Judgment Systems

System 1

- Automatic
- Requires Little Effort
- “Intuition” or “ Gut Feeling”

System 2

- Controlled
- Monitors/Evaluates Output of System 1

Highly skilled performance transforms System 1 to system 2 (Chess master viewing game)

Judgment Systems

A bat and a Ball together cost 1.10, with the bat costing $1.00 more than the ball. How much does the ball cost?

Common Answer: 0.10
Cause of Error: Fail to use system 2 and verify

Heuristic Judgment

Question: What proportion of long-distance relationships break up within a year?

Substitute Question: How many instances of long-term break ups come to mind?

Availability Heuristic

Also: Which is more common, murder or suicide?

Judgment: Attribute Substitution

Target Attribute: Hard to Assess
Heuristic Attribute: Easy to Assess

Most People Substitute Heuristic for Target

Judgment: Space

Question : What % of Cube is taken up by sphere dropped inside?

Most people estimate 74% because that is good estimate of ‘circle within square’, which is substituted easier judgment

Ture answer 52%, which surprises most people

People are usually unaware of substitution

Judgment: Life Satisfaction

Question 1: How happy are you with your life in general

Question 2: How many dates did you have last month? (Causes evaluation of romantic satisfaction)

1 then 2: No correlation between answers
2 then 1 : Correlation of 0.66
Explanation?

Judgment Heuristic: Representativeness and Probability

Target Question: How Likely is X to be a Y?

Heuristic Substitution: How much does X resemble the stereotype of Y?

Judgment Heuristic: Representativeness

Tom W. is of high intelligence, although lacking in true creativity. He has a need for order and clarity, and for neat and tidy systems in which every detail finds its appropriate place. His writing is rather dull and mechanical, occasionally enlivened by somewhat corny puns and flashes of imagination of the sci-fi type. He has a strong drive for competence. He seems to have little feel and sympathy for people, and does not enjoy interacting with others. Self-centered, he nonetheless has a deep moral sense.

Representativeness Group: The degree to which Tom resembles a typical graduate student.

Probability Group: How likely is Tom to specialize in that field?

Correlation between ratings of two groups is almost exactly 1.

Judgment Heuristic: Representativeness

Probability Group: How likely is Tom to specialize in that field?

Need Base rate information to answer this question. More populated fields increase likelihood of Tom being in that group.

Library Science = 3%
Humanities and Education = 20%

Most people ignore the base rates, use representativeness only in making judgment

Judgment Heuristic: Representativeness

Linda is a 31 year old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations.

Please rank the following by their probability, with 1 for the most probable and 6 for the least probable.

A) Linda is a university professor
B) Linda is an insurance salesperson
C) Linda is a bank teller
D) Linda is an owner of a book store
E) Linda is a single mom and takes classes at night school
F) Linda is a bank teller and is active in the feminist movement

Judgment Heuristic: Representativeness

Linda is a 31 year old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations.

Please rank the following by their probability, with 1 for the most probable and 6 for the least probable.

A) Linda is a university professor
B) Linda is an insurance salesperson
C) Linda is a bank teller and an active feminist
D) Linda is an owner of a book store
E) Linda is a single mom and takes classes at night school
F) Linda is a bank teller and is active in the feminist movement

Judgment Heuristic: Representativeness produces Conjunction Fallacy

"Linda is a bank teller and an active feminist"

Rated as MORE LIKELY than

"Linda is a bank teller"

Explanation: Linda resembles "Linda is a bank teller and an active feminist" more

But logically probability of two statements less than one

Judgment Heuristic: Scope Neglect

Willing to Pay (WTP)

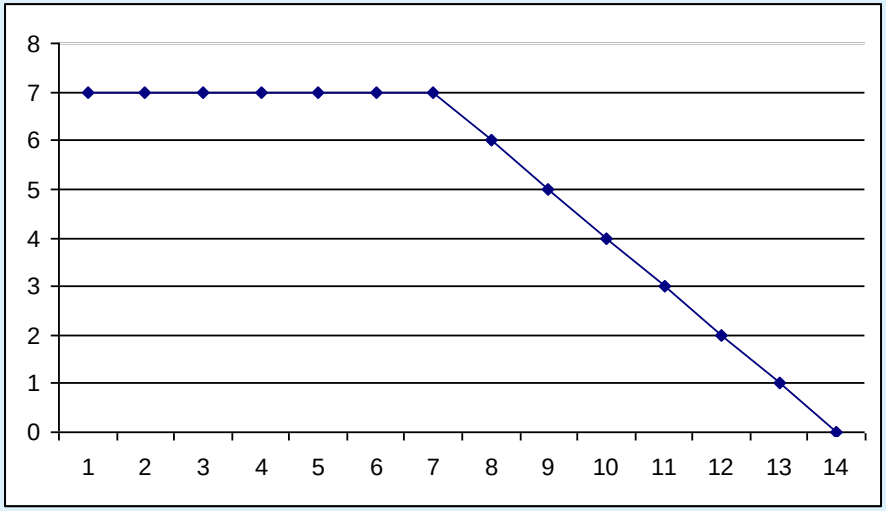
Save 2,000 birds: $80
Save 20,000 birds : $78
Save 200,000 birds: $88

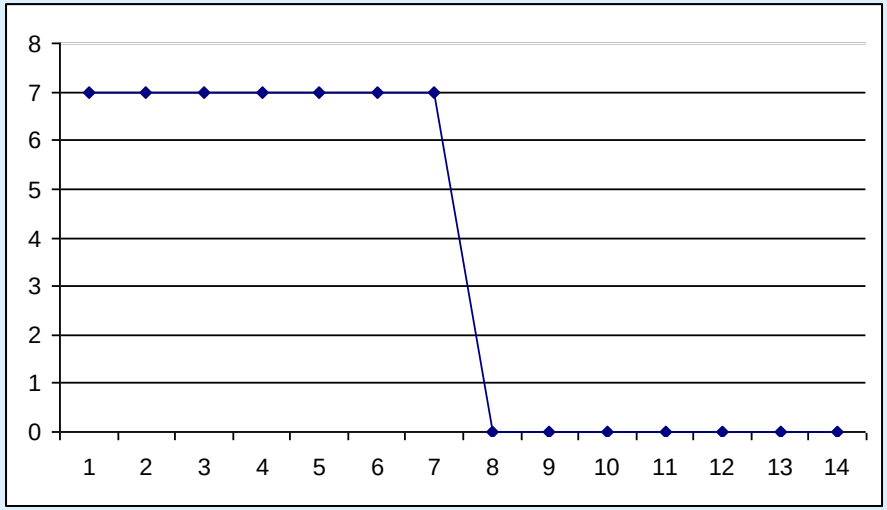
Bird's death represented by image of bird stuck in nasty oil
Creates negative affect which is mapped onto dollar scale for WTP

WTP for 57 wilderness areas only 28% than WTP for one area

Decision Making: Choosing More Pain?

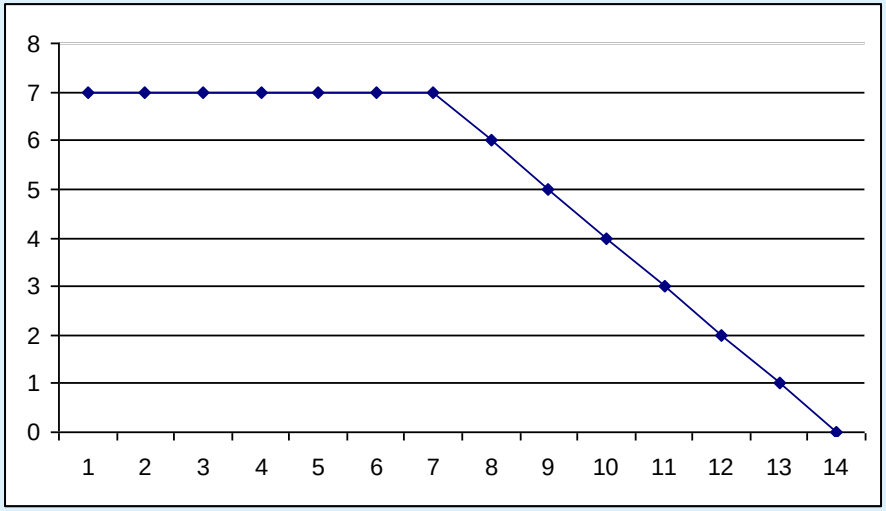
A? or B?



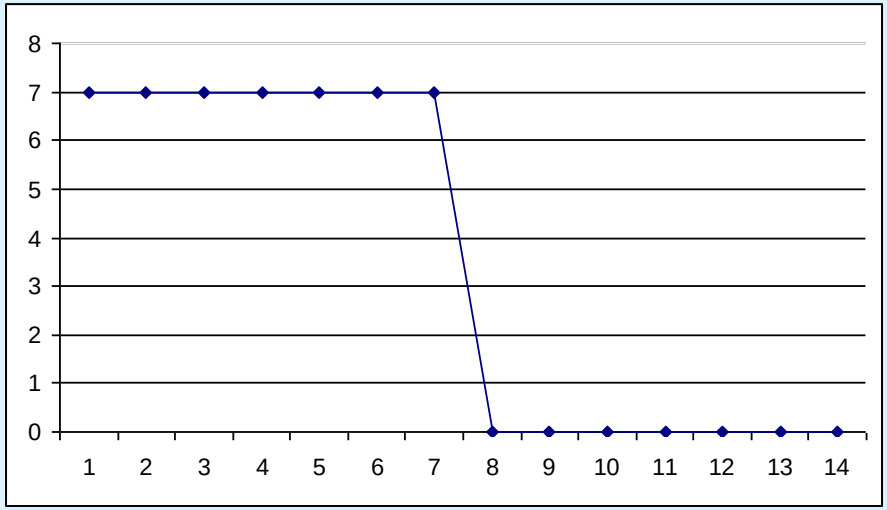


Decision Making: Choosing More Pain?

69%



31%



Decision Making: Choosing More Pain?

How is this possible?

Remembered pain(RP)= (MAX+ENDING)/2

A– (RP=(7+1)/2=4)
B- (RP=(7+7)/2=7)

Much simpler equation then remembering whole experience
Duration is often ignored even as it is remembered

Experienced pain= sum(pain)

Which should doctors minimize?

Judgment Error: Violations of Dominance

Question A: Probability of earthquake in US in next decade that kills more than 1000 people.

Question B: Probability of earthquake in California in next decade that kills more than 1000 people.

People Rate B higher than A even though illogical. Why? California is representative of earthquakes.

Judgment : Utility Versus Value

Which would you choose?

A) 10% chance of 10 Billion Dollars
B) 100% chance of 10 Million Dollars

Expected Value of A = 1 Billion
Expected Value of B = 10 Million

“A” has 100 times higher Expected Value

Judgment : Utility Versus Value

Which would you choose?

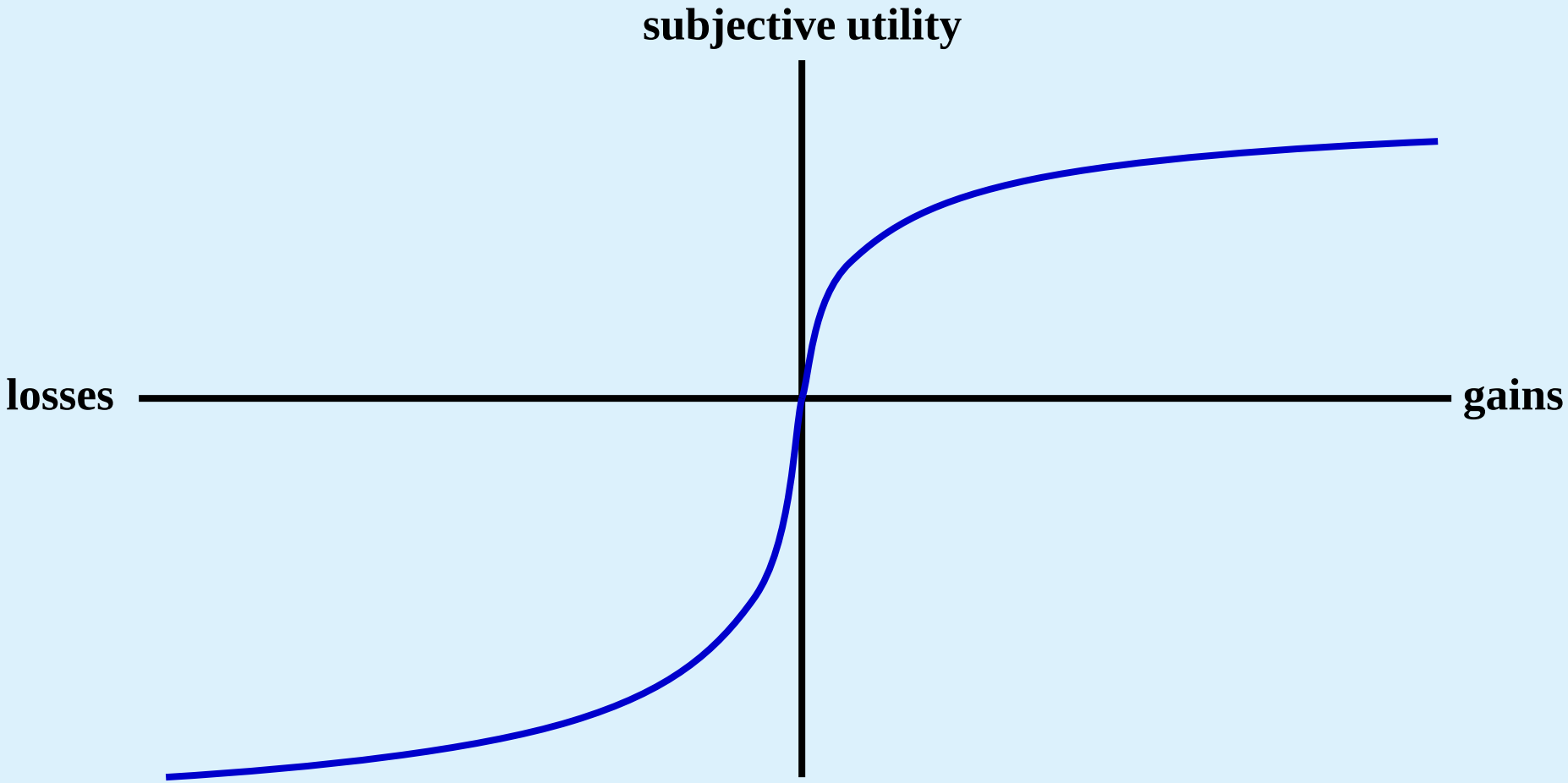
A) 10% chance of 10,000 Dollars
B) 100% chance of 10 Dollars

Expected Value of A = 1 Thousand
Expected Value of B = 10

“A” has 100 times higher Expected Value

Judgment : Utility Versus Value

How do we decide how good something is?



Judgment : Utility Versus Value

You just won $300: Choose Between…

A) 100% of $100

B) 50% of $200

Most people choose A

You just won $500: Choose Between…

A) 100% of losing $100

B) 50% of losing $200

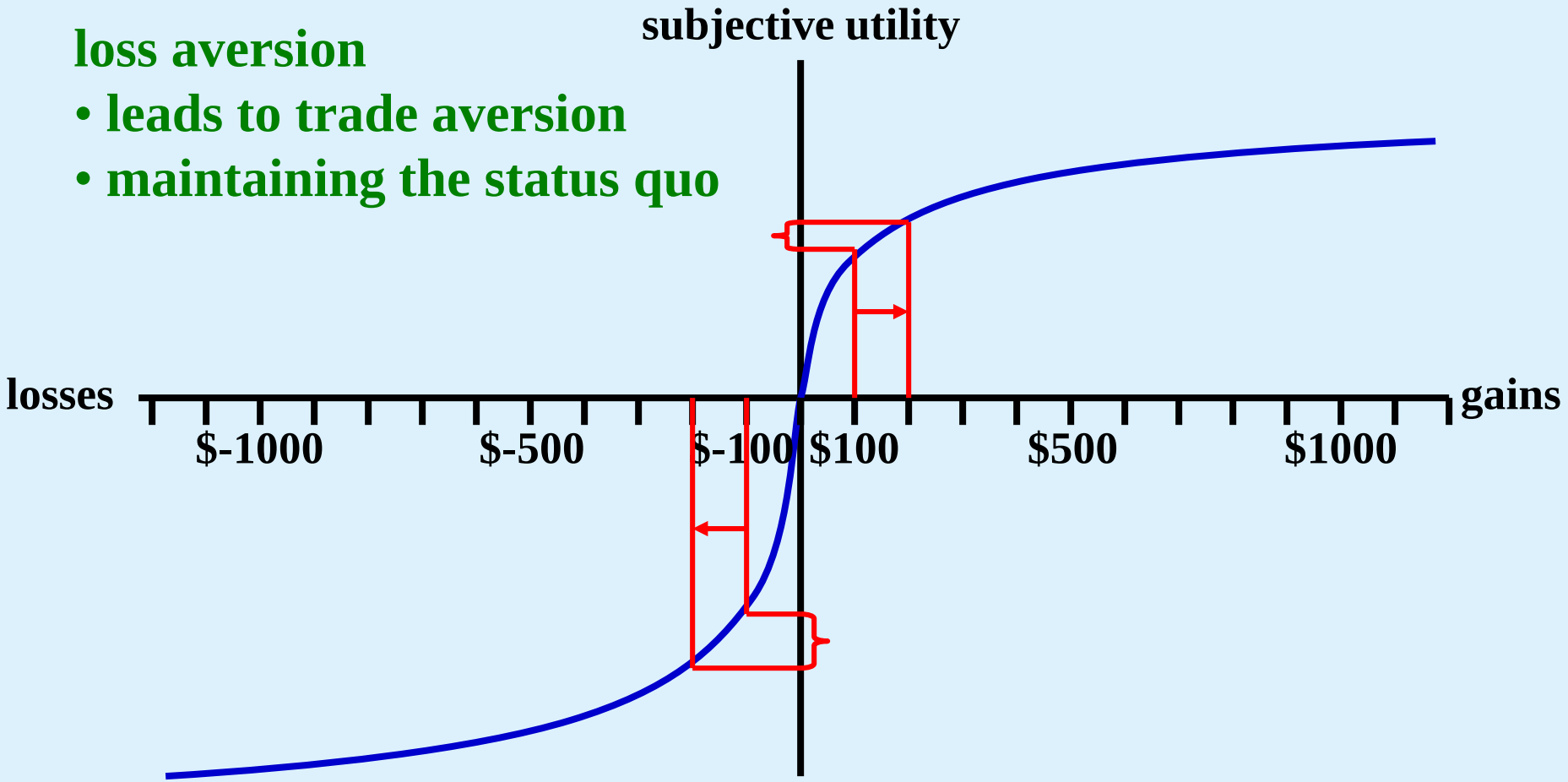
Most people choose B

Judgment : Utility Versus Value

How do we decide how good something is?

loss aversion

- **leads to trade aversion**
- **maintaining the status quo**



Decision Making

Do you believe in free will?

Why or Why Not?