Bounded Rationality and IP

William Fisher
February 17, 2014
Rationality

1) Expected Utility Theory
2) Ubiquitous Forms of Bounded Rationality
3) Forms of Bounded Rationality specific to creators
Rationality

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

2) Ubiquitous Forms of Bounded Rationality

3) Forms of Bounded Rationality specific to creators
Standard Utility Curve

Source: Prakash, Enterprise and Individual Risk Management
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Source: http://economicsconcepts.com/total_utility_and_marginal_utility.htm
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Person is offered a bet:
-- odds: 50/50
-- if she wins, gains $2K
-- if she loses, forfeits $2K
Status quo

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Person is offered a bet:
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She refuses the bet.
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   a) Prospect Theory
   b) Endowment Effect
   c) Presence Heuristic
   d) Overoptimism
   e) Quantum class jumps

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Figure 3.—A hypothetical value function.

Source: Kahneman & Tversky, "Prospect Theory" (1979)
Source: Prakash, Enterprise and Individual Risk Management
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Estimated Probability of Competing in Athletics Beyond the High School Interscholastic Level

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Men's Basketball

- Less than one in 35, or approximately 2.9 percent, of high school senior boys playing interscholastic basketball will go on to play men's basketball at a NCAA member institution.
- Less than one in 75, or approximately 1.3 percent, of NCAA male senior basketball players will get drafted by a National Basketball Association (NBA) team.
- Approximately three in 10,000, or approximately 0.03 percent of high school senior boys playing interscholastic basketball will eventually be drafted by an NBA team.

Estimated Probability of Competing in Athletics Beyond the High School Interscholastic Level

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Football

- About 5.8 percent, or approximately one in 17, of all high school senior boys playing interscholastic football will go on to play football at a NCAA member institution.
- About 2.0 percent, or approximately one in 50, of NCAA senior football players will get drafted by a National Football League (NFL) team.
- Approximately nine in 10,000, or approximately 0.09 percent of high school senior boys playing interscholastic football will eventually be drafted by an NFL team.

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Fig. 1.8: Utility function consistent with buying insurance and betting in lotteries
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   a) Unusually strong version of “overoptimism”? 
   b) Are artists “skewness lovers”?
Scherer, “Innovation Lottery”

(b) Log normal distribution

Number of observations in value range

Value
Scherer, “Innovation Lottery”

(b) Log normal distribution

Musicians waiting tables in NY & LA

Clapton
Chris Anderson, “The Long Tail”

Source: http://www.thelongtail.com/about.html
“The theory of the Long Tail is that our culture and economy is increasingly shifting away from a focus on a relatively small number of "hits" (mainstream products and markets) at the head of the demand curve and toward a huge number of niches in the tail. As the costs of production and distribution fall, especially online, there is now less need to lump products and consumers into one-size-fits-all containers. In an era without the constraints of physical shelf space and other bottlenecks of distribution, narrowly-targeted goods and services can be as economically attractive as mainstream fare.”

Source: http://www.thelongtail.com/about.html
Scherer, “Innovation Lottery”

(b) Log normal distribution

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Scherer, “Innovation Lottery”

Musicians waiting tables in NY & LA

These are the (relatively few) folks who make the (relatively few) “hits”

Clapton
Scherer, “Innovation Lottery”

(b) Log normal distribution

Musicians waiting tables in NY & LA

These are the (many) folks who make the (large number) of unpopular works

These are the (relatively few) folks who make the (relatively few) “hits”

Clapton
Musicians waiting tables in NY & LA

These are the (many) folks who make the (large number) of unpopular works

These are the (relatively few) folks who make the (relatively few) “hits”

If Anderson is correct, we should see a shift toward a pattern like this.
Possible Implications for Copyright Law

1) Uncertainty may not be so bad (Horowitz)
2) Legal doctrine has (partial) control over the location of reference points – and thus how copyright owners and users value their entitlements
   -- Complication: reference points may not be fully complementary (e.g., wrt filesharing)
3) If creators are skewness lovers, we alter the current distribution pattern at our peril
4) Hyper-optimism of creators may be socially beneficial
   – Argument against “debiasing”
5) Difficulty of simultaneously capitalizing on the motivations of individual creators and motivations of employers (Scherer)
End