

# Avoiding GIGO; Subject-Matter-Expert (SME) Interviewing Techniques

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# Pop Quiz!

	P10	P50	P90
1			
2			
3			
4			
5			

### Pop Quiz!

1. What was the price of one share of Yahoo!Japan on the Tokyo Stock Exchange on March 27, 2000?
2. What is the fastest time for running up the stairs of the Empire State Building?
3. According to Ed Seiler's List of Books, how many books did Isaac Asimov write?
4. In what year did Krakatau erupt?
5. How many bedrooms are there in Buckingham Palace?

# Why is it so hard to estimate ranges?

- Bias
  - Cognitive bias; we actually fail to see what we don't want to see \*
  - Motivational bias
- Training
  - Trying to predict what **will** happen, rather than what **might** happen
  - Fear of looking like you don't know what you're talking about
- Lack of understanding regarding probabilities
- It's a strange thing to do!

\* Bazerman & Chugh

# Avoiding GIGO



## Subject Matter Expert Interview Template

Step 0: Make sure we're talking about the same thing!

Expert's Name:	Date:
Uncertainty:	
Notes on Bias Questions:	

Uncertainty Definition (quantity, units, scale, timeframe, etc.):
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Step 1: Get the biases out into the open

Pessimistic Factors	Optimistic Factors

Step 2: Stretch the imagination

Strategy	P10	P50	P90	Comments
Strategy 1				
Strategy 2				
Strategy 3				
Strategy 4				
Strategy 5				
Strategy 6				

# The Bayesian Brain

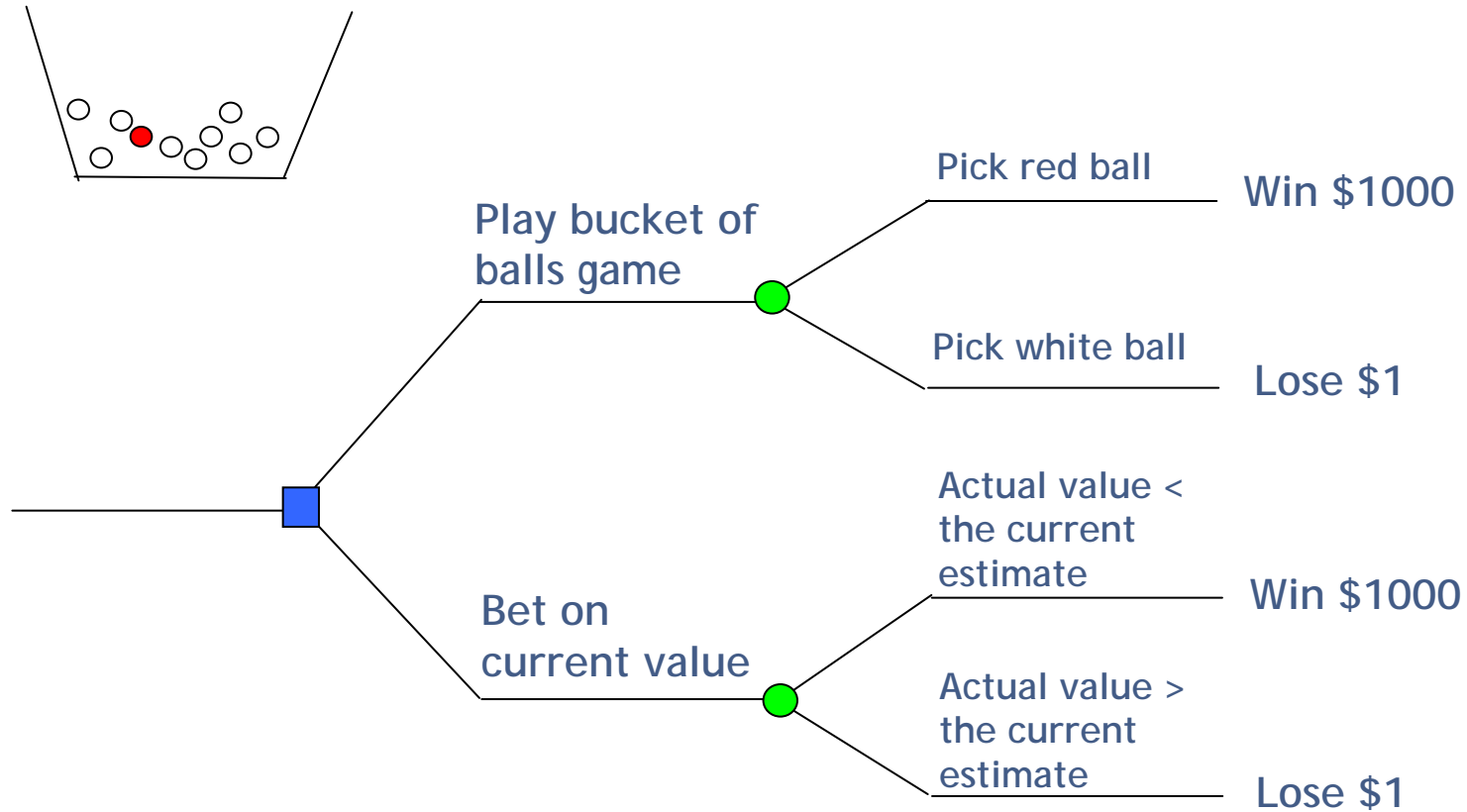
- There is evidence that humans are constantly comparing the probabilities associated with various possible explanations for what we see, hear, etc., so as to decide what to believe about the world
  - The “Bayesian coding hypothesis”
- We’ve evolved an ability to tell which of several possible situations is most likely to explain our perceptions

Reference: Knill and Pouget

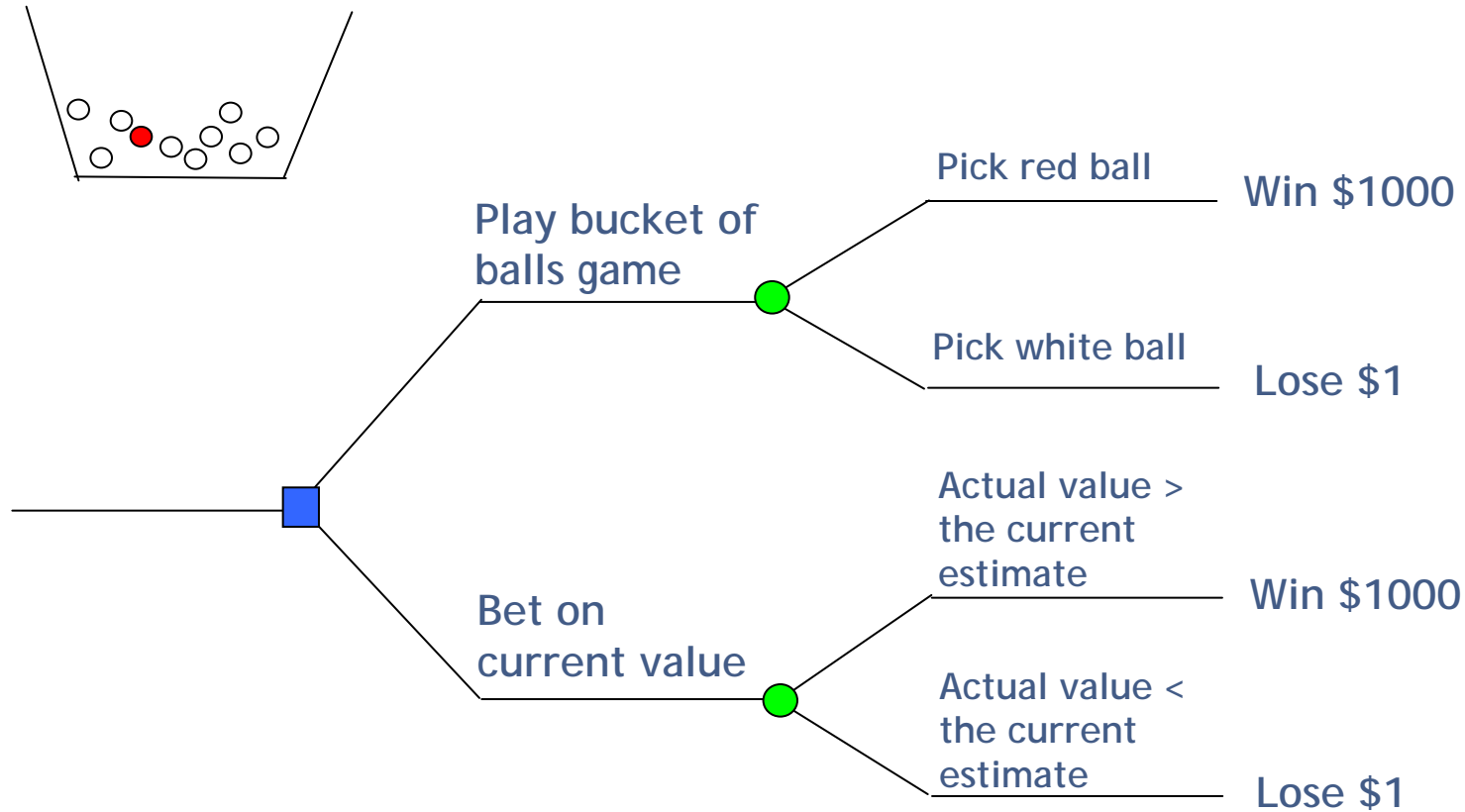
# Working with nature, rather than fighting it

- Estimating P10/50/90s is still difficult
- Choosing between alternatives (deciding which is more likely to occur) is easier
- **So – we ask people to place hypothetical bets**

# P10 Interview Tool

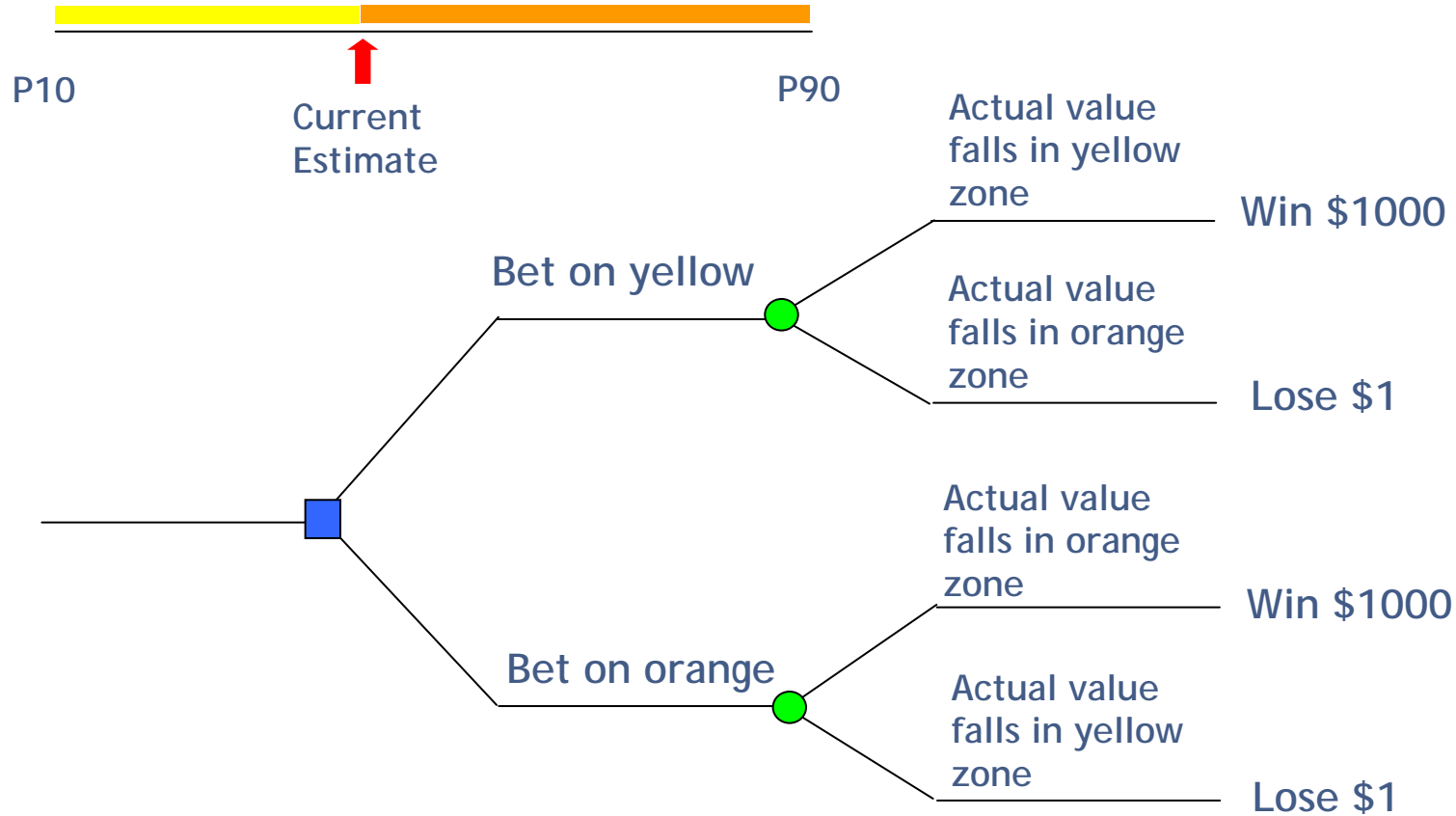


# P90 Interview Tool



# Avoiding GIGO

## P50 Interview Tool



**I need a  
volunteer...**

## SME Interview Exercise

1. Choose a partner
2. Decide who will interview whom first
3. Choose a parameter about which to interview
  1. Use the process; get biases out, etc.
  2. Gather P10/50/90 estimates
4. Trade places

# Summary

- We spend many hours building models; it's worth taking some time to ensure valid inputs
- Generating P10/50/90 estimates for parameters is hard
- Using a good SME interview technique can help to arrive at valid estimates
  - Get biases out in the open
  - Work with nature (i.e., people's ability to choose between uncertain alternatives), rather than against it
- Even so, it's a subjective and imperfect process
- But it's still better than a "best guess" +/- 10%

# References

Bazerman, Max H. and Chugh, Dolly. "Decisions Without Blinders," *Harvard Business Review*, Vol. 84, No. 1, pp. 88 – 97, January 2006.

Knill, David C. and Pouget, Alexandre. "The Bayesian brain: the role of uncertainty in neural coding and computation," *Trends in Neuroscience*, Vol. 27, No. 12, pp. 712 – 719, December 2004.

# Any Questions?

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