rigorous, novel empirical perspective
- Focused on confirmation bias & order effects

# Confirmation Bias

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- When people seek and rely on information that confirms their “hunch” rather than seeking potentially disconfirmatory information

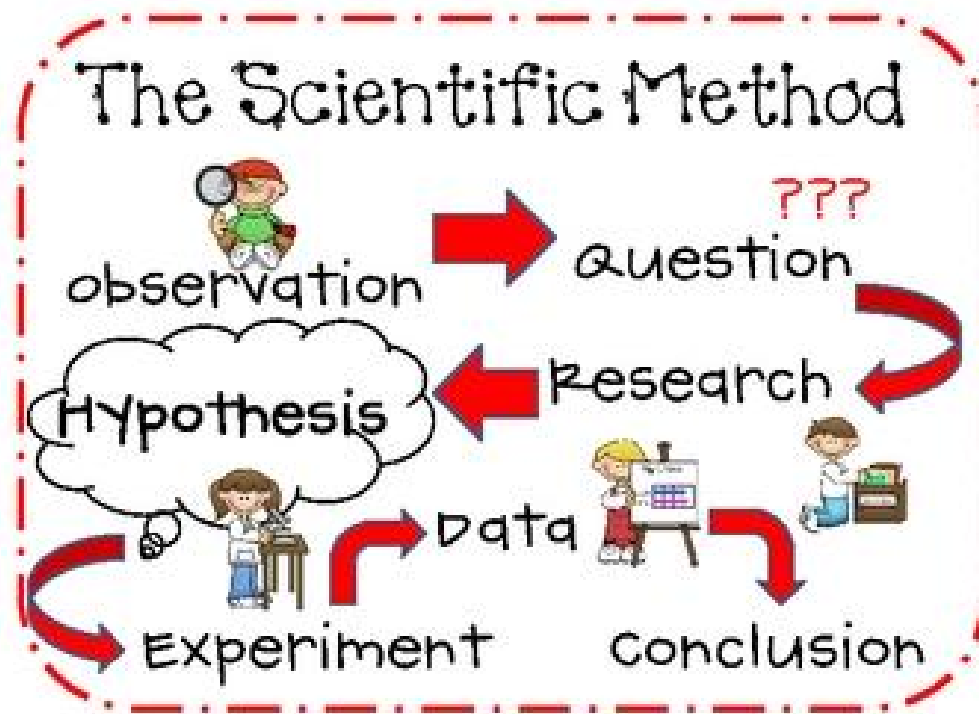
(see Nickerson, 1998)

# Order Effects

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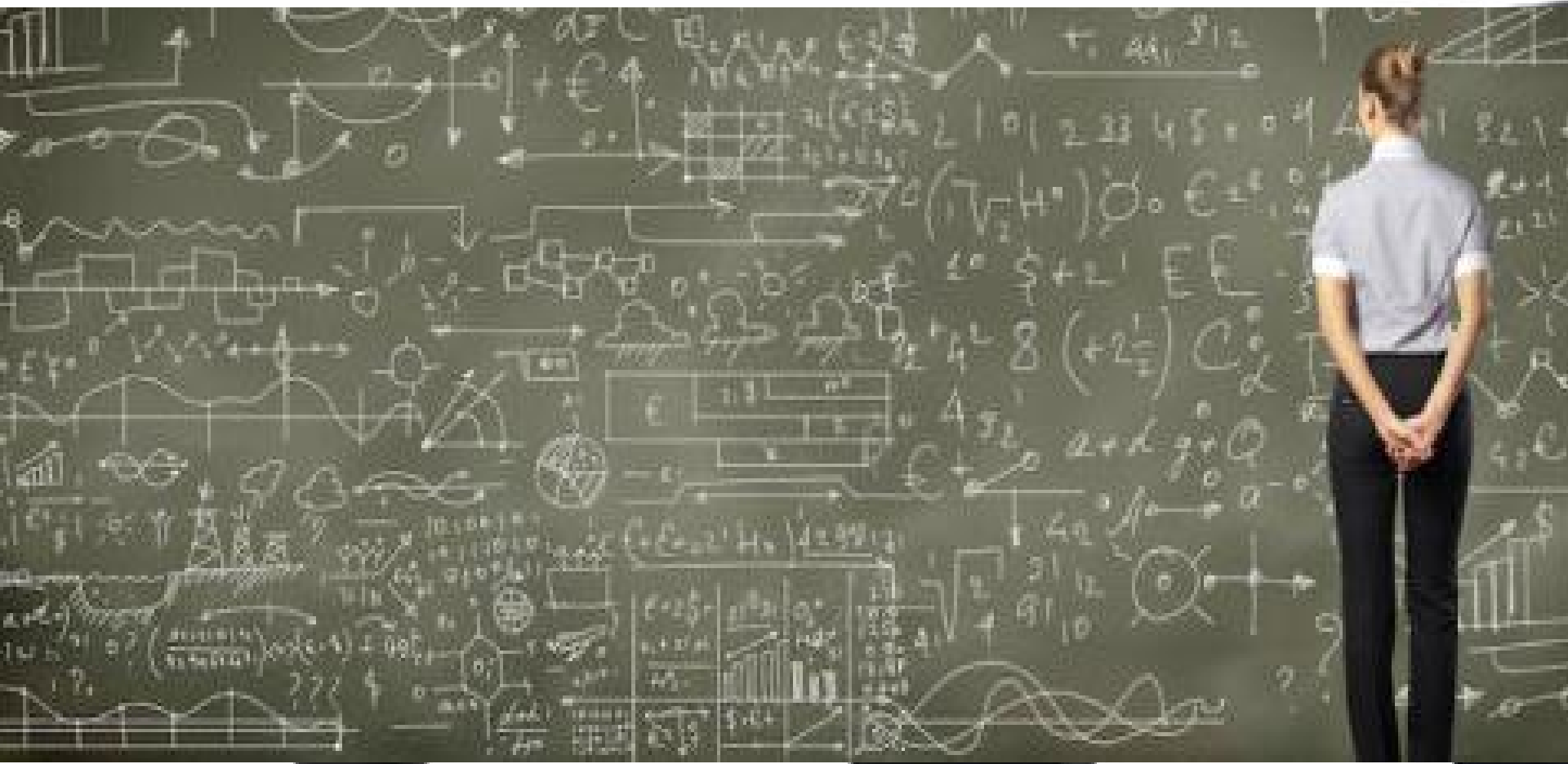
- The influence of the order of information encountered on final judgments

(Asch, 1946; Hogarth & Einhorn, 1992)



Evolved partly to rein in the power of confirmation bias and order effects.

(Popper, 1959)



(Cook & Smallman, 2008)



# Experimental Hypotheses

## Study 2

- H2.1: Forensic clinicians will engage in confirmation bias
- H2.2: Forensic clinicians' cognitive reflection tendencies will be inversely related to confirmation bias

CRT: Ability to reflect & resist the first heuristic response that comes to mind, and instead engage in deliberative thought to reach an answer. (Frederick, 2005)

## Study 3

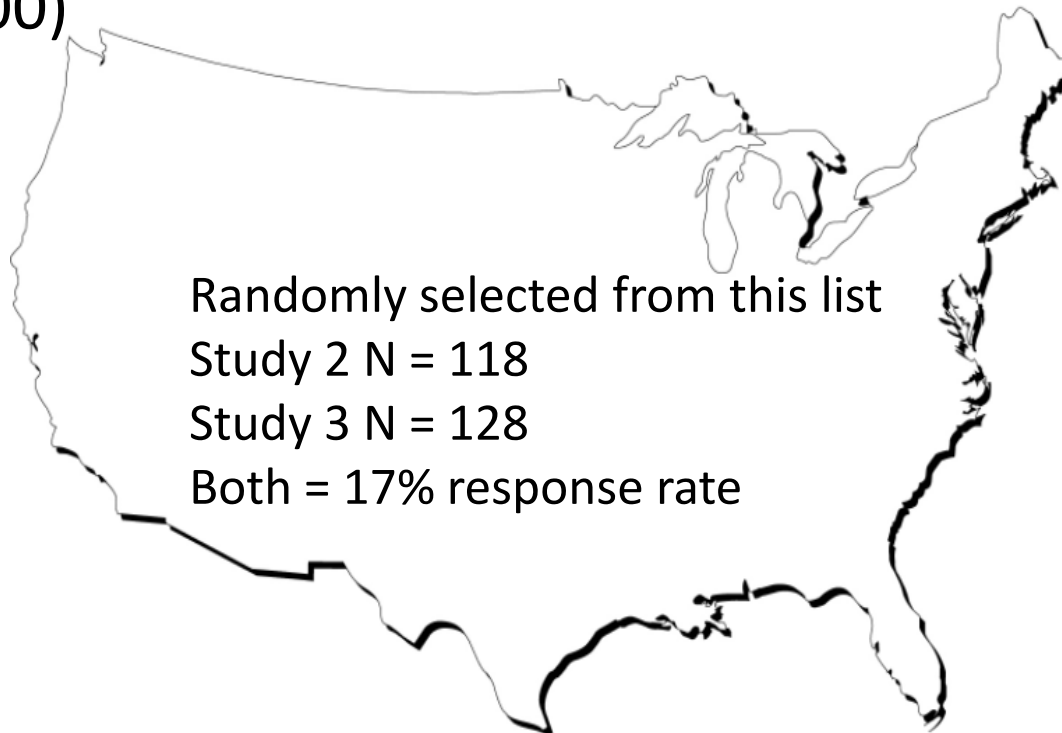
- H3.1: Forensic clinicians will continue to engage in confirmation bias even when given multiple opportunities to seek information
- H3.2: Forensic clinicians' diagnostic judgments will be systematically influenced by the order of information encountered

# Participants

## Representative Samples of U.S. Licensed Psychologists in Forensic Practice

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- Sampling procedure: compiled a “population” list of all licensed psychologists across the U.S. with forensic interests (N=2300)



# Study 2 Procedure

- Read a referral vignette (~300 words)
- 

R.G., a 20-year-old man, is being referred for a psychological evaluation to determine whether he meets criteria for a mental illness. He grew up in the Midwest U.S. with his older brother, and they were raised by their mother. Mr. G. has a 9<sup>th</sup>-grade education and has been working for a construction company for about a month. This company strives to give people a “second chance” by providing opportunities to people to make a good life. The court is referring him for this psychological evaluation due to concerns about his behaviors as they might influence plans for his sentence. The court wants to make sure Mr. G. gets help for his problems if he needs it, especially as they relate to reducing his risk for reoffending. Specifically, Mr. G. has a pattern of using alcohol and marijuana (and possibly other substances) at work that put himself and his co-workers at risk because he is responsible for operating heavy machinery. He is facing a recent Driving While under the Influence charge. Another behavior of concern is his irresponsibility with failure to fulfill his obligations – for example, he never held a job longer than the month he has been at his current job. He exhibits impulsivity in the things he says and does, he is frequently deceitful, and he does not seem to feel bad or ashamed about his behaviors. He has two previous convictions on his record – one for Possession of Drug Paraphernalia and one for Assault. In addition, he has a history of having a “short fuse” and difficulty getting along with co-workers. The court would like to receive information about whether Mr. G. meets diagnostic criteria for a mental illness, how that mental illness (if applicable) could be expected to affect his likelihood of recidivism and special considerations for sentencing, and whether he could benefit from treatment.

# Study 2 Procedure

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- Read a referral vignette
- Asked to provide diagnostic hypothesis

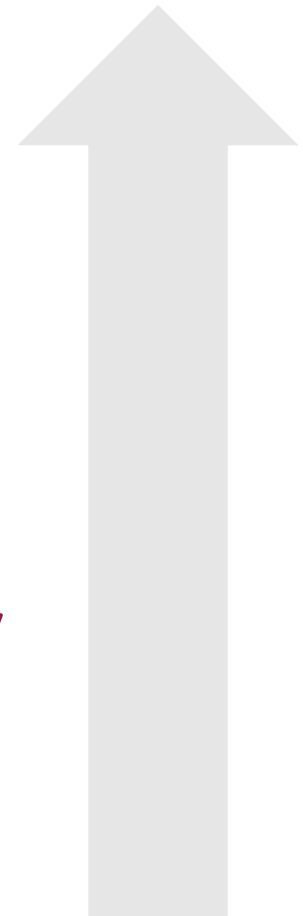
Based on the vignette above, please rank-order the following mental illnesses in order of likelihood that this person may meet DSM-5 diagnostic criteria for each. Please drag and drop them into the correct order, using the #1 spot for most likely and #4 spot for least likely.

- |                                   |   |
|-----------------------------------|---|
| • Antisocial Personality Disorder | 1 |
| • Dissociative Identity Disorder  | 2 |
| • Intellectual Disability         | 3 |
| • Alcohol Use Disorder            | 4 |

Now, based on your primary diagnostic hypothesis that Mr. G meets criteria for Antisocial Personality Disorder, what piece of information would you want first in order to effectively test your primary diagnostic hypothesis.

- ☐ Has Mr. G. shown a pervasive pattern of disregard for and violation of the rights of others since at least 15 years of age?

Confirmatory



Now, based on your primary diagnostic hypothesis that Mr. G meets criteria for Antisocial Personality Disorder, what piece of information would you want first in order to effectively test your primary diagnostic hypothesis.

- ☐ Does Mr. G. have a substance use disorder that could explain his symptoms?



Disconfirmatory

Now, based on your primary diagnostic hypothesis that Mr. G meets criteria for Alcohol Use Disorder, what piece of information would you want first in order to effectively test your primary diagnostic hypothesis.

- ☐ Does Mr. G have a personality disorder that could explain his symptoms?
- ☐ Does Mr. G show evidence of alcohol tolerance and withdrawal?



Confirmatory



Disconfirmatory

# Study 2 Results:

## Confirmation Bias (H2.1)

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- Forensic clinicians overwhelmingly engaged in confirmation bias:
  - 93% chose the confirmatory information
    - $\chi^2 (1) = 81.31, p < 0.001$



# Study 2 Results:

## Cognitive Reflection (H2.2)

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- Cognitive reflection had a statistically and theoretically significant association with confirmation bias.
  - Each unit higher on the 3-item CRT halved the odds of confirmatory bias
    - $B = -0.75$ ,  $\text{Wald}(1) = 3.85$ ,  $p = 0.050$ ,  $\text{Exp}(B) = 0.473$

# Lingering Question

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- Will confirmation bias persist?
  - If given multiple opportunities, will experts start seeking more disconfirmatory information?

# Study 3: Mixed Design

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- Within subjects element:  
3 Information seeking opportunities



Rank-Order a list of 4 possible initial diagnostic hypotheses



Respond to 3 follow-up questions linked to their #1 rank

(Each a choice for further information to effectively test their hypothesis)

- ☐ Confirmatory
- ☐ Disconfirmatory

# Study 3: Mixed Design

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Between subjects element: Symptom Order

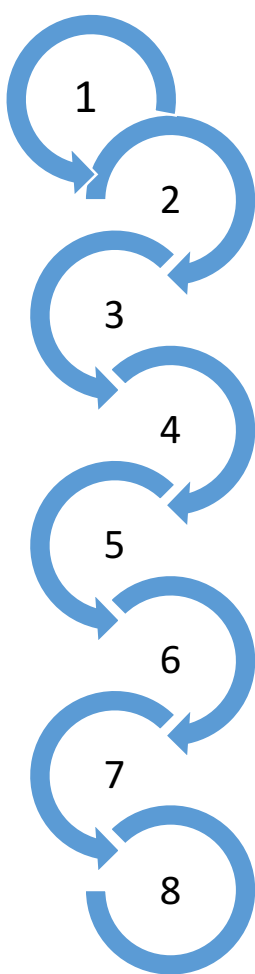
## Randomly-Assigned Order Condition

Symptom Order 1

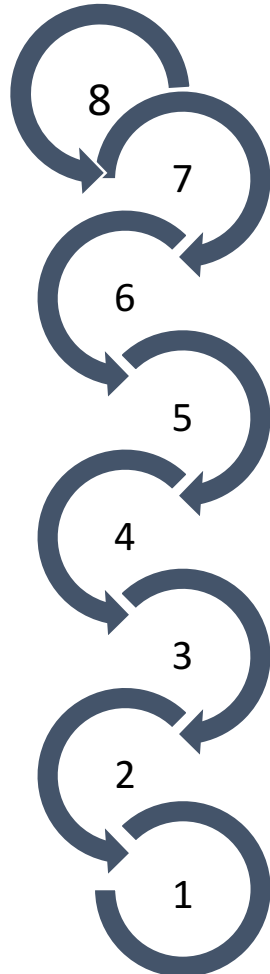
Symptom Order 2

# Order of Information Conditions

**Symptom Order 1**  
**Antisocial Personality Disorder First**



**Symptom Order 2**  
**Alcohol Use Disorder First**

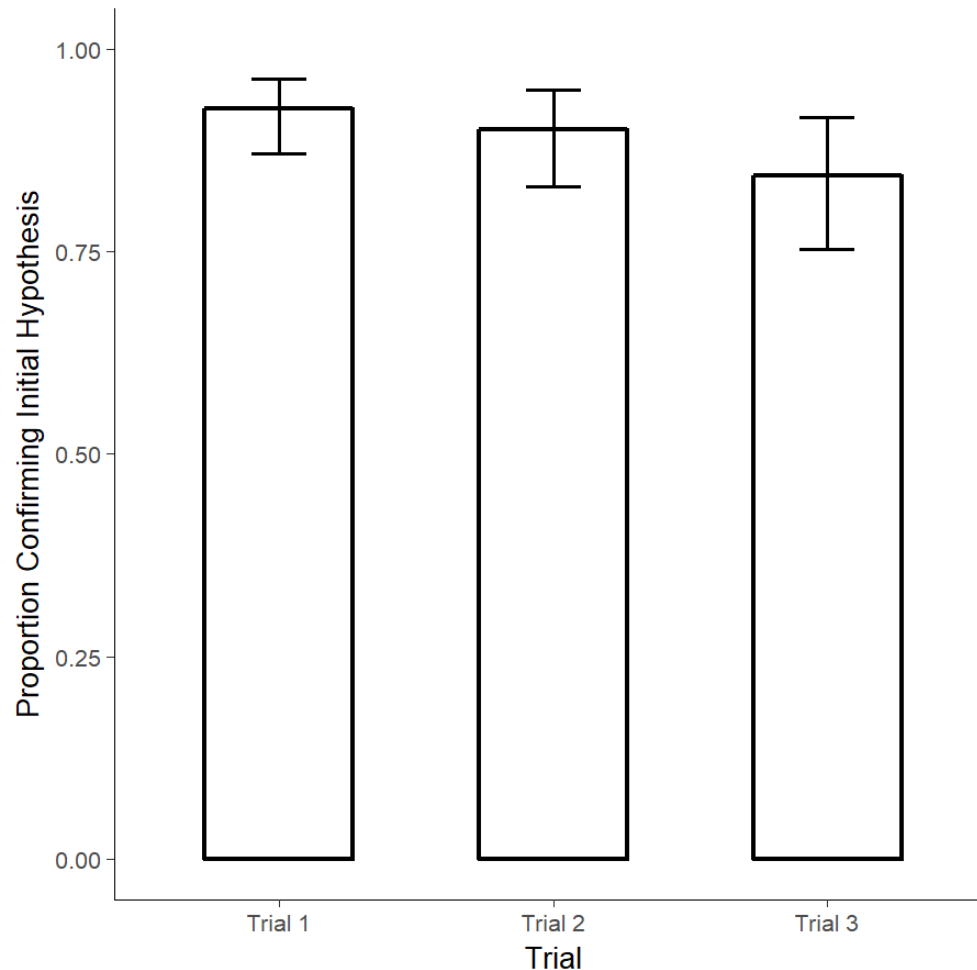


- 1) History of having a “short fuse” and difficulty getting along with co-workers
- 2) Two previous convictions, one for Possession of Drug Paraphernalia and one for Simple Assault
- 3) Irresponsibility with failure to fulfill obligations
- 4) Frequently deceitful
- 5) Does not seem to feel bad or ashamed about his behaviors
- 6) Exhibits impulsivity in the things he says and does
- 7) Recently charged with Driving While Under the Influence
- 8) A pattern of heavy daily use of alcohol and marijuana

# Study 3 Results: (H3.1)

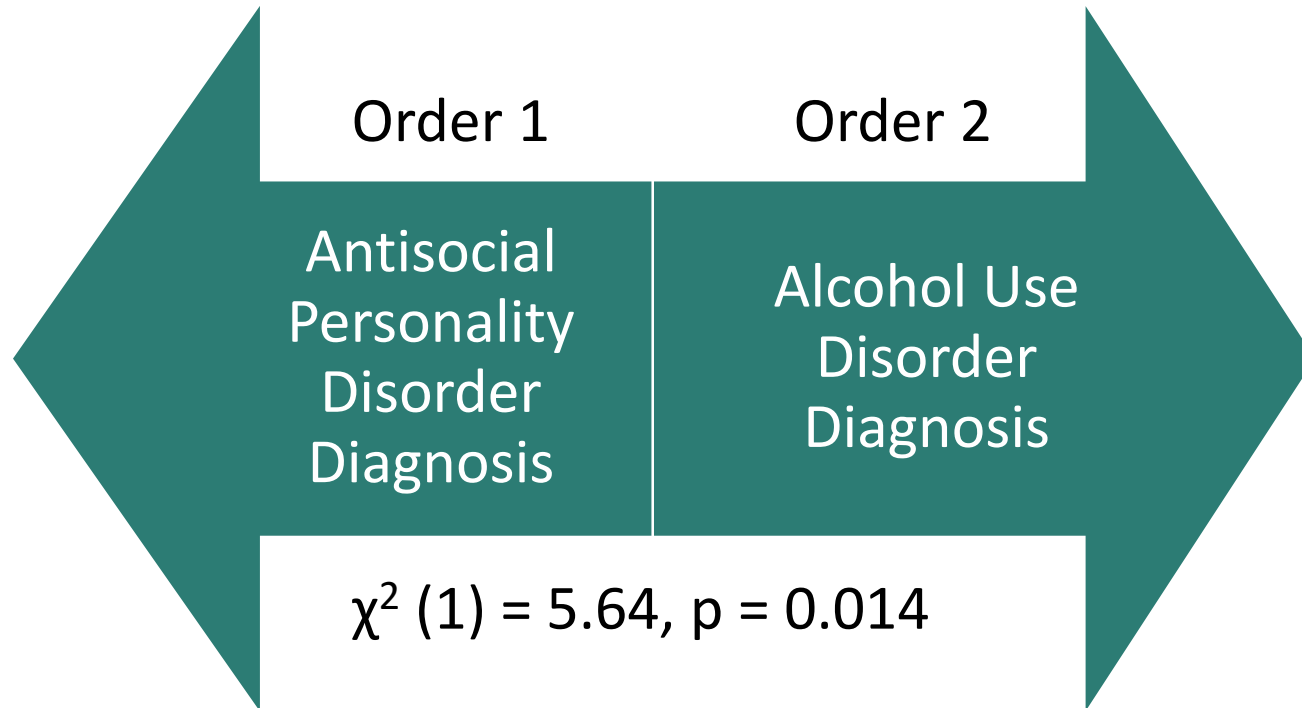
## Confirmation Bias Persists

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# Study 3 Results: Order Effects Present (H3.2)

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# Studies 2 & 3 Discussion

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- Clinicians appear to anchor on an initial hypothesis and keep pursuing it
  - Evidence both for:
    - Resistance to influence by later info (primacy effects of order)
    - Repeated seeking of confirmatory information

# General Discussion

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- Expertise does not protect clinicians from cognitive biases
- Policies and procedures are needed to reduce effects of cognitive biases
  - Exposure control (blinding / linear sequential unmasking)
    - E.g., access to the same information in the same order for interrater reliability

Thank you.

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# SPSP 2019 Abstract

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- Three studies (1 survey, 2 experiments) examine cognitive biases in the professional judgments of nationally-representative samples of psychologists working in legal contexts.
- Study 1 (N= 84) demonstrates robust evidence of the bias blind spot (Pronin, Lin, & Ross, 2002) in experts' judgments. Psychologists rated their own susceptibility to bias in their professional work lower than their colleagues (and laypeople). As expected, they perceived bias mitigating procedures as more threatening to their own domain than outside domains, and more experience was correlated with higher perceived threat of bias mitigating procedures.
- Experimental studies 2 (N=118) & 3 (N=128) with randomly-selected psychologists reveals psychologists overwhelmingly engage in confirmation bias (93% with one decision opportunity in study 1, and 90%, 87%, and 82% across three decision opportunities in study 2). Cognitive reflection was negatively correlated with confirmation bias. Psychologists were also susceptible to order effects in that the order of symptoms presented affected their diagnoses—even though the same symptoms existed in the different scenarios (in opposite orders).

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