

# EXAMINING COGNITIVE BIASES

FROM THE POSITION OF RATIONALITY THEORIES

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# DECISSION-MAKING

Choose a Goal

Choose a Way to  
Achieve a Goal

Evaluate Success Rate

# ENVIRONMENT

- Certainty
- Risk
- Uncertainty

Deterministic models

Probabilistic  
estimates

Guessings

# ST. PETERSBURG PARADOX

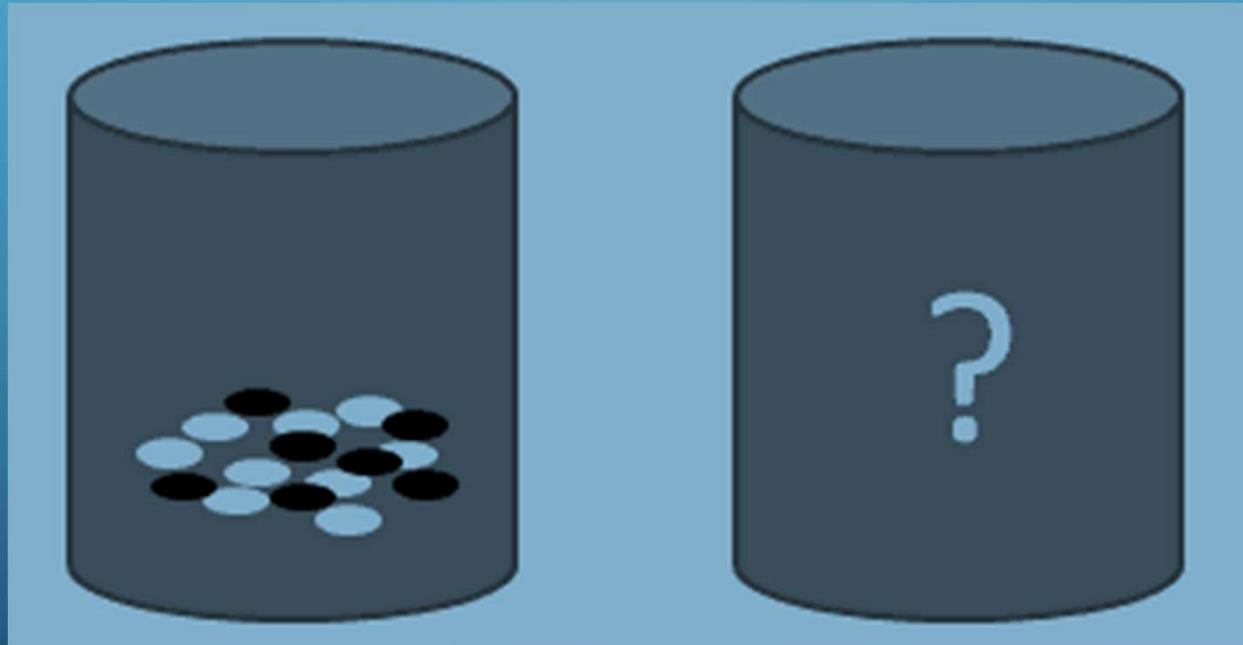
Banker	Bankroll	Expected value of lottery	Consecutive flips to win max	Attempts for 50% chance to win max	Play time (1 game/minute)
Friendly game	<b>\$100</b>	\$7.56	<b>6</b>	<b>44</b>	44 minutes
Millionaire	<b>\$1,000,000</b>	\$20.91	<b>19</b>	<b>363,408</b>	252 days
Billionaire	<b>\$1,000,000,000</b>	\$30.86	<b>29</b>	<b>372,130,559</b>	708 years
<a href="#">Bill Gates</a> (2015)	<b>\$79,200,000,000<sup>[6]</sup></b>	\$37.15	<b>36</b>	<b>47,632,711,549</b>	90,625 years
<a href="#">U.S. GDP</a> (2007)	<b>\$13.8 trillion<sup>[7]</sup></b>	\$44.57	<b>43</b>	<b>6,096,987,078,286</b>	11,600,052 years
<a href="#">World GDP</a> (2007)	<b>\$54.3 trillion<sup>[7]</sup></b>	\$46.54	<b>45</b>	<b>24,387,948,313,146</b>	46,400,206 years
<a href="#">Googolaire</a>	<b><math>10^{100}</math></b>	\$333.14	<b>332</b>	<b>1.340E+191</b>	8.48E+180 x life of universe

# ALLAIS' PARADOX

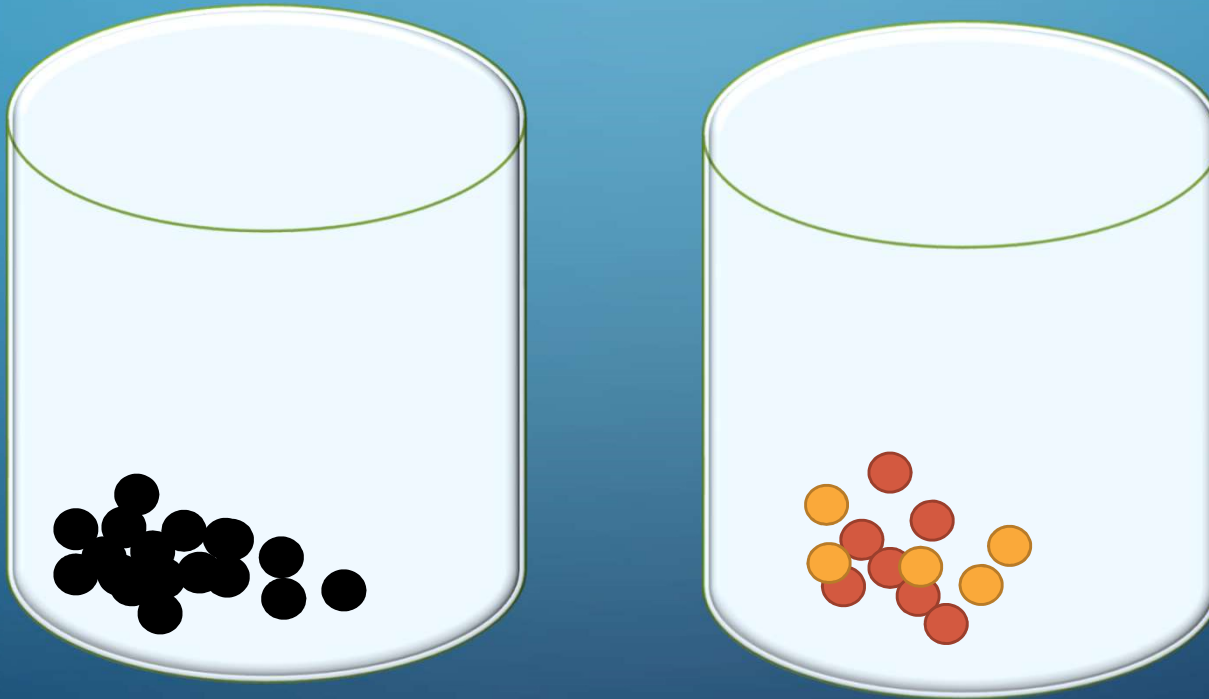
Experiment 1				Experiment 2			
Gamble 1A		Gamble 1B		Gamble 2A		Gamble 2B	
Winnings	Chance	Winnings	Chance	Winnings	Chance	Winnings	Chance
\$1 million	100%	\$1 million	89%	Nothing	89%	Nothing	90%
		Nothing	1%	\$1 million	11%		
		\$5 million	10%			\$5 million	10%

Tab. From wikipedia

# ELLSBERG 50:50 PARADOX



# ELLSBERG 30:60 PARADOX



# EXAMINATIONS

- Re-creation of original Ellsberg test
- Subliminal influence with images
- Anchoring with secret ballot
- Bandwagon effect



# RESULTS

- Acquisition bias (unexpected)
- Bandwagon bias
- Anchoring
  
- Small influences in incontrolled environment

# EXAMINING COGNITIVE BIASES

Thank you



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