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### Blackjack Player Choice, Superstition, and Calculated Odds of Winning

Skyler Worley  
*Pittsburg State University*

Erykah McClendon  
*Pittsburg State University*

Avery Mielke  
*Pittsburg State University*

Ryan Speelman  
*Pittsburg State University*

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# **BLACKJACK PLAYER CHOICE, SUPERSTITION, AND CALCULATED ODDS OF WINNING**

Skyler Worley, Ryan C. Speelman, Avery Mielke, & Erykah  
McClendon

# OUR STUDY

- Pathological gambling is an addictive type disorder afflicting millions of Americans today.
- The disorder is based on impulsivity and is capable of ruining a person's social and financial standing.
- Teaching gamblers to differentiate between irrational and rational beliefs could aid in the treatment of the disorder, improving their quality of life.



Feeling compelled to gamble could seem like being in the twilight zone.

# WHY BLACKJACK?

- Blackjack is extremely popular and simple
- The player's skill has a significant impact on the outcome of the game
- Most gambling environments contain at least one Blackjack table

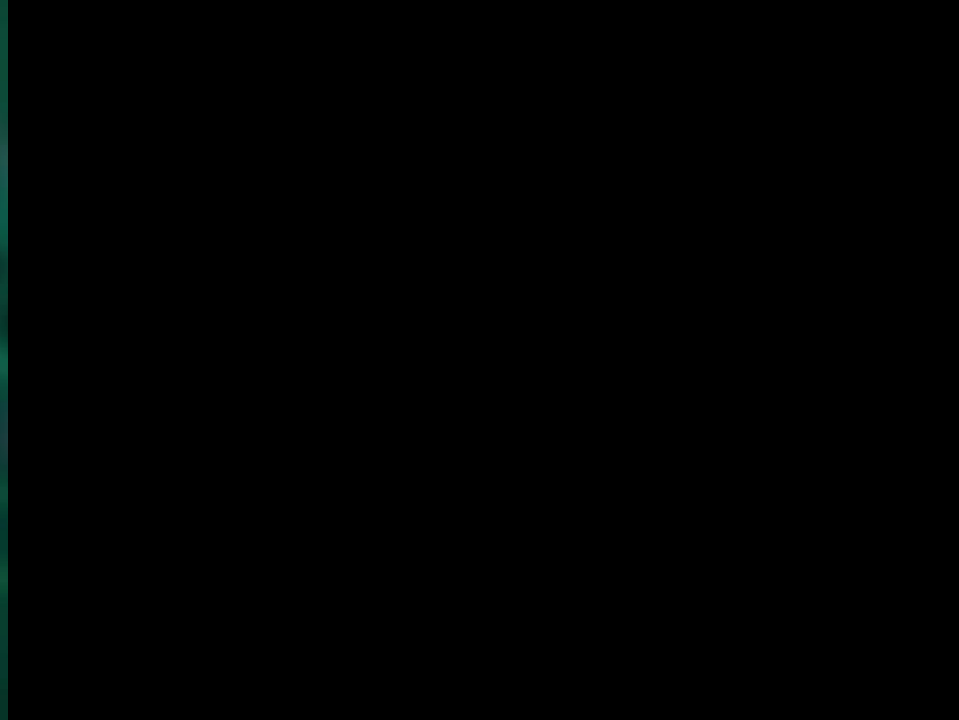


# HOW IS BLACKJACK PLAYED?

This is a simple example of a game of Blackjack



# SUPERSTITION





# B. F. SKINNER

- Skinner loved using pigeons
- He found that various schedules of reinforcement had a direct effect on the rate of learning
- He also found that behaviors could be incidentally reinforced



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# SUPERSTITION SURVEY

## Appendix A

Rate how much you agree with the following statements 1 = not at all true, 2 = somewhat true, 3 neutral, 4 = true, 5 very true

### *Illusion of control*

1. If I stay positive I am more likely to win.
2. In blackjack wins are more likely to occur if I am already winning or have won a few hands in a row.
3. A player who plays poorly may disrupt my good hands and the flow of the game.
4. A dealer that “busts” a lot is a good dealer and will likely continue to bust.

### *Superstition*

5. I like to carry a lucky item or wear lucky clothing when playing blackjack.
6. My chances of winning are better if I perform a special ritual e.g. holding my hands or chips a particular way.
7. It is good advice to stay in the same seat when I am winning.
8. Some blackjack players are luckier than others.



# PURPOSE

- In this study, we attempted to discover whether or not education had any impact on reports of superstition.
- If a negative correlation existed, then education could possibly reduce the level of superstition in an individual.
- If education can reduce superstition, then it can aid in the treatment of pathological gambling



You're not kiddin, are you?

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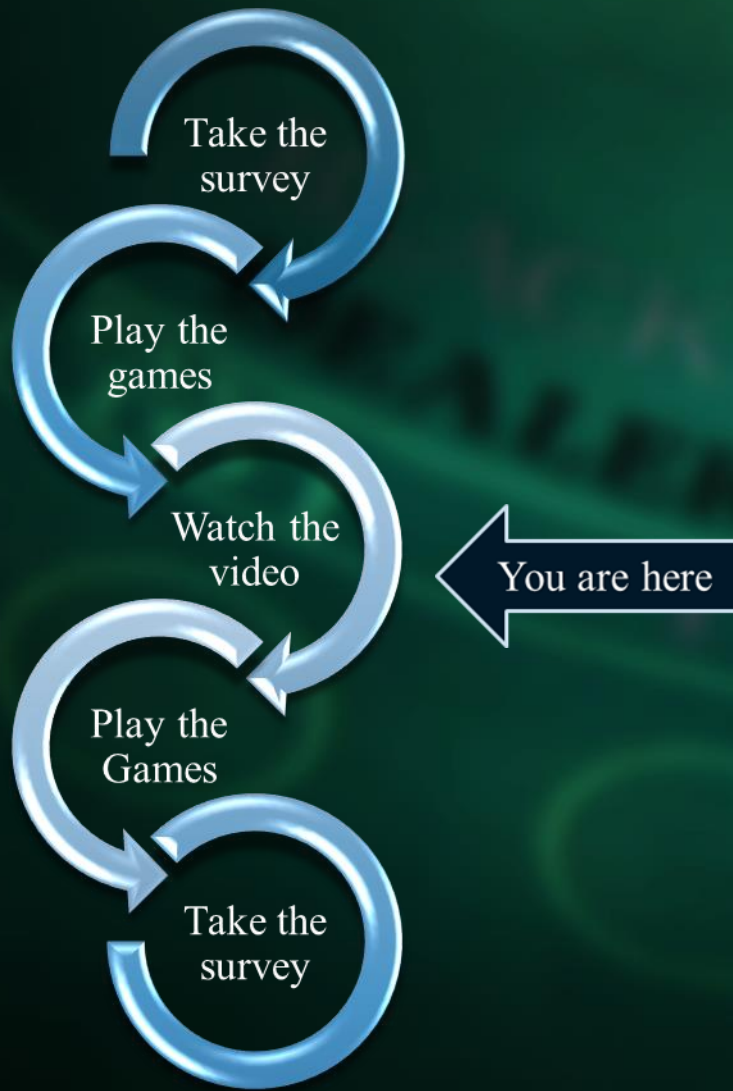
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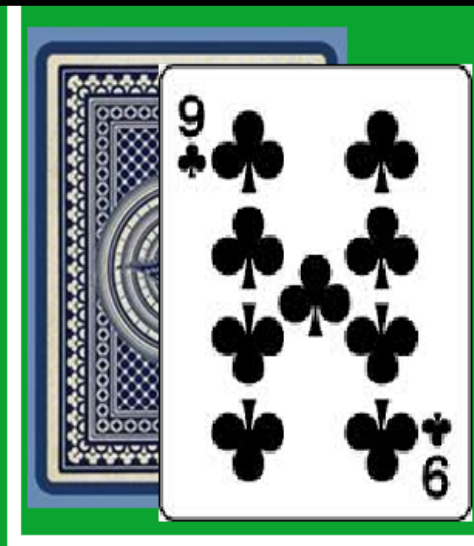






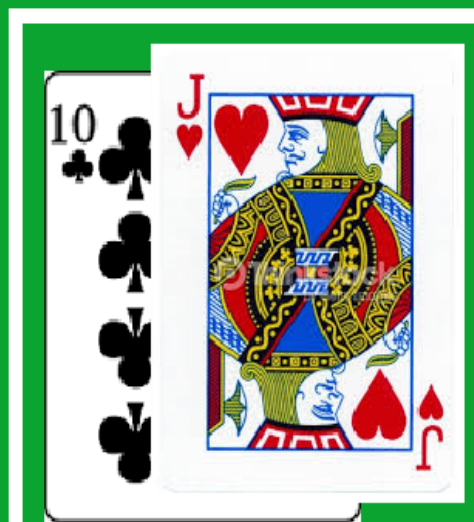
- Our video was approximately 9 minutes long
- It covered basic strategies
- It also addressed common misconceptions about the game
- After the video, participants were given a card with the strategies from the video to refer back to if needed.





DEALER

BLACKJACK PAYS 3 TO 2



YOUR HAND

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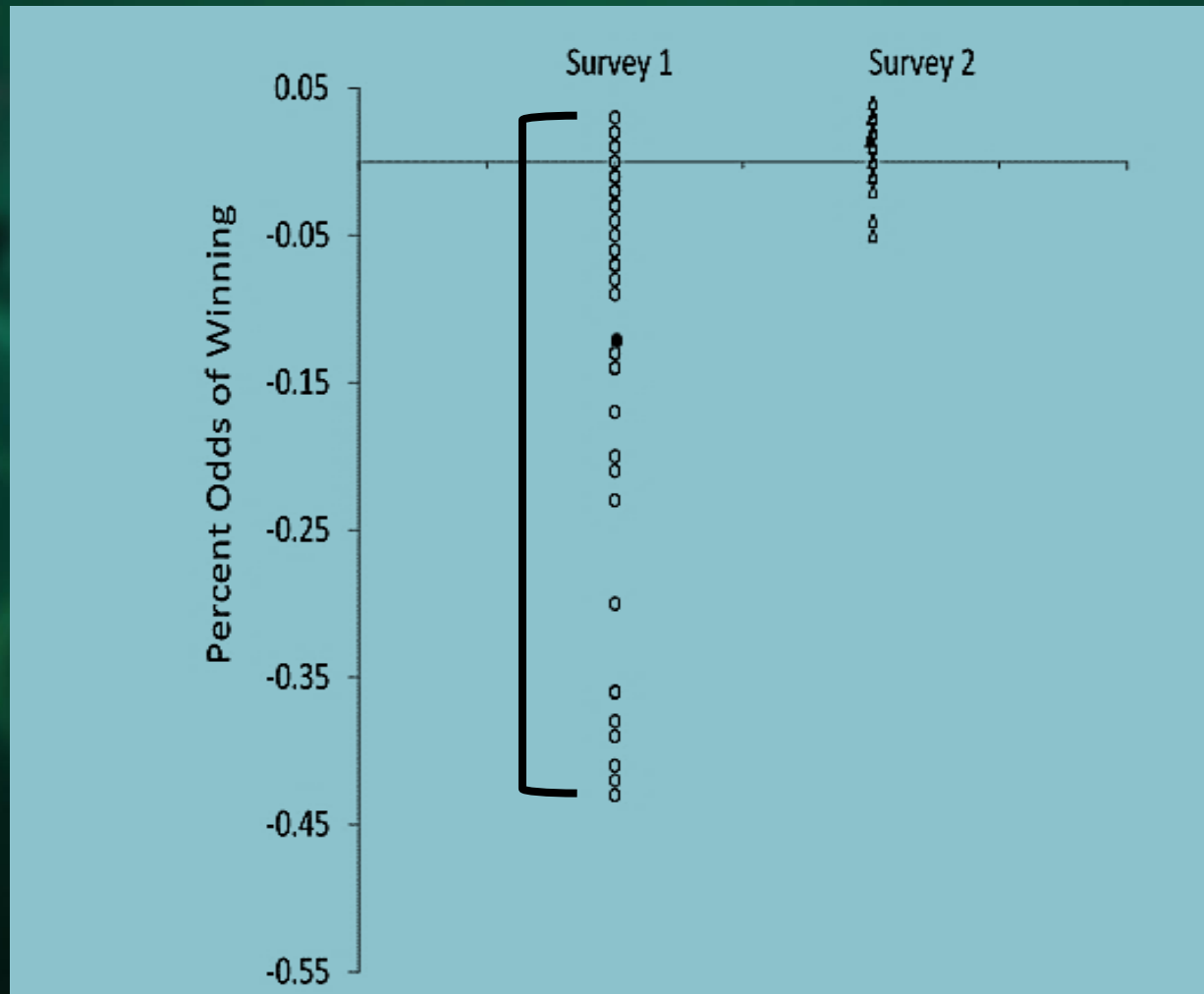
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### *Superstition*

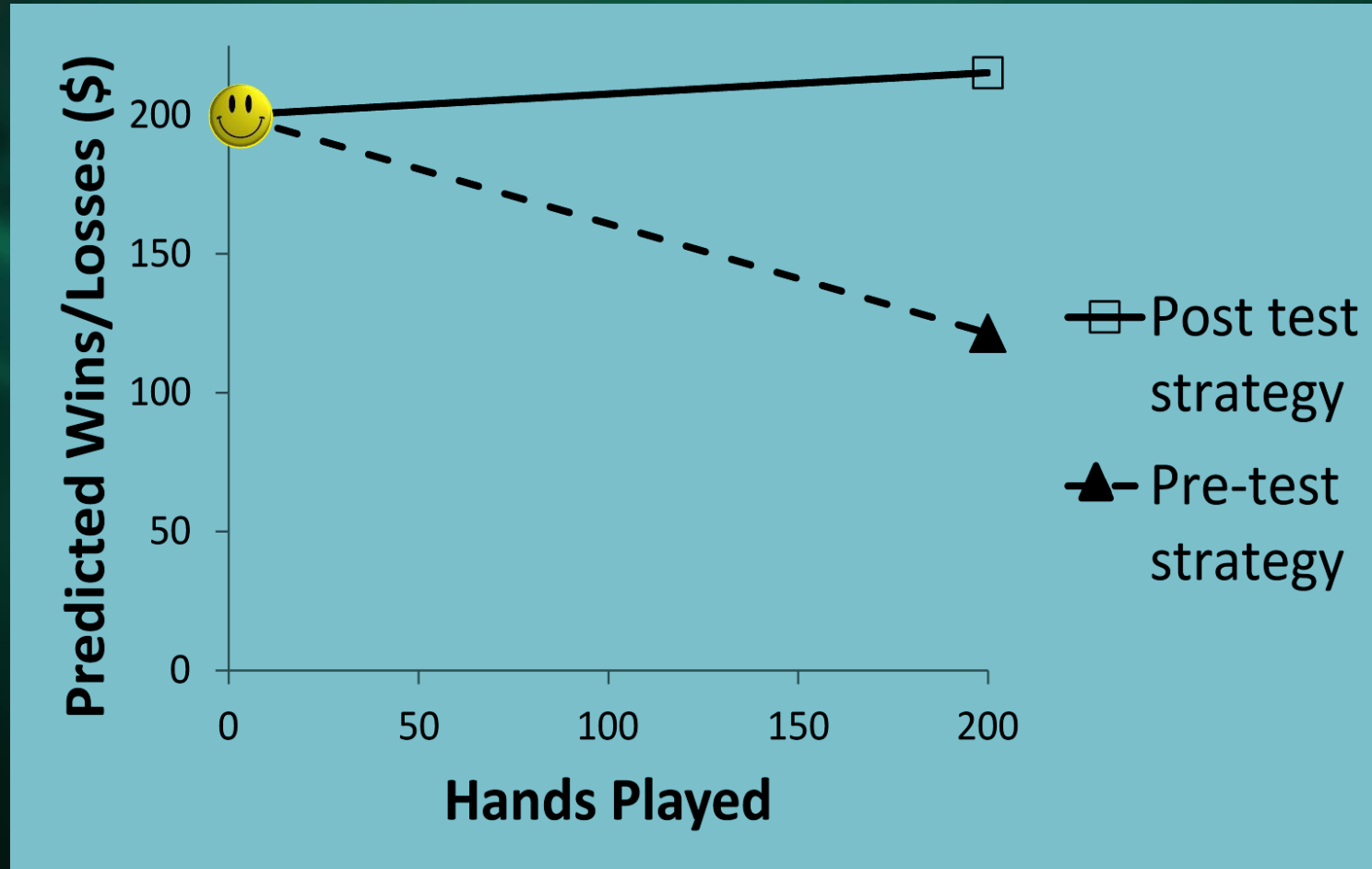
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# RESULTS



# PREDICTION OF PERFORMANCE





# DISCUSSION

- Between 1995-2012, 108 articles were published concerning behavior analytic gambling research.
- Only 3 articles attempted to evaluate treatment of pathological gambling
- No articles discussed the use of education in treatment
- Our video was brief, inexpensive, and effective at dispelling superstition.
- Dispelling superstition can be a preventative measure

# SUPERSTITION SURVEY

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# REFERENCES

- Arntzen, E. (2008). On the role of verbal behavior in understanding gambling behavior. *Analysis of Gambling Behavior*, 2(2), 111–113.
- American Gaming Association. (2013). 2013 State of the states: The AGA survey of casino entertainment. Retrieved November 10, 2017 from [http://www.americangaming.org/sites/default/files/uploads/docs/aga\\_sos2013\\_fnl.pdf.2](http://www.americangaming.org/sites/default/files/uploads/docs/aga_sos2013_fnl.pdf.2)
- Blackwood, K. (2006). *Casino gambling for dummies*. Hoboken, NJ : Wiley Pub. Inc.
- Dixon, M. R. (2000). Manipulating the illusion of control: Variations in gambling as a function of perceived control over chance outcomes. *Psychological Record*, 50(4), 705–719.
- Dixon, M. R., Hayes, L. J., & Aban, I. B. (2000). Examining the roles of rule following, reinforcement, and pre-experimental histories on risk-taking behavior. *Psychological Record*, 50(4), 687–704.
- Dixon, M. R., & Jackson, J. W. (2008). Using performance feedback to teach video poker players to gamble better. *Analysis of Gambling Behavior*, 2(1), 49–54.
- Dixon, M. R., Jacobs, E. A., & Sanders, S. (2006). Contextual control of delay discounting by pathological gamblers. *Journal of Applied Behavior Analysis*, 39(4), 413-422.
- Dixon, M. R., Whiting, S. W., Gunnarsson, K. F., Daar, J. H., & Rowsey, K. E. (2015). Trends in behavior-analytic gambling research and treatment. *The Behavior Analyst*. doi:10.1007/s40614-015-0027-4
- Ferland, F. Ladouceur, R., & Vitaro, F. (2002). Prevention of problem gambling: Modifying misconceptions and increasing knowledge. *Journal of Gambling Studies*, 18(1), 19-29
- Gaboury, A., & Ladouceur, R. (1993). Evaluation of a prevention program for pathological gambling among adolescents. *Journal of Primary Prevention*, 14, 21-28.
- Joukhador, J., Blaszczynski, A., & Maccallum, F. (2004). Superstitious beliefs in gambling among problem and non-problem gamblers: Preliminary data. *Journal of Gambling Studies*, 20, 171 – 180.
- Lesieur, H. R., & Blume, S. B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry*, 144, 1184-1188.
- National Gambling Impact Study Commission Report (1999). Retrieved on November 3, 2017, from, <http://www.ncfamily.org/NGISC%20Final%20Report/4.pdf>.
- Skinner, B.F. (1947). ‘Superstition’ in the pigeon. *Journal of Experimental Psychology*, 38, 168-172.
- Weatherly, J. N., & Dixon, M. R. (2007). Toward an integrative behavioral model of gambling. *Analysis of Gambling Behavior*, 1, 4-18.