Chapter 5
Framing and the Reversal of Preferences
I. Gains, Losses, and Risk

A. Expected Utility Theory
B. Risk Aversion
C. Prospect Theory

Daniel Bernoulli
A. Expected Utility Theory

**Expected value:** [probability of event] \( \times \) [value of event if it comes to pass]

Example 1: 30% chance of winning $100

\[ EV = ? \]

\[ (.3)(100) = $30 \]
A. Expected Utility Theory

Example: 30% chance of winning $100, 70% chance of losing $60

$EV = \left( \frac{3}{10} \right)(100) + \left( \frac{7}{10} \right)(-60) = -$12$
B. Risk Preferences

Risk neutrality, risk aversion, risk seeking

Risk neutrality: indifferent between certain and uncertain events of equivalent EV

Risk aversion: dislike gambling - prefer relatively certain to relatively uncertain event of equivalent EV

Risk seeking: like gambling - prefer relatively uncertain to relatively certain event of equivalent EV
B. Risk Preferences

Explanation for general presence of risk aversion

- Diminishing marginal utility of wealth
- St. Petersburg paradox (Bernoulli)
C. Prospect Theory

Problem Two:

Program C = 200 lives lost

Program D = (1/3) (600 lost) + (2/3)(0 lost)
C. Prospect Theory

Problem Three:

You were given shares once worth $20, now worth $10; there is now a 50/50 chance they will drop to $0 or rise back to $20.

Do you sell for market price ($10)?
Endowment effects
Mental accounting