

Bounded Rationality and Property Law

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Rationality

- 1) Expected Utility Theory
 - a) Concave utility functions
 - b) Decisionmaking on the basis of expected utility
 - c) General phenomenon of risk aversion
- 2) Bounded Rationality



Standard Utility Curve



Source: Prakash, Enterprise and Individual Risk Management



Standard Utility Curve



Source: http://economicsconcepts.com/total_utility_and_marginal_utility.htm



Decision-making on the basis of expected utility

- Rational choice = selecting path B over path A iff the sum of the expected utilities of the various possible outcomes of path B exceed those of path A
- To illustrate:
 - path A leads to certain gain of 20 utiles (or units of pleasure)
 - path B leads to 25% chance of gaining 100 utiles and a 75% chance of gaining nothing
 - expected utility from pursuing path A is 20;
 - expected utility from pursuing path B is .25(100) + .75(0)
 = 25 utiles
 - Under these circumstances, a rational person will choose path B



Standard Utility Curve



Source: Prakash, Enterprise and Individual Risk Management



Decision-making on the basis of expected utility

- Rational choice = selecting path B over path A iff the sum of the expected utilities of the various possible outcomes of path B exceed those of path A
- To illustrate:
 - path A (Harvard Law School) leads to certain lifetime total income of \$20M (discounted to present value)
 - path B (Berkeley Colley of Music) leads to 25% chance of lifetime income of \$100M and a 75% chance of \$1M
 - expected benefit from pursuing path A is \$20M
 - expected benefit from pursuing path B is .25(100) + .75(1) = \$25.75M
 - In the absence of risk aversion, a rational person will choose path B
 - But risk aversion is likely to cause the person to choose path A instead



Rationality

- 1) Expected Utility Theory
- 2) Bounded Rationality
 - a) Prospect Theory
 - b) Endowment Effect
 - c) Presence Heuristic
 - d) Overoptimism
 - e) Lottery Effect



Prospect Theory

- <u>In general</u>, people underweight prospects that are merely probable in comparison to prospects that are certain
- Gains:
 - 100% chance of winning \$100 should be treated as equivalent of 10% chance of winning \$1000
 - but people behave as if the latter is 5%
 - gives rise to risk aversion for gains but for a reason different from that offered by classical theory
- Losses:
 - 100% chance of losing \$100 should be treated as equivalent of 10% chance of losing \$1000
 - but people behave as if the latter is 5% -- i.e., expected utility is \$500 loss
 - gives rise to risk preference for losses



Endowment Effect

- The pain caused by a loss of X is typically greater than the pleasure reaped by a gain of X
 - Put differently, people place higher values on things to which they think they already have rights, than they do on identical things to which they think they don't (yet) have rights.
 - The result: people will demand a higher price to induce them to surrender an object or an entitlement than they will offer to acquire that object or entitlement.
- The reference point from which gains and losses are assessed is a psychological question, only indirectly a legal one





Endowment Effect

- Tickets to Springsteen concerts: <u>https://www.npr.org/2017/11/09/563133762</u> <u>/bruce-springsteen-on-broadway-comes-with-an-economics-lesson?utm_medium=RSS&utm_campaign=business</u>
- Bottles of wine
- Coffee mugs











Bargaining Over a Shadow

- A's house, near the southern boundary of his lot, has a solar collector on the roof
- B's lot abuts A's lot to the south
- B wants to build a tall house near the northern boundary of her lot, which would cast a shadow on A's collector
- They discuss how to resolve the conflict
 - In a state that does not recognize solar easements, A will offer B a sum of money not to build the house at that location
 - 2) In a state that does recognize solar easements, A will demand a sum of money in order to permit B to build at that location
 - 3) The amount that A demands in situation #2 will be much higher than the amount that A offers in situation #1
 - 4) If the value to B of locating her house in that location is between #1 and #2, then no "Coasean" bargain will occur in either situation









Overoptimism in Sports

- "According to NCAA surveys, more than 60 percent of Division I college men's ice hockey players think it's likely they'll play professionally, but less than 1 percent ever go on to the National Hockey League. About 45 percent of Division I women's basketball players think they have a chance to play professional basketball, but only 0.9 percent of players are drafted by a Women's National Basketball Association team. (The NCAA said that it is currently procuring data on a player's chances of joining other professional leagues, such as those in Europe, but the information is not yet available.)
- Men's hoops players are the most unrealistic. More than threequarters of men's basketball players in Division I say they believe it is at least "somewhat likely" they will play professionally. More than half of Division II players say the same, as do 21 percent of Division III players. Only 1.2 percent of college basketball players will be drafted by a National Basketball Association team.

Source: https://www.insidehighered.com/news/2015/01/27/college-athletes-greatly-overestimate-their-chances-playing-professionally



Levallow & Kahneman, "Delusions of Success: How Optimism Undermines Executives' Decisions" (2003)

"Research into human cognition has traced this overoptimism to many sources. One of the most powerful is the tendency of individuals to exaggerate their own talents—to believe they are above average in their endowment of positive traits and abilities. Consider a survey of 1 million students conducted by the College Board in the 1970s. When asked to rate themselves in comparison to their peers, 70% of the students said they were above average in leadership ability, while only 2% rated themselves below average. For athletic prowess, 60% saw themselves above the median, 6% below. When assessing their ability to get along with others, 60% of the students judged themselves to be in the top decile, and fully 25% considered themselves to be in the top 1%."



Levallow & Kahneman, "Delusions of Success: How Optimism Undermines Executives' Decisions" (2003)

"The inclination to exaggerate our talents is amplified by our tendency to misperceive the causes of certain events. The typical pattern of such attribution errors, as psychologists call them, is for people to take credit for positive outcomes and to attribute negative outcomes to external factors, no matter what their true cause. One study of letters to shareholders in annual reports, for example, found that executives tend to attribute favorable outcomes to factors under their control, such as their corporate strategy or their R&D programs. Unfavorable outcomes, by contrast, were more likely to be attributed to uncontrollable external factors such as weather or inflation. Similar self-serving attributions have been found in other studies of annual reports and executive speeches."



Carden, "Behavioral economics show that women tend to make better investments than men" (2013)

"Terry Odean, a University of California professor, has studied stock picking by gender for more than two decades. A seven-year study found single female investors outperformed single men by 2.3 percent, female investment groups outperformed male counterparts by 4.6 percent and women overall outperformed by 1.4 percent. Why? The short answer is overconfidence. Men trade more, and the more you trade, typically the more you lose — not to mention running up transaction costs....

Additionally, men hold onto their losers a lot longer than women. They're sure the stock will come roaring back — even as it sinks. Academics call it confirmation bias; investment advisers call it boneheaded."



Goodman-Delahunty et al., "Insightful or Wishful: Lawyers' Ability to Predict Case Outcomes" (2010)

"The findings extend previous research on overconfidence in defense lawyers (Loftus & Wagenaar, 1988; Malsch, 1990), by establishing that similar biases arise in predictions by criminal prosecutors and by counsel for both plaintiffs and defendants in civil cases. Lawyers frequently made substantial judgmental errors, showing a proclivity to overoptimism. The most biased estimates were expressed with very high initial confidence: In these instances, lawyers were extremely overconfident. These findings are consistent with a large body of literature documenting overconfidence in a range of judgments (theoretical explanations of miscalibration of confidence are discussed in Gigerenzer, Hoffrage, & Kleinbolting, 1991; Kahneman, Slovic, & Tversky, 1982; Moore & Healy, 2008)."



Goodman-Delahunty et al., "Insightful or Wishful: Lawyers' Ability to Predict Case Outcomes" (2010)

"With respect to the correlates of the overconfidence bias, certain results were somewhat counterintuitive, such as the finding that lawyers with more experience were not better calibrated than less experienced lawyers....

"With regard to gender, we replicated results obtained by Malsch (1990) that female lawyers were better calibrated than their male colleagues. Male practitioners were more overconfident than female practitioners. These findings are in line with gender differences observed in research on metacognition (Pallier, 2003)."



"Lottery Effect"

- (Some) people overweight small probabilities of reaping very large gains
- Manifestations
 - Playing lotteries (Scherer; Crouch)
 - People play lotteries, despite "house rake" of ~50%
 - A change in the amount of the payout will affect their willingness to participate much more than a change in probability of the payout
 - Amateur investors (Stout 1995)
 - Entrepreneurialism (Hopenhyn 2003; Astebro 2003)

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Scherer, "Innovation Lottery"



FIG. 1.8: Utility function consistent with buying insurance and betting in lotteries

