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# THE PSYCHOLOGY OF PREDATORY PRICING: WHY PREDATORY PRICING PAYS

by

Harry S. Gerla\*

**A**NTITRUST commentators and a number of courts have long regarded the antitrust laws as a defense against at least some forms of predatory pricing.<sup>1</sup> At present a debate is raging over how to determine when prices are predatory.<sup>2</sup> A number of scholars, however, have questioned the very need for the debate by positing that predatory pricing, however defined, is a rare phenomenon that need not absorb the attention of courts and antitrust scholars. These scholars question the prevalence of predatory pricing on the ground that for most firms to engage in predatory pricing is economically irrational.<sup>3</sup> According to these commentators, a firm that engages in the practice will suffer severe short-term losses by pricing

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1. See, e.g., *Utah Pie Co. v. Continental Baking Co.*, 386 U.S. 685, 702-04 (1967); *O. Hommel Co. v. Ferro Corp.*, 659 F.2d 340, 350-53 (3d Cir. 1981), *cert. denied*, 455 U.S. 1017 (1982); *Janich Bros. v. American Distilling Co.*, 570 F.2d 848, 852-55 (9th Cir. 1977), *cert. denied*, 439 U.S. 829 (1978); P. AREEDA & D. TURNER, 3 ANTITRUST LAW ¶¶ 711-720 (1978); L. SULLIVAN, ANTITRUST §§ 43, 220-221 (1977).

2. The literature on the proper definition of predatory pricing is voluminous. See, e.g., Areeda & Turner, *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act*, 88 HARV. L. REV. 697 (1975); Dirlam, *Marginal Cost Pricing Tests for Predation: Naive Welfare Economics and Public Policy*, 26 ANTITRUST BULL. 769 (1981); Joskow & Klevorick, *A Framework for Analyzing Predatory Pricing Policy*, 89 YALE L.J. 213 (1979); Scherer, *Predatory Pricing and the Sherman Act: A Comment*, 89 HARV. L. REV. 869 (1976); Williamson, *Predatory Pricing: A Strategic and Welfare Analysis*, 87 YALE L.J. 284 (1977).

For particularly useful summaries of the scholarly and court debates over the proper definition of predatory pricing, see Brodley & Hay, *Predatory Pricing: Competing Economic Theories and the Evolution of Legal Standards*, 66 CORNELL L. REV. 738 (1981); Hurwitz & Kovacic, *Judicial Analysis of Predation: The Emerging Trends*, 35 VAND. L. REV. 63 (1982).

The exact definition of predatory pricing is not vital to the main theses of this Article: (1) that from a psychological point of view, predatory pricing, however defined, is likely to be tempting to the management of firms under certain conditions; and (2) that the use of predatory pricing can deter the management of firms from bringing those firms into markets where such tactics have been utilized. This Article takes as its working definition of "predatory pricing" Professors Joskow and Klevorick's definition: "a reduction of price in the short run so as to drive competing firms out of the market or to discourage entry of new firms in an effort to gain larger profits via higher prices in the long run than would have been earned if the price reduction had not occurred." Joskow & Klevorick, *supra*, at 219-20 (footnote omitted).

3. R. BORK, THE ANTITRUST PARADOX 149-55 (1978); Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 263, 264-65 (1981); McGee, *Predatory Pricing Revisited*, 23 J.L. & ECON. 289, 294-300 (1980).

predatorily.<sup>4</sup> Even if a firm successfully eliminates a rival through predatory pricing, the firm can recoup its short-term losses only if it can raise prices over the long run.<sup>5</sup> If new rivals enter the market after the eradicated opponent leaves, recoupment will not be possible. Thus, for a firm to engage in predatory pricing is irrational in the absence of significant entry barriers.<sup>6</sup>

A number of antitrust commentators have attempted to respond to the challenge posed by those scholars who believe that predatory pricing is rare because it is not a viable business strategy.<sup>7</sup> While these attempts are often persuasive, they generally share a weakness with their putative targets: they accept the premise that firms are rational actors that seek to maximize their profits. The commentators who believe that predatory pricing is widespread, therefore, focus many of their efforts on attempting to demonstrate why predatory pricing, or the threat of such pricing, can be rational profit-maximizing conduct.<sup>8</sup>

Scholars who seek to explain predatory pricing in terms of rational profit-maximization ignore two very important facts: (1) firms, as entities, cannot act on their own; and (2) any actions by firms are, therefore, actions by the human beings who manage the firms.<sup>9</sup> Given these facts, the answer to whether firms will engage in predatory pricing should not necessarily be sought in the realm of economic theory, but may more appropriately be sought through the insights of experimental psychology. The data gathered by that discipline strongly suggests that while predatory pricing may or may not be rational profit-maximizing behavior, it is a response consistent with the general way in which human beings tend to respond to risk in real life.<sup>10</sup>

4. R. BORK, *supra* note 3, at 150-52; Easterbrook, *supra* note 3, at 268.

5. R. BORK, *supra* note 3, at 153; Easterbrook, *supra* note 3, at 274-75.

6. *See supra* note 3.

7. *See, e.g.*, Milgrom & Roberts, *Predation, Reputation, and Entry Deterrence*, 27 J. ECON. THEORY 280, 280-304 (1982); Posner, *Exclusionary Practices and the Antitrust Laws*, 41 U. CHI. L. REV. 506, 515-23 (1974); Yamey, *Predatory Price Cutting: Notes and Comments*, 15 J.L. & ECON. 129, 129-42 (1972).

8. *See supra* note 7. Not all commentators ignore the human dimension of predatory pricing. For example, in his treatise on antitrust law Professor Sullivan states:

The fact that predatory activity is costly to the predator and that there is only an uncertain prospect of adequate supra-competitive returns after others are excluded surely must reduce the frequency of predatory forays. It hardly follows that they never occur or can be safely ignored. Man's capacity for destructive conduct has never been totally inhibited merely because he stands himself in the target area along with his would-be victim.

L. SULLIVAN, *supra* note 1, § 43, at 110.

9. At least some economists are beginning to recognize that the decisions of individual, human managers determine a firm's actions. S. MAITAL, *MINDS, MARKETS, AND MONEY* 112-13 (1982); Leibenstein, *A Branch of Economics is Missing: Micro-Micro Theory*, 17 J. ECON. LITERATURE 477, 477 (1979).

10. *See infra* notes 12-61 and accompanying text. The word "tend" is used quite deliberately. Unlike economic theory with its simplifying assumptions, for example that persons will always act as rational utility maximizers, psychological theory is based upon direct observation of human beings. These human beings do not always act in a consistent manner. If in a psychological experiment an overwhelming majority, for example 86%, of subjects exhibit one of two possible responses, the psychologist does not deny the reality that the other 14% of the subjects responded differently. Thus, the psychologist cannot conclude that in real life the majority of persons will always respond as the majority of subjects in an experiment responded and cannot conclude that a person who responds in a manner consistent with the minority's

The experimental psychology data also suggests that given the typical human response to risk, a strategy of predatory pricing may prove successful.<sup>11</sup> This Article explores that data and applies it to the area of predatory pricing.

Specifically, the Article argues that predatory pricing is a psychologically tempting tactic for managers of firms that are losing market share and that the successful use of the tactic creates psychological entry barriers for new firms seeking to enter the market. The Article concludes by briefly exploring the applicability of the psychology of risk-taking to areas of antitrust law other than predatory pricing and by briefly discussing the utility of the entire field of experimental psychology to general questions of antitrust law.

### I. THE PSYCHOLOGY OF RISK-TAKING

Perhaps the best way to understand the applicability of the psychology of risk-taking to predatory pricing is through the following hypothetical case: The Acme Company has been the dominant firm in its field. Over the past year, however, its dominance and profits have been eroded by a newcomer, Upstart, Inc. Upstart has developed lucrative business by undercutting Acme's prices. The managers of Acme believe that Acme can regain its dominance by cutting its prices below cost and using Acme's larger resource base to outlast Upstart. Unfortunately for Acme's managers, this strategy is somewhat risky. Acme will surely lose profits while it engages in predatory pricing. Even if Acme successfully drives Upstart from the market, Acme may face legal consequences from its actions or, even worse, a new entrant may take Upstart's place in the market. On the other hand, Acme's managers do not relish the present situation because the steady erosion of the firm's profits is making the managers look incompetent. They are mired in a situation in which they must take some risks. The managers must accept either the risks of a predatory pricing strategy or the risks of the present profit erosion. The poor managers of Acme—what are they to do?

In the world of classical microeconomic theory the answer to the question is quite simple. The managers will weigh the monetary risks and gains from a strategy of inaction, discounted by the probability of the risks and the gains, against the potential risks and gains from a predatory pricing strategy, also discounted by the probability of the risks and the gains. The rational manager, *homo economicus*,<sup>12</sup> will pick the option that gives the firm the larger expected monetary reward.<sup>13</sup> Those commentators who question the

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response is a nonexistent creature. In sum, unlike economics, psychology is probabilistic and speaks of human tendencies rather than invariable rules of human behavior based upon dubious simplifying assumptions, which are often mere tautologies running contrary to empirical evidence, e.g., that persons usually act to maximize their income and personal utility. See L. THUROW, DANGEROUS CURRENTS 217-22 (1983).

11. See *infra* notes 32-61 and accompanying text.

12. *Homo economicus* (economic man) is the derisive term economist Lester Thurow uses for the hypothetical wealth and utility maximizing creature postulated by classical microeconomists. L. THUROW, *supra* note 10, at 224.

13. Cf. K. ARROW, ESSAYS IN THE THEORY OF RISK-BEARING 52-53 (1971) (persons are assumed to maximize their expected utility); F. SCHERER, INDUSTRIAL MARKET STRUCTURE

existence of predatory pricing maintain that the expected gains from not engaging in predatory pricing will usually exceed the expected gains from engaging in that strategy. The neat answer provided by microeconomic theory poses only one problem. Empirical research in psychology has consistently demonstrated that real human beings generally do not face risks in the manner expected of *homo economicus*.<sup>14</sup>

One of the paradoxes of both modern economics and psychology is that people seem to be concurrently averse to risk (risk averse) and fond of risk (risk affinitive). Americans spend billions of dollars on insurance, indicating risk aversion, and at the same time they spend billions of dollars on various types of legal and illegal gambling, indicating risk affinity.<sup>15</sup> One economist has aptly personified these seemingly contradictory attitudes toward risk in the form of the Las Vegas high roller who carries hundreds of thousands of dollars of insurance on his life.<sup>16</sup>

Although people bear seemingly inconsistent attitudes toward risk-taking, psychological experiments have shown that people tend to hold the inconsistent attitudes in a rather consistent manner. These studies have demonstrated that people tend to be risk averse with respect to gains but risk affinitive with respect to losses.<sup>17</sup> Humans apparently prefer to take the more certain smaller gain over the less probable larger gain.<sup>18</sup> At the same time, people seem to prefer taking the less probable large loss over the more certain small loss.<sup>19</sup> The following fairly typical experiment illustrates this phenomenon.

Subjects were told that they had been given \$1000. They were given a choice between a sure chance of gaining another \$500 or a 50% chance of gaining \$1000.<sup>20</sup> Mathematically each of the choices has the same expected value of \$500.<sup>21</sup> Nevertheless, 84% of the subjects chose to receive the certain \$500. Thus, in the case of potential gains, most subjects showed a strong risk aversion. The same subjects were then told that they had been given \$2000. They were offered a choice between a certain loss of \$500 and a

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AND ECONOMIC PERFORMANCE 29 (2d ed. 1980) (firms are assumed to maximize profits in classical microeconomics).

14. See *infra* notes 17-31 and accompanying text.

15. S. MAITAL, *supra* note 9, at 200-02, 204.

16. *Id.* at 203.

17. E.g., P. SCHOEMAKER, EXPERIMENTS ON DECISIONS UNDER RISK: THE EXPECTED UTILITY HYPOTHESIS 45-90, 109-25 (1980); Fishburn & Kochenberger, *Two-Piece Von Neumann-Morgenstern Utility Functions*, 10 DECISION SCI. 503, 503-17 (1979); Kahneman & Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 ECONOMETRICA 263, 263-89 (1980); Laughhunn, Payne & Crum, *Managerial Risk Preferences for Below-Target Returns*, 26 MGMT. SCI. 1238, 1247-49 (1980). The Laughhunn, Payne & Crum and Fishburn & Kochenberger studies are particularly interesting for purposes of studying the applicability of the psychological theory of risk-taking to predatory pricing because both studies used business managers as research subjects.

18. S. MAITAL, *supra* note 9, at 207-08.

19. *Id.*

20. Kahneman & Tversky, *supra* note 17, at 273.

21.  $500 \times 1$  (probability of winning) = 500 (expected value)  
 $1,000 \times .5$  (probability of winning) = 500 (expected value).

50% chance of losing \$1000.<sup>22</sup> Once again, the two choices were mathematically equal, with an expected loss of \$500 each.<sup>23</sup> Sixty-nine percent of the subjects chose to gamble on losing the \$1000 rather than take the sure loss of \$500.<sup>24</sup> Thus, the subjects, who were largely risk averse with respect to possible gains, showed a strong risk affinity in the case of a potential loss.

In the preceding example the terms of the experiment made clear whether the situation involved a gain or a loss. In real life whether a situation involves a gain or a loss depends on the mental framework of the actor.<sup>25</sup> Whether the actor looks at the situation as involving a gain or a loss can determine whether he is risk averse or risk affinitive. This effect was dramatically illustrated in an experiment performed by psychologists Amos Tversky and Daniel Kahneman. One hundred and fifty-two respondents were given the following problem:

Imagine that the U.S. is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimate of the consequences of the programs are as follows:

If Program A is adopted, 200 people will be saved.

If Program B is adopted, there is  $\frac{1}{3}$  probability that 600 people will be saved, and  $\frac{2}{3}$  probability that no people will be saved.

Which of the two programs would you favor?<sup>26</sup>

Seventy-two percent of the respondents opted for Program A and 28% chose Program B.<sup>27</sup>

A second group of 155 respondents received the same fact situation related in the preceding problem, but received two different options:

If Program C is adopted 400 people will die.

If Program D is adopted there is  $\frac{1}{3}$  probability that nobody will die, and  $\frac{2}{3}$  probability that 600 people will die.

Which of the two programs would you favor?<sup>28</sup>

Only 22% of the respondents picked Program C. The other 78% opted for Program D.<sup>29</sup> The two problems are effectively the same and the expected number of deaths under all four programs is the same (400).<sup>30</sup> Nevertheless, the vast majority of respondents in the first problem, which the experimenters framed in terms of gain, chose the smaller but surer gain of human life. The vast majority of respondents in the second problem, which

22. Kahneman & Tversky, *supra* note 17, at 273.

23.  $-500 \times 1$  (probability of losing) =  $-500$  (expected value)  
 $-1,000 \times .5$  (probability of losing) =  $-500$  (expected value).

24. Kahneman & Tversky, *supra* note 17, at 273.

25. Tversky & Kahneman, *The Framing of Decisions and the Psychology of Choice*, 211 SCIENCE 453, 453 (1981).

26. *Id.*

27. *Id.*

28. *Id.*

29. *Id.*

30. *Id.* Program A  $600 - (200 \times 1) = 400$  (deaths)  
 Program B  $600 - (600 \times \frac{1}{3}) = 400$  (deaths)  
 Program C  $400 \times 1 = 400$  (deaths)  
 Program D  $600 \times \frac{2}{3} = 400$  (deaths).

the experimenters framed in terms of loss, chose the riskier course with the potential for avoiding loss of life altogether.

In sum, people tend to display risk aversion toward potential gains and risk affinity toward potential losses. In either case, however, whether the actor frames the particular situation as a gain or loss situation will largely determine how much risk he will take.<sup>31</sup> The next step is to apply these insights to the area of predatory pricing.

## II. RISK-TAKING AND PREDATORY PRICING

As discussed in the preceding section, a person's attitude toward risk-taking will often depend on whether he views a situation as involving potential gains or losses. One must first inquire, therefore, how the managers of firms involved in situations in which they would be tempted to resort to predatory pricing view the situations in which they find themselves. To facilitate that inquiry, a review of predatory pricing's role in antitrust law is essential.

Most predatory pricing claims cognizable under the federal antitrust laws fall into one of two patterns. In the most typical pattern a dominant firm adopts a predatory pricing strategy in order to rid itself of a newcomer to the market.<sup>32</sup> The second pattern involves an attempt by a nondominant firm to gain control of a market through a strategy of predatory pricing.<sup>33</sup>

The predominance of these patterns is not caused by magic, but by the structure of the Sherman Act.<sup>34</sup> Concerted action is a prerequisite to violation of section 1 of the Sherman Act.<sup>35</sup> Predatory pricing is a game that can be played by one entity. The proscriptions of section 1, therefore, generally do not reach predatory pricing.<sup>36</sup> Section 2 of the Sherman Act, which forbids monopolization and attempts and conspiracies to monopolize, does reach unilateral conduct, including predatory pricing.<sup>37</sup> Monopolization, however, requires that the actor possess market power; attempted monopolization requires that the actor purposefully or knowingly seek such power.<sup>38</sup>

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31. Tversky & Kahneman, *supra* note 25, at 457-58.

32. The predatory pricing allegations in the various IBM cases fit into this category. See generally Sullivan, *Monopolization: Corporate Strategy, the IBM Cases, and the Transformation of the Law*, 60 TEX. L. REV. 587, 599-638 (1982) (discussing the IBM cases and their impact).

33. As Professors Brodley and Hay note, the domination of the oil refining industry gained by the Standard Oil trust is the classic paradigm of this situation. Brodley & Hay, *supra* note 2, at 741; see *Standard Oil Co. v. United States*, 221 U.S. 1 (1911).

34. 15 U.S.C. §§ 1-7 (1982).

35. *Id.* § 1. This section prohibits contracts, combinations, and conspiracies in restraint of trade. The shorthand designation for the three concepts is "concerted action." L. SULLIVAN, *supra* note 1, § 108.

36. *But see* *Western Concrete Structures Co. v. Mitsui & Co.*, No. 83-2464 (9th Cir. May 17, 1985) (suggesting conspiracy to price predatorily can be violation of § 1 of the Sherman Act).

37. 15 U.S.C. § 2 (1982).

38. *E.g.*, *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966) (requirement of market power for the offense of monopolization); *Times-Picayune Publishing Co. v. United States*, 345 U.S. 594, 626 (1953) (requirement of specific intent for attempted monopolization).

In theory other patterns can arise when predatory pricing involves price discrimination. Such actions may violate § 2(a) of the Robinson-Patman Act, which prohibits price discrimi-

Hence, predatory pricing cases brought under the Sherman Act involve as a defendant either a dominant firm or a firm seeking market domination.

#### A. Attempts to Retain Dominance

The first pattern, dominant firm versus newcomer, can be broken into two subpatterns: (1) cases in which the newcomer continues to erode the dominant firm's market position; and (2) cases in which the erosion caused by the newcomer has stabilized. The first subpattern, in which the newcomer causes continued erosion of the dominant firm's market share, is the subpattern represented in the hypothetical case that commenced the preceding section of this Article. The managers of the dominant firm in such a situation find themselves facing two disquieting alternatives: either continue to absorb the almost certain losses inflicted by the newcomer, or utilize the dominant firm's superior resources by engaging in a strategy of predatory pricing. The latter course is extremely risky. Predatory pricing will almost certainly accelerate the dominant firm's short-term losses. The strategy may not work. Even if the strategy works, new entrants may prevent the firm from recovering the money it lost while engaging in predatory pricing.<sup>39</sup> Thus, the predatory pricing strategy is a high risk course that offers the prospect of even more disastrous losses than the company is currently experiencing should the strategy fail. On the other hand, the predatory pricing strategy offers the prospect of reducing the losses caused by the interloper to zero and perhaps allowing the dominant firm to regain its former position and profits.

The choice facing the managers in the continued erosion subpattern is one between inaction leading to small but certain losses and action leading either to a complete reversal of losses or to a disastrous acceleration of current losses. The latter choice is riskier in terms of the consequences of failure. Will the managers be inclined to take the bigger risk? As indicated in the preceding section, the answer to this question largely depends on how the managers view the situation.<sup>40</sup> If they view the situation as one of weighing potential gains, they will tend to be risk averse and will opt for doing nothing, the alternative with smaller potential negative consequences. If the

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nation that lessens competition. 15 U.S.C. § 13(a) (1982). Even the cases brought under that section, however, tend to involve allegations of predatory pricing by dominant or would-be-dominant firms. *E.g.*, *Utah Pie Co. v. Continental Baking Co.*, 386 U.S. 685, 687-91 (1967) (allegation that several makers of major national brands of frozen pies conspired to take over Utah frozen pie market); *O. Hommel Co. v. Ferro Corp.*, 659 F.2d 340, 342 (3d Cir. 1981) (allegation that huge multinational corporation attempted to dominate enamel coating market), *cert. denied*, 455 U.S. 1017 (1982); *Pacific Eng'g & Prod. Co. v. Kerr-McGee Corp.*, 551 F.2d 790, 791-92 (10th Cir.) (allegation that dominant solid rocket fuel manufacturer attempted to eliminate its only competitor), *cert. denied*, 434 U.S. 879 (1977). Indeed, many allegations of violation of § 2(a) of the Robinson-Patman Act are coupled with allegations that the defendant also violated § 2 of the Sherman Act. *E.g.*, *Utah Pie Co. v. Continental Baking Co.*, 386 U.S. 685, 687 (1967); *William Inglis & Sons Baking Co. v. ITT Continental Baking Co.*, 668 F.2d 1014, 1023 (9th Cir. 1981), *cert. denied*, 459 U.S. 825 (1982); *O. Hommel Co. v. Ferro Corp.*, 659 F.2d 340, 342 (3d Cir. 1981), *cert. denied*, 455 U.S. 1017 (1982); *Pacific Eng'g Prod. Co. v. Kerr-McGee Corp.*, 551 F.2d 790, 791 (10th Cir.), *cert. denied*, 434 U.S. 879 (1977).

39. See Brodley & Hay, *supra* note 2, at 741.

40. See *supra* notes 12-31 and accompanying text.



managers view the situation as one of weighing potential losses, they will tend to display risk affinity and will opt for employing predatory pricing, the alternative that offers the chance of avoiding loss altogether.

The only reasonable surmise is that the managers of the dominant firm are apt to view the situation as a choice between a small but certain continuing loss and a risky option, predatory pricing, that provides the hope of avoiding loss altogether. In short, the managers are likely to view their situation as one involving potential losses rather than potential gains. In perceived loss situations people tend to be risk affinitive.<sup>41</sup> The managers of the dominant firm, therefore, are likely to be psychologically predisposed toward taking the riskier option, which in this case offers the chance of avoiding loss completely. Thus, the managers may engage in predatory pricing even if such a course would not rationally maximize the firm's revenues.<sup>42</sup>

The tendency to engage in predatory pricing is strongly reinforced by another widely recognized human psychological characteristic, the inability to estimate and weight probabilities accurately. Specifically, people tend both to overweight and overestimate small probabilities and to underweight and underestimate large ones.<sup>43</sup> Thus, even if a strategy of predatory pricing involves objectively small chances for success, managers deciding whether to implement such a strategy may view the chances of success as much higher than they really are. As noted above, the managers of a dominant firm faced with a choice between continued market share erosion and a predatory pricing gamble that may allow them to stem their losses are likely to be psychologically predisposed to gamble on predatory pricing even if such a tactic constitutes a long-shot. These gambling instincts are apt to be reinforced by the managers' overestimation of the probability of success of a predatory pricing strategy.<sup>44</sup>

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41. See *supra* notes 19-30 and accompanying text.

42. The study by Laughhunn, Payne & Crum, *supra* note 17, at 1247, indicates that individual managers are indeed risk-affinitive with respect to avoiding losses. One can object, however, that business decision-making is a group activity and, therefore, the psychology of individuals' reactions to risky situations does not apply to the decision of a firm whether to engage in predatory pricing. Those scholars who question the existence of predatory pricing may choose to argue that though individuals may tend to adopt a risky strategy of predatory pricing, the risk-averse nature of the group that makes the ultimate decision will cause the firm to eschew a high-risk strategy. Many people believe that "groups are in general more cautious and conservative than individuals." R. JONES, C. HENDRICK & Y. EPSTEIN, *INTRODUCTION TO SOCIAL PSYCHOLOGY* 358 (1979). Psychological research has demonstrated, however, that groups will often make riskier decisions than individuals. *Id.* at 359. This phenomenon is known as "risky-shift." *Id.* The phenomenon of risky-shift suggests that if a group makes the decision whether to engage in predatory pricing, the group will be even less repelled by the riskiness of the strategy than will an individual decision-maker.

43. S. MAITAL, *supra* note 9, at 210-11; Dale, *A Priori Probabilities in Gambling*, 183 *NATURE* 842, 842 (1959); Kahneman & Tversky, *supra* note 17, at 280-81. Overestimating refers to the process of guessing that the probability of an event's occurring is larger than it really is. Underestimating refers to the process of guessing that the probability of an event's occurrence is smaller than it really is. Overweighting is "giving small chances more weight than they deserve, even when the precise chances are correctly known." Underweighting is giving chances less weight than they actually deserve even when the precise chances are known. S. MAITAL, *supra* note 9, at 211.

44. Perhaps the one central analytical failing of the commentators who posit that predatory pricing will be a rare phenomenon is their failure to recognize two empirically demon-

The second subpattern, in which the market share erosion caused by the newcomer has stabilized, is more problematical than the continued erosion subpattern. For most persons the status quo serves as the basic psychological reference point.<sup>45</sup> Consequently, the managers of a dominant firm whose market share has stabilized will likely view predatory pricing as an opportunity for gain by wresting the newcomer's market share away from it, rather than an opportunity for avoiding loss. If the managers take this view, the psychological evidence suggests that they will tend to be averse to taking the risks incident to predatory pricing.<sup>46</sup>

Some psychological evidence, however, suggests that managers may not take the firm's existing market share as their point of reference in framing strategic choices, particularly if the market share has declined relatively recently.<sup>47</sup> Instead, the managers may adopt the firm's previous market share as their frame of reference. In the latter case the managers may view their choice as one between a certain loss of the market share already taken by the newcomer and a risky strategy designed to minimize loss by returning the firm to the old dominant market share. Under these conditions psychological evidence suggests that the managers are more likely to select the more adventuresome strategy, predatory pricing.<sup>48</sup>

A definitive answer as to how managers view their choices must await empirical research on management attitudes. One can reasonably speculate, however, that the key to determining whether managers will regard the re-taking of previously held market shares as a gain or an avoidance of loss lies with the phenomenon of adaptation.<sup>49</sup> As Professors Kahneman and Tversky point out, "[a] discrepancy between the reference point and the current asset position may . . . arise because of recent changes in wealth to which one

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strated facts. First, persons act with risk-affinity in trying to avoid losses. A great deal of the economic literature on predatory pricing implicitly assumes that firms are either risk-neutral or risk-averse. Judge Easterbrook, in his article on predatory pricing, makes these assumptions explicit. Easterbrook, *supra* note 3, at 275 n.24.

Second, persons make errors. As Professor Lester Telser has observed, the economic case against the prevalence of predatory pricing rests on the assumption that entrepreneurs will act rationally and intelligently. See Telser, *Cutthroat Competition and the Long Purse*, 9 J.L. & ECON. 259, 268 (1966). In other words, any resort to predatory pricing is likely to be caused by human error. In conventional microeconomic theory, human beings do not err. Conventional microeconomic theory simply does not recognize a theory of error. See Stigler, *The Xistence of X-Efficiency*, 66 AM. ECON. REV. 213, 213-16 (1976). The logical conclusion, given the postulate that predatory pricing is the result of error and the assumption that people do not err, is that predatory pricing should be relatively unusual. Of course, the assumption that people do not routinely make errors is absurd. Empirical psychological studies confirm what common sense suggests: people make many mistakes. People's perceptions and reality often differ greatly. These same psychological studies also establish that people make fairly consistent errors, for example by overestimating and overweighting small probabilities while underweighting large ones. See *supra* note 43. Perhaps Professor Telser was correct when he stated that predatory pricing is likely to be the result of errors in judgment. If Professor Telser was right, however, then predatory pricing may be fairly common since experimental psychology indicates that to err is indeed human.

45. Kahneman & Tversky, *supra* note 17, at 286.

46. See *supra* notes 19-30 and accompanying text.

47. See *infra* notes 49-54 and accompanying text.

48. *Id.*

49. Kahneman & Tversky, *supra* note 17, at 286-88.

has not yet adapted."<sup>50</sup>

The behavior of bettors at horse races is an excellent example of failure to adapt one's reference point in the face of recent financial losses. Experts on horse racing have long known that bettors are more willing to play long-shots at the end of a losing day of wagering than at the end of a winning day.<sup>51</sup> The existence of this phenomenon has been confirmed by at least two formal empirical studies.<sup>52</sup>

At first glance, this pattern of behavior seems to run counter to the theory that people tend to be risk averse with respect to gains but risk affinitive with respect to avoiding losses. If the losing player accepts his diminished bank-roll at the beginning of the last race as his reference point, then he will see the final race as an opportunity for gain and will tend to be risk averse. A player in a losing position at the end of the day, however, has precisely the opposite reaction. The losing player is willing to take even bigger gambles than he ordinarily would because he has not yet adapted to his losses. The losing player takes as his psychological reference point not the amount of money he actually has, but the amount he had at the beginning of the racing session.<sup>53</sup> The losing horseplayer views his choice in the last race not as one between potential gain and potential loss, but as one between a certain loss, the difference between what he had in the beginning and what he has now, and an opportunity to reduce or eliminate that loss. Under these circumstances, the bettor is more risk affinitive and thus has a tendency to bet more heavily on long-shots later in the racing day.<sup>54</sup>

The managers of a firm that has recently lost a significant portion of its market share to a newcomer may be in the same psychological position as the losing horseplayer. The managers may not have adapted to their losses. Thus, the managers may perceive their choice to be between accepting a sure loss of the difference between their previous and present market shares and adopting a risky strategy of predatory pricing that might allow them to totally avoid a loss. As indicated previously, persons are more inclined to take more risk to avoid a loss than to procure a gain. The predatory pricing option, therefore, may seem particularly attractive to the managers.

Managers of a firm and bettors at a racetrack differ, of course, in important respects. For example, managers do not operate within the same time-frame as racetrack bettors. The managers have more time to evaluate the firm's change of position and more time to take necessary action to rectify the situation. Nevertheless, the imperfections evident in the phenomenon of adaptation preclude positing a priori that managers of firms whose market shares have stabilized will inevitably view the chance to reacquire the firm's

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50. *Id.* at 286.

51. W. GIBSON, TWENTY-FIVE WAYS TO BEAT THE HORSES 48-49 (1967).

52. Asch, Malkiel & Quandt, *Racetrack Betting and Informed Behavior*, 10 J. FIN. ECON. 187, 193 (1982); McGlothlin, *Stability of Choices Among Uncertain Alternatives*, 69 AM. J. PSYCHOLOGY 604, 613, 615 (1956).

53. Tversky & Kahneman, *supra* note 25, at 456.

54. *Id.*

prior dominant share as an opportunity for gain and, therefore, be risk averse.

### B. Attempts to Establish Initial Dominance

The other major fact pattern in which predatory pricing may violate the antitrust laws involves the case of a new entrant or an existing participant attempting to achieve initial domination of a market. The capture of the petroleum refining market by Standard Oil from the 1870s to the early 1900s constitutes an important example of this use of predatory pricing. Professor McGee, in a seminal article on the Standard Oil case, first proposed the thesis that predatory pricing was an unusual phenomenon because of its fundamental irrationality.<sup>55</sup> The case Professor McGee chose to study was, from a psychological standpoint, precisely the instance in which predatory pricing is least likely to occur.

When the managers of a firm seek initial domination of a market, they in all likelihood perceive their goal as a potential gain. Given that managers view market domination as a gain rather than an avoidance of a loss, the managers are apt to be risk averse in pursuit of market domination.<sup>56</sup> Scholars who question the existence of predatory pricing are certainly correct with respect to one point: predatory pricing is a high-risk strategy.<sup>57</sup> High-risk strategies are precisely the type of strategy to which people seeking gains are averse.<sup>58</sup> Thus, the managers of a firm seeking new market domination are likely to avoid predatory pricing as a high-risk strategy in a potential gain situation.

The mere fact that the managers of a firm seeking initial market domination are psychologically predisposed to avoid risky strategies such as predatory pricing does not automatically preclude the use of the tactic in any situation. First, as this Article has repeatedly emphasized, empirical psychological evidence is probabilistic and speaks in terms of human tendencies rather than assumed invariable rules of behavior. The demonstrated risk aversion of gain seekers does not prevent the existence of a risk-affinitive gain seeker.<sup>59</sup> The managers of any firm that seeks initial market dominance may be among the minority of persons who display risk affinity when seeking gains.

Second, the pursuit of market domination is often a lengthy process. At some time during that process the reference point of the managers of the would-be monopolist may shift from the firm's actual market share to its

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55. McGee, *Predatory Price Cutting: The Standard Oil (N.J.) Case*, 1 J.L. & ECON. 137, 143 (1958).

56. See *supra* notes 17-19.

57. See *supra* note 39 and accompanying text.

58. See *supra* notes 18-19.

59. For example, in the experiment described *supra*, in the text accompanying notes 20-24, the overwhelming majority of subjects, 86%, proved to be risk-averse in a perceived gain situation. Nevertheless, the undeniable reality is that 14% of the subjects proved to be risk-affinitive even in search of gains. Moreover, the stories of successful entrepreneurs who have taken risks are too numerous to posit that all managers and entrepreneurs are risk-averse in search of gains.

desired market share.<sup>60</sup> The managers may then perceive the market that remains outside their firm's control not as an item to be gained, but as a loss suffered by the firm. This shift in perspective could make the managers risk-affinitive in pursuit of the remaining market and psychologically predisposed to adopt a gambling strategy such as predatory pricing. Nevertheless, the management of a firm seeking new market domination will probably be psychologically oriented toward eschewing predatory pricing and other risky strategies in favor of tactics that while perhaps not offering the size of gain that predatory pricing can yield, offer a greater certainty of gain.

Those critics who argue that the antitrust laws ought not to concern themselves with predatory pricing do not merely rely on the rationale that the practice is of little moment because rational firms would not engage in predatory pricing. The critics also argue that even if firms mistakenly attempt to engage in predatory pricing, the strategy will not achieve the desired monopolistic results. Instead, the only result in most cases will be a benefit to consumers who took advantage of the predatorily low price.<sup>61</sup> Experimental psychological evidence, however, also casts doubt on this point.

### III. THE PSYCHOLOGY OF RISK-TAKING: THE PUTATIVE VICTIM'S PERSPECTIVE

Many antitrust commentators argue that even if a firm irrationally adopts predatory pricing, rarely will an adverse effect on consumer welfare result. These commentators claim that the would-be victim or its customers can employ a number of strategies to foil a predatory pricing attack.<sup>62</sup> Even if these strategies fail, new entries into the market will ultimately frustrate any attempt to recoup through monopoly overcharges previous losses incurred in predatory pricing.<sup>63</sup>

These commentators view the aftermath of a predatory pricing struggle as almost the ideal environment for new entry into a market. First, the monopoly-level prices charged by the predator in order to recover its previous losses are likely to lure a new entrant into the market.<sup>64</sup> Second, the new entrant can often purchase the facilities of the defunct victim of predatory pricing at a fraction of market value, thereby enabling the entrant to produce at a lower marginal cost than the dominant predator.<sup>65</sup> Thus, according to these scholars, the only effect of predatory pricing on consumer welfare is the conferral of a unilateral windfall on consumers who took advantage of the low prices.<sup>66</sup>

Not surprisingly, other scholars have challenged these assertions. These

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60. Cf. Kahneman & Tversky, *supra* note 17, at 287 (recognizing that a shift in reference point is possible if an actor takes his ultimate goal as his reference point instead of the status quo).

61. See R. BORK, *supra* note 3, at 153-55; Easterbrook, *supra* note 3, at 269-76.

62. See *supra* notes 5-6 and accompanying text.

63. *Id.*

64. See Brodley & Hay, *supra* note 2, at 745.

65. Easterbrook, *supra* note 3, at 271-72.

66. R. BORK, *supra* note 3, at 153-55; Easterbrook, *supra* note 3, at 269-76.

scholars utilize two principal lines of attack. First, they claim that those commentators who question the efficacy of predatory pricing underestimate the barriers to entry, particularly the problem of raising capital, in the face of known predation.<sup>67</sup> Second, these critics maintain that the predatory pricing skeptics ignore the potential of strategic business moves on the part of the dominant predator, such as engaging in predatory pricing, specifically to deter new entry into a market.<sup>68</sup> Many of these critics specifically focus on a dominant firm's reputation as a predator as a deterrent to entry.<sup>69</sup>

The commentators who focus on a dominant firm's predatory reputation as an entry barrier note that such a reputation can deter entry in two situations. First, a reputation for predation can deter entry when the potential entrant "extrapolates from past events rather than sizing up the probabilities in each new situation."<sup>70</sup> Second, a reputation for predation can deter entry when assessment of the situation is impossible because an asymmetry of information exists between the potential new entrant and the predator, thus making the would-be new entrant's reliance on the predator's past behavior as a guide to future actions rational.<sup>71</sup>

The criticisms of the "entry is easy" thesis are convincing but incomplete.<sup>72</sup> Commentators putting forth these criticisms struggle too much in their attempts to prove that both predation and a decision not to enter a market in the face of such predation represent rational firm behavior. These critics once again ignore that firms do not enter markets: human beings acting as managers of firms, or perhaps as entrepreneurs, decide to bring firms into markets. Consequently, the decision to enter a market is a human one, and psychology should inform our inquiry into how managers view the prospects of entering a new market in which the dominant firm has successfully engaged in predatory pricing.

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67. *E.g.*, Joskow & Klevorick, *supra* note 2, at 227-31; Sullivan, *supra* note 32, at 622; see Brodley & Hay, *supra* note 2, at 742.

68. *E.g.*, Milgrom & Roberts, *supra* note 7, at 281; Posner, *supra* note 7, at 515-23; Sullivan, *supra* note 32, at 622.

69. See *supra* note 68.

70. F. SCHERER, *supra* note 13, at 339.

71. Milgrom & Roberts, *supra* note 7, at 302-03.

72. At the very least the models propounded by the critics of the "entry is easy" thesis establish that predation is not necessarily irrational and totally futile even in the hypothetical world of purely rational business firms created by classical microeconomists because such pricing practices can be winning strategies under certain circumstances. If the probability of success were zero, adoption by managers of a predatory pricing strategy would probably be inexplicable even in terms of the psychological mechanisms discussed in this Article. *Cf.* Laughhunn, Payne & Crum, *supra* note 17, at 1245-46 (64% of manager/subjects in study became risk averse in potential loss situations when faced with option of possible ruinous losses). The reason adoption of a predatory strategy might not be completely inexplicable is that other market participants may somehow be incapable of perceiving that the strategy has no chance of success. As those commentators who question the prevalence of predatory pricing frequently observe, courts and commentators assumed "erroneously" for almost half a century that monopolists practiced predatory pricing and used predatory pricing to maintain market power. See R. BORK, *supra* note 3, at 145; Easterbrook, *supra* note 3, at 265-66. If this belief is indeed erroneous, market participants and potential entrants are likely not immune from sharing the same misconception. Pursuit of a strategy that does not work in an atmosphere where the critical participants are convinced it will work is not at all inexplicable.

The psychological studies on decision-making under risk discussed earlier<sup>73</sup> suggest that managers may be hesitant to bring their firm into a market in which the dominant firm has employed predatory pricing strategies in spite of the supposed objective ease of entry. These studies complement the criticisms of the "entry is easy" theory by demonstrating that a decision not to enter a market in which predation has occurred does not necessarily indicate laziness, uncertainty, or failure to obtain complete information on the part of the would-be entrant. Rather, the decision not to enter a market in the face of known predation may result from the way in which human beings, provided with complete information, tend to process that information.

An extension of the hypothetical case posed in section I of this Article illustrates the psychological environment facing the managers of a firm considering whether to enter a new market in the face of previous predatory pricing: The Acme Company has successfully driven Upstart, Inc. out of the market through a strategy of predatory pricing. The campaign of predatory pricing has, however, cost Acme dearly in terms of revenues and profits. Acme is now in the process of recapturing its lost profits through monopoly overcharges. These overcharges have not gone unnoticed by the management of another firm, Newcomer, Inc. The conditions of entry look promising to the managers of Newcomer. The high prices in the market appear attractive. Newcomer can enter the market much more cheaply now than before due to the availability of Upstart's old facilities at a bargain price. Because it can obtain Upstart's former plant at a bargain, Newcomer can produce at a lower marginal cost than Acme. Moreover, Newcomer's only opponent in the market, Acme, is still suffering the wounds from its previous predatory pricing battle.

On the other hand, entering the market is far from a sure bet for the management of Newcomer. Capital costs may be higher than anticipated because of the dominance of Acme and its previous predatory pricing. Newcomer has no experience in the industry. Until Newcomer comes up to speed on the industry learning curve it may not be able to exploit fully its marginal cost advantage over Acme. Most worrisome is the possibility that Acme may once again resort to a strategy of predatory pricing in the face of Newcomer's entry. Newcomer's managers believe that because of their lower marginal costs they can probably beat Acme at its own game if Acme resorts to predatory pricing. They are not, however, pleased with the prospect of a price war. A predatory pricing battle would certainly hurt short-run profits and cause Newcomer's shareholders to become restless. As an alternative to entering Acme's market, the managers of Newcomer can make other investments, such as expanding current capacity or entering into more closely related industries. These possibilities, while not promising the potential returns of entering into Acme's market, do not entail the risk of triggering a predatory pricing war. What are the managers of Newcomer to do?

Once again, one must first determine whether the managers view the op-

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73. See *supra* notes 17-31 and accompanying text.

portunity to enter the market as an opportunity for gain or for loss avoidance. Rationally, the managers should view an entry into a new market as an opportunity for gain. The managers thus will likely have a corresponding psychological predisposition of risk aversion.<sup>74</sup> Persons seeking gains have a psychological tendency to eschew the high risk, high return proposition in favor of a certain gain, low return proposition.<sup>75</sup> The successful use of predatory pricing in a market creates at least the perception, if not the reality, that entry into the market is a very high risk strategy involving a potentially high return. If managers are similar to other humans, they will be predisposed to adopt a strategy that offers a more certain reward even if the ultimate payoff is smaller.<sup>76</sup> Thus, the managers may opt to increase their investment in their current field or in a closely related field rather than risk entry into a market dominated by a known predator.

Any tendency of the managers toward caution will be strongly reinforced by the tendency of most people to overestimate and overweight small probabilities and to underestimate and underweight large ones.<sup>77</sup> Even if the risks of a successful second use of predatory pricing are small, the managers of the firm seeking entry are likely to exaggerate them. Conversely, even if the prospects for success in new entry are large, the managers are likely to diminish them. These tendencies make a decision in favor of entry even less likely. In sum, the successful use of predatory pricing against a rival creates psychological barriers to new entry in a market. These barriers may prevent the managers of a firm from entering the market even in cases where

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74. See *supra* note 18 and accompanying text.

75. *Id.*

76. See *supra* notes 41-43 and accompanying text. At first glance, the phenomenon of risky-shift appears to suggest that if a group of managers made the decision, they might be more willing to bear the risks incident to entering a market in which successful predatory pricing has occurred because groups tend to be more risk-affinitive than individuals. Actually, psychological research indicates that a group deciding whether to enter a market in the face of successful predatory pricing may be more risk-averse than an individual making a similar decision. When work on risky-shift was first done in the early 1960s most of the data indicated a shift toward more risky decisions on the part of groups. Even in those early studies, however, some data indicated that groups sometimes make more cautious decisions than the members would make individually. Pruitt, *Choice Shifts in Group Discussion: An Introductory Review*, 20 J. PERSONALITY & SOC. PSYCHOLOGY 339, 339 (1971). Later studies indeed indicated that group discussion can lead to what is called a "cautious shift." Stoner, *Risky and Cautious Shifts in Group Decisions: The Influence of Widely Held Values*, 4 J. EXPERIMENTAL SOC. PSYCHOLOGY 442, 443-46 (1968) (discussing a number of the later studies); Teger & Pruitt, *Components of Group Risk Taking*, 3 J. EXPERIMENTAL SOC. PSYCHOLOGY 189, 198-99 (1967). Eventually, experiments established that "discussion tends to increase risk taking on items where the predominant initial response tendency is in the risky direction, and tends to enhance caution on items which tend to elicit cautious initial responses." Myers & Bishop, *Enhancement of Dominant Attitudes in Group Discussion*, 20 J. PERSONALITY & SOC. PSYCHOLOGY 386, 386 (1971).

The phenomenon of "cautious shift" suggests that a group of managers is even less likely than an individual manager to decide to enter a market in the face of a known predator. Individually, the managers are apt to be risk-averse in deciding whether to enter the market. Given the predominance of cautious attitudes on the part of the managers, group discussion is likely to create a cautious shift and make the managers collectively more risk-averse and even less willing to enter the market.

77. See *supra* note 43.



microeconomic theory, with its assumptions of rationally behaving, profit-maximizing firms, might suggest that entry could be very profitable.

In addition to creating direct psychological barriers to market entry, the use of predatory pricing can psychologically reinforce an entry barrier that is normally thought of as purely economic: the need to raise capital. The decision to invest money in a firm about to enter a new market bears two important similarities to the decision to bring the firm into the market. First, both decisions put valuable resources at risk in search of gain. Second, both decisions are ultimately made by human beings. Given these two similarities, the psychology of risk-taking should be highly relevant in exploring how investors will react to the prospect of investing in a firm that seeks to enter a market dominated by a predatory pricer.

Basic economic theory provides that increased risk is reflected in an increased cost of capital.<sup>78</sup> Thus, to the extent that predatory pricing makes market entry riskier, it will increase the cost of raising capital to enter the market. Psychological theory provides the additional insight that a little increase in risk through exposure to predatory pricing can pay disproportionately large dividends in terms of making capital raising more difficult or expensive.

Psychological theory establishes that persons seeking gains tend to be risk-averse<sup>79</sup> and will avoid gambles that objectively involve less than even odds.<sup>80</sup> Since most investors seek positive gains rather than avoidance of losses, capital markets tend to be risk-averse.<sup>81</sup> To the extent that predatory pricing increases the perceived risks to new market entrants, it plays on the psychological tendency of investors to be risk-averse. An increase in risk can cause a large number of potential investors to choose not to invest or to demand a greater risk premium for their investment than the objective amount of additional risk warrants. In effect, the creation of a small amount of additional perceived risk through exposure of the firm to a dominant firm's use of predatory pricing can substantially shrink the market of potential investors in the new entrant. Moreover, the increase in risk need not be factually substantial to dissuade potential investors. Given the human psychological tendency to overweight and overestimate small probabilities and to underweight and underestimate large ones, investors are likely to overestimate and overweight the dangers posed by predatory pricing and to underweight and underestimate the potential benefits of the firm's entry into the new market.<sup>82</sup> Reasoning from the previously discussed principles of human psychology, a little predatory pricing can go a long way in making capital-raising difficult for new market entrants.

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78. See R. POSNER, *ECONOMIC ANALYSIS OF LAW* 316 (2d ed. 1977); L. RITTER & W. SILBER, *PRINCIPLES OF MONEY, BANKING, AND FINANCIAL MARKETS* 446-48 (2d ed. 1977).

79. See *supra* notes 17-18 and accompanying text.

80. S. MAITAL, *supra* note 9, at 200.

81. *Id.* at 224.

82. See *supra* note 43 and accompanying text.

## IV. ARE MANAGERS DIFFERENT FROM THE REST OF US?

Much of this Article assumes that the psychological profile of managers, and to a certain extent investors, does not differ significantly from that of the general population in terms of their attitudes toward risk-taking. Those scholars who question the existence of predatory pricing may challenge this assumption. They may argue that managers are more risk-affinitive than the general population and, therefore, are more likely to accept the risk of entering a new market in the face of a known or reputed predator.

Both popular literature and pre-1960s economic literature enshrine the concept of the entrepreneur as the daring risk-taker.<sup>83</sup> This portrait may greatly exaggerate the risk-affinity of entrepreneurs and may be completely wrong with respect to modern American business executives. In recent years American management has come under heavy criticism for its unwillingness to innovate and to take risks.<sup>84</sup> Both American commentators and foreign managers have criticized American executives for their reluctance to depart from the known path.<sup>85</sup> As economist Shlomo Maital observed: "In the age of daring entrepreneurship, managers were socialized to incur risk; now, [they] are known only for . . . risk aversion."<sup>86</sup> If these commentators paint an accurate portrait, then managers may actually be more risk-averse than the general population. Under these conditions the increased risk caused by successful predatory pricing may be more than sufficient to deter super-cautious managers from bringing their firms into a new market.

Although the observation that United States managers are as risk-averse or even more risk-averse than the general population appears to undermine the thesis of the first part of this Article that managers will be psychologically predisposed to adopt risky predatory pricing strategies when the managers are attempting to avoid losses, the observation and the thesis are not actually inconsistent. The actions or, more precisely, inactions that have led critics to claim that American management is risk-averse are generally failures to expand into new markets, to adopt new production techniques, or to carry out product innovation.<sup>87</sup> All of these failures involve situations in which the managers are likely to view their strategic business choices as potential gain situations. For example, a manufacturer may face a choice be-

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83. See, e.g., B. KNIGHT & L. HINES, *ECONOMICS* 142-43 (1952); E. MORGAN, *A FIRST APPROACH TO ECONOMICS* 35-36 (1963); cf. B. SELIGMAN, *MAIN CURRENTS IN MODERN ECONOMICS* 661-62 (1971) (tracing the notion of the entrepreneur as risk-bearer from the work of economists Frank H. Knight and Maurice Dobb). For a popularized view of the entrepreneur as risk-taker, see generally G. GILDER, *WEALTH AND POVERTY* (1981). Ironically, the consensus of economic thought in the past two decades is that entrepreneurs are risk-avoiders rather than risk-takers. K. ELZINGA & W. BREIT, *THE ANTITRUST PENALTIES* 126-29 (1976).

84. E.g., Bowen, *How to Regain our Competitive Edge*, *Fortune*, Mar. 9, 1981, at 74, 84; Fallows, *American Industry: What Ails It, How to Save It*, *THE ATLANTIC MONTHLY*, Sept. 1980, at 35, 44-45; Hayes & Abernathy, *Managing Our Way to Economic Decline*, *HARV. BUS. REV.*, July-Aug. 1980, at 67, 72.

85. See *supra* note 84.

86. S. MAITAL, *supra* note 9, at 234-35 (quoting Thurow, *Productivity: Japan's Better Way*, *N.Y. Times*, Feb. 8, 1981, at 5, col. 1).

87. Bowen, *supra* note 84, at 84; Hayes & Abernathy, *supra* note 84, at 72.

tween adopting an innovative technology for its new product or retaining its tried and true formula. The manager is apt to view such a situation as a choice between a risky but potentially very profitable option, the product innovation, and an option that promises smaller but more certain profits, that of retention of traditional methods.<sup>88</sup> If the manager follows the psychological tendencies of most people, he will choose the less risky option.<sup>89</sup>

The thesis of the first half of this Article posited that managers are psychologically oriented toward utilizing risky predatory pricing strategies in situations that they view as potential losses, as for example when their firm's market dominance is threatened. From a psychological point of view, that situation differs completely from the situations in which critics claim that contemporary American managers are unduly risk-averse. In the latter situations the managers are contemplating the production of gains rather than the avoidance of losses. The findings of experimental psychology indicate that the same people who are risk-averse with respect to gains will be risk-affinitive with respect to avoiding losses.<sup>90</sup> Thus, the conclusion that managers may be willing to adopt risky predatory pricing strategies in some instances is not inconsistent with the observation that American managers tend to be risk-averse.

#### V. THE PSYCHOLOGY OF RISK-TAKING AND PREDATORY PRICING: THE POLICY IMPLICATIONS

The psychology of risk-taking has several important policy implications for the law of predatory pricing. Most importantly, the psychology of risk-taking suggests that one cannot categorically deny the existence of predatory pricing, on either the basis that to engage in the practice is irrational or the basis that even if a firm engages in predatory pricing, new entry will render the firm's efforts nugatory. Despite the teachings of classical microeconomic theory, data from the discipline of experimental psychology suggests both that some managers will be tempted to utilize predatory pricing and that a significant number of other managers will be deterred from bringing their firms into a market that has been subjected to such tactics. Neither courts nor commentators should, therefore, ever refuse to examine claims of predatory pricing on the grounds that the practice does not exist or occurs so rarely that the effort to search for it is not worthwhile.<sup>91</sup>

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88. The classic example may be the American automobile industry's stubborn refusal to adopt innovations such as fuel injection, independent rear suspensions, and disc brakes until the industry was pushed to the brink of ruin by European and Japanese competitors using these innovations. American firms insisted upon using traditional carburated engines, solid-beam rear suspensions, and drum brakes. *See generally* B. YATES, *THE DECLINE AND FALL OF THE AMERICAN AUTOMOBILE INDUSTRY* 199-215 (1983) (discussing American industry's technological lag during the 1970s).

89. *See supra* notes 17-18 and accompanying text.

90. *See supra* note 17.

91. The conclusions derived from experimental psychology directly contradict the claim made by some antitrust commentators that predatory pricing is so rare that the game of searching for it is simply not worth the candle. *See supra* note 3 and accompanying text. Neither should courts and commentators dismiss out-of-hand the fear of predatory pricing as a

Once one establishes the existence of predatory pricing, one must address the issue of its precise definition. Unfortunately, the psychology of risk-taking does not bear directly on the question of which competing definition of predatory pricing should be utilized.<sup>92</sup> The psychology of risk-taking, however, does pertain to some of the particular standards for predatory pricing that courts and commentators have advanced.

If courts adopt a pure cost standard such as the Areeda-Turner standard,<sup>93</sup> then psychological considerations will play virtually no role in determining whether an actor has engaged in the practice of predatory pricing.<sup>94</sup> The trend among antitrust courts, however, is to reject pure cost-based tests, at least in cases in which a firm's prices are below its average total cost.<sup>95</sup> Specifically, many courts now presume that prices that are between a firm's average variable costs and its average total costs are lawful, but allow the plaintiff to establish that the prices are in fact predatory by demonstrating the existence of significant barriers to market entry.<sup>96</sup>

Courts that have emphasized the existence of entry barriers undoubtedly have traditional economic barriers in mind. Nevertheless, psychological factors should play an important role in determining whether significant barriers

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valid basis for government regulation of certain industries. Professors Gellhorn and Pierce provide an example of such casual dismissal in their volume on regulated industries. They dismiss the avoidance of predatory pricing as a justification for imposing minimum rate regulation on the grounds that such pricing is a "chimerical" concern because the practice is irrational. E. GELLHORN & R. PIERCE, REGULATED INDUSTRIES IN A NUTSHELL 263-64 (1982) (citing Easterbrook, *supra* note 3, and McGee, *supra* note 55). Although one might believe that the best method of dealing with predatory pricing is through the antitrust laws rather than through direct government regulation, see S. BREYER, REGULATION AND ITS REFORM 159-60 (1982), or that the cure provided by minimum rate regulation is worse than the disease of predatory pricing, this Article establishes that one cannot legitimately dismiss allegations of predatory pricing on the basis of theoretical microeconomic models. Professors Gellhorn and Pierce have made precisely that mistake.

92. *But see* H. HOVENKAMP, ECONOMICS AND FEDERAL ANTITRUST LAW 172 (1985). Professor Hovenkamp hypothesizes that a judicial belief that predatory pricing occurs only infrequently has led courts to adopt stricter tests for predatory pricing. If Professor Hovenkamp is correct, then the evidence presented by experimental psychology may lead courts to adopt a more liberal standard by convincing them that such pricing practices are more common than microeconomic models would predict.

93. Professors Areeda and Turner, in their antitrust law treatise, argue that prices above "reasonably anticipated" average variable costs should be presumed lawful and that prices below average variable costs should be conclusively presumed unlawful. P. AREEDA & D. TURNER, *supra* note 1, ¶ 711(d). In their original article on predatory pricing, Areeda and Turner suggested that prices above average variable cost be conclusively presumed lawful. Areeda & Turner, *supra* note 2, at 733.

94. Presumably, a firm's prices are above, below, or at that firm's average variable (or total) costs regardless of the psychological mindset of the would-be predator or its putative victims.

95. *E.g.*, William Inglis & Sons Baking Co. v. ITT Continental Baking Co., 668 F.2d 1014, 1035 (9th Cir. 1981), *cert. denied*, 459 U.S. 825 (1982); Chillicothe Sand & Gravel Co. v. Martin Marietta Corp., 615 F.2d 427, 431-32 (7th Cir. 1980) (rejecting pure cost-based tests).

96. *See generally* Hurwitz & Kovacic, *supra* note 2, at 102-08 (discussing case law). Some courts go even further and allow a plaintiff a theoretical opportunity to establish that prices above a firm's average total costs are predatory. Transamerica Computer Co. v. International Business Machines Corp., 698 F.2d 1377, 1387 (9th Cir.), *cert. denied*, 104 U.S. 370 (1983). *Contra* Arthur S. Lagenderfer, Inc. v. S.E. Johnson Co., 729 F.2d 1050, 1056 (6th Cir. 1984); Wright Corp. v. ITT Grinnell Corp., 724 F.2d 227, 235-36 (1st Cir. 1983).

ers to market entry exist. Specifically, antitrust plaintiffs and courts should consider whether the utilization of pricing tactics that potential market entrants perceive as predatory have created a psychological barrier to market entry by playing on the tendency of managers to be risk-averse in seeking gains.<sup>97</sup> In this respect, survey research evidence can be particularly useful to an antitrust court.<sup>98</sup>

A number of commentators have urged that courts adopt an intent standard in defining predatory pricing.<sup>99</sup> The gravamen of the intent approach is a judgment as to whether the firm adopted its pricing policies for the subjective purpose of excluding competitors from the market. Under this approach the psychology of risk-taking may seem to be irrelevant. The advocates of an intent approach, however, are really advocating a rule of reason approach to predatory pricing. These advocates suggest that courts should judge pricing policies by balancing gains to consumers against the long-run harm to the competitive process, including the creation of barriers to market entry.<sup>100</sup> Under these circumstances, the psychological barrier created by what potential market entrants perceive as predatory pricing will be highly relevant to the court's analysis for the same reasons that it is relevant to any analysis of market entry barriers.<sup>101</sup>

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97. The use of the term "perceive" is quite deliberate and important. As economist Shlomo Maital has noted:

How we perceive the credibility of government, the anticipated behavior of others, and a wide range of other variables, and not the actuality of those variables, is what in the end determines behavior. Economics must realign its theories and premises to take into account perception and the frequent and systematic diversion of perception from reality.

S. MAITAL, *supra* note 9, at 269-70.

98. The utilization of survey research would undoubtedly horrify most economists even though the technique is second-nature to most other social scientists. The hostility of economists to such research has been described by one economist in the following terms:

Unlike other social scientists, economists are extremely hostile to words, questionnaires and other self-descriptions. . . . One can literally get an audience of economists to laugh out loud by proposing ironically to send out a questionnaire on some disputed economic point. Economists are so impressed by the confusions that might possibly result from questionnaires that they abandon them entirely, in favor of the confusions resulting from external observation. They are unthinkingly committed to the notion that only the externally observable behavior of economic actors is admissible evidence in arguments concerning economics. . . . Foolish inquiries into motives and foolish use of human informants will produce nonsense. But this is also true of foolish use of the evidence more commonly admitted into the economist's study.

McCloskey, *The Rhetoric of Economics*, 21 J. ECON. LITERATURE 481, 514 (1983).

99. NATIONAL COMMISSION FOR THE REVIEW OF ANTITRUST LAWS AND PROCEDURES, REPORT TO THE PRESIDENT AND THE ATTORNEY GENERAL 150 (1979); L. SULLIVAN, *supra* note 1, § 43, at 111.

100. Dirlam, *Predatory Pricing and Antitrust Policy: Economic Theory and the Quest for Certainty*, in ECONOMIC REGULATION: ESSAYS IN HONOR OF JAMES R. NELSON 197, 216 (K. Boyer & W. Shepherd eds. 1981); Sullivan, *supra* note 32, at 631-37; see also Scherer, *supra* note 2, at 873-75 (advocating a rule-of-reason standard without any special emphasis on subjective intent).

101. See *supra* notes 96-97 and accompanying text.

VI. THE PSYCHOLOGY OF RISK-TAKING AND ANTITRUST LAW:  
BEYOND PREDATORY PRICING

This Article has focused on the utility of the psychological theory of risk-taking to issues of predatory pricing. The theory also applies to virtually any antitrust area that involves efforts on the part of one firm to deter various types of behavior on the part of other firms. A detailed exploration of these areas exceeds the scope of this Article. A discussion of two such areas, group boycotts and the adequacy of antitrust penalties, will nevertheless serve to illustrate potential utility of the psychological theory of risk-taking to these other areas.

For purposes of this Article, a group boycott is an effort by traders to injure a competitor by cutting him off from his customers or sources of supply.<sup>102</sup> In *Klor's v. Broadway-Hale Stores* the Supreme Court held that such boycotts constitute per se violations of section 1 of the Sherman Act.<sup>103</sup> The *Klor's* case involved a claim by a small retailer, Klor's, that a large competitor, Broadway-Hale Stores, conspired with appliance manufacturers to cut off Klor's or to sell appliances to Klor's only at disadvantageous terms.<sup>104</sup> The district court granted summary judgment for the defendants on the ground that hundreds of other appliance dealers remained to compete with Broadway-Hale Stores.<sup>105</sup> In reversing the district court's entry of summary judgment the Court held that the facts stated in Klor's complaint, if proven, constituted a per se illegal group boycott.<sup>106</sup>

In recent years the *Klor's* decision has received heavy criticism from anti-trust commentators and at least one lower court. These critics maintain that a group boycott should not constitute a violation of the antitrust laws unless the plaintiff proves an adverse effect on competition, defined as an effect on product price, output, or quality.<sup>107</sup> Under such a standard, even the conduct of the defendant in *Klor's* may not cause the requisite effect. On the surface the facts in *Klor's* do not indicate that the alleged conspiracy in the case had any impact on price, output, or product quality. The defendants noted and the district court agreed that hundreds of dealers remained to compete with Broadway-Hale even after Klor's was eliminated from the market.<sup>108</sup>

The psychology of risk-taking suggests that the elimination of Klor's nevertheless may have had a substantial impact on the market. The surviving dealers may have perceived their choices after Klor's dissolved to be: (1) to reduce their aggressive price-cutting behavior and continue to reap profits, albeit on a diminished scale; or (2) to continue their present competitive

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102. L. SULLIVAN, *supra* note 1, § 83, at 230, 232.

103. 359 U.S. 207, 211-12 (1959).

104. *Id.* at 209-10.

105. *Id.* at 210-11.

106. *Id.* at 211-12.

107. *Cascade Cabinet Co. v. Western Cabinet & Millwork, Inc.*, 710 F.2d 1366, 1373 (9th Cir. 1983); *Products Liab. Ins. Agency v. Crum & Foster Ins. Co.*, 682 F.2d 660, 663 (7th Cir. 1982); R. BORK, *supra* note 3, at 331-32; H. HOVENKAMP, *supra* note 92, at 277-78.

108. 359 U.S. at 209-10.

policy and thereby maintain profits at present levels while risking a fate similar to Klor's and the loss of all profits. If the surviving merchants viewed the situation as one involving potential gains, they would most likely opt for the first alternative, the more certain small gain.<sup>109</sup> Under these circumstances, the elimination of Klor's may not have presaged the wholesale elimination of the remaining competitors,<sup>110</sup> but may have set a disciplinary example that led the survivors to curb their aggressive competition to a degree sufficient to improve Broadway-Hale Store's revenues.<sup>111</sup>

The antitrust laws have a disciplinary end: to deter persons from engaging in anticompetitive behavior. Given that the antitrust laws seek to impose a form of discipline on firms and individuals, the psychology of risk-taking should be highly relevant to questions of what sanctions will effectively deter violations of those laws.

Commentators over the past two decades have developed a large body of literature on the optimal level of deterrence as predicted by microeconomic models.<sup>112</sup> Although much of the initial work in the field related to the area of criminal law, the commentary on optimally effective antitrust sanctions has increased.<sup>113</sup> One facet of this antitrust literature is both fascinating and disturbing. The authors uniformly assume that the persons whom the law seeks to deter are either risk-neutral or risk-averse.<sup>114</sup> This assumption is

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109. Of course, the merchants could have viewed their choices as between: (1) the certainty of losing some of their present profits if they cut back on their aggressive competition; or (2) the remote possibility of losing all their profits if Broadway-Hale Stores selected them as its next target. Viewed in this way, the choices involve an avoidance of losses. Under these circumstances the merchants would likely be risk-affinitive and, thus, would likely risk the possibility of a loss of all their profits in order to avoid the certainty of a loss of some of their profits. This scenario suggests that any deterrent effect of the alleged move by Broadway-Hale against Klor's may have been minimal.

The point of this discussion is not whether the alleged boycott in *Klor's* had an anticompetitive effect. The point that this Article is trying to make is that any examination of the effects of a particular practice on competition that fails to consider carefully the impact of the practice on the psychological outlook of actual and potential competitors is seriously flawed.

110. Justice Black in his opinion for the Court implied that Broadway-Hale's actions may have threatened to create a monopoly by driving small businessmen out of business "one at a time." 359 U.S. at 213. Justice Black seemed to believe in some sort of domino theory.

111. The court of appeals' opinion in *Klor's* noted that the plaintiff did not charge or prove either that any act of the defendants had affected the price, quantity, or quality of goods offered to the public or that the defendants had actually intended to affect prices, quality, or quantity. *Klor's v. Broadway-Hale Stores, Inc.*, 255 F.2d 214, 230 (9th Cir. 1958), *rev'd*, 359 U.S. 207 (1959). This lack of allegation or proof is inconsistent with the disciplinary effect theory. On the other hand, such a disciplinary effect might simply have been too difficult for the plaintiff to prove.

112. *E.g.*, Hahn, *Crime and the Cost of Crime: An Economic Approach*, in *THE ECONOMICS OF CRIME AND LAW ENFORCEMENT* 92 (L. McPheters & W. Strong eds. 1976); Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169, 171-72 (1968); Ehrlich, *Participation in Illegitimate Activities: A Theoretical and Empirical Investigation*, 81 J. POL. ECON. 521, 524 (1973). For a critique of the economic model of criminal deterrence, see E. SUTHERLAND & D. CRESSEY, *CRIMINOLOGY* 336-39 (10th ed. 1978).

113. *E.g.*, K. ELZINGA & W. BREIT, *supra* note 83, at 112-48; Block & Sidak, *The Cost of Antitrust Deterrence: Why Not Hang a Price Fixer Now and Then?*, 68 GEO. L.J. 1131, 1138-39 (1980); Easterbrook, *supra* note 3, at 318-33; Schwartz, *An Overview of the Economics of Antitrust Enforcement*, 68 GEO. L.J. 1075, 1075-76 (1980); Note, *Rethinking Antitrust Damages*, 33 STAN. L. REV. 329, 330-31 (1981).

114. Block & Sidak, *supra* note 113, at 1135; Easterbrook, *supra* note 3, at 322, 324 n.132.

totally untenable in light of the psychological data discussed above, which indicates that humans tend to be risk-affinitive in situations involving the avoidance of losses.<sup>115</sup>

The tendency of humans to gamble in their attempts to avoid losses ought to have a profound impact on any consideration of what sanctions are necessary to deter violations of the antitrust laws. For instance, a firm that views its choices as either losing its market domination or violating the antitrust laws and thereby risking antitrust penalties may engage in the illegal practice. This possibility exists even though the gains from engaging in the monopolistic practice are far less than the potential antitrust penalties discounted by the probability of successful detection and prosecution. The psychological evidence detailed in this Article strongly suggests that the relatively large size of the antitrust penalties compared to the gains from the illegal practice probably will not matter to the potential violator so long as he views the alternative to the penalties to be a certain loss. The penalties needed to deter a person trying to avoid a loss must, therefore, be increased dramatically or, perhaps even better, the certainty of being penalized must be increased.<sup>116</sup> One can also conceive of a number of plausible scenarios that would require a less severe penalty because the actor views his choices as ones involving potential gains and, therefore, is risk-averse.<sup>117</sup> The important conclusion from the preceding observations is not whether one must utilize increased or decreased penalties to deter any particular antitrust violations, but that any theory that simply posits that violators will be risk-neutral or risk-averse is fundamentally flawed. Such a theory fails to deal with an important empirical finding of the psychology of risk-taking: under some circumstances people are actually fond of risks.

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A refreshing exception both to the failure to account for attitudes toward risk and the overly simple assumption that firms are either risk-averse or neutral is provided by K. ELZINGA & W. BREIT, *supra* note 83, at 120-29. Professors Elzinga and Breit explicitly address the impact of risk-preferrers on optimal antitrust penalties. *Id.* Elzinga and Breit err, however, in their conclusion that modern managers are almost always risk-averse. The authors, therefore, fail to note that much of the characterization of modern managers as risk avoiders is based on the managers' responses to situations involving potential gains rather than the avoidance of losses. See *supra* notes 84-86 and accompanying text. If managers are similar to other individuals, they may act as risk preferrers in trying to avoid losses. Laughhunn, Payne & Crum, *supra* note 17, seem to confirm empirically that managers, in conformity with other humans, will be risk-affinitive in trying to avoid losses.

115. See *supra* notes 19 and 21-23 and accompanying text.

116. Cf. K. ELZINGA & W. BREIT, *supra* note 83, at 123 (indicating that for risk preferrers "a relatively small reduction in the probability of apprehension and conviction must be compensated by a relatively large increase in financial penalties . . .")

117. For example, the managers of a firm that is considering joining a price-fixing cartel in order to increase profits may view the situation as an opportunity for obtaining gains rather than for avoiding losses. If the managers are similar to most individuals, they will tend to be risk-averse in pursuing gains. On the other hand, if the managers were controlling a company that was losing profits because of decreased demand or increased competition, they might well adopt the firm's prior level of profits as their reference point and, therefore, view the opportunity to join a cartel as a chance to avoid certain losses. Under these circumstances the managers would tend to act as risk-preferrers.



## VII. CONCLUSION—THE FUTURE OF PSYCHOLOGY AND ANTITRUST LAW

This Article has addressed the insights that can be gained from applying the psychology of risk-taking to the issue of predatory pricing and other antitrust questions. Application of those insights yields answers to antitrust problems that differ from the answers derived from classical microeconomic theory. This Article has, for example, clearly demonstrated that predatory pricing may be a serious problem when managerial behavior is viewed in light of the psychological theory of risk-taking instead of microeconomic theory.

Although this Article has emphasized insights gained in the area of human behavior under conditions of risk and uncertainty, other lines of research in experimental psychology may be of potential interest to antitrust scholars and courts. Professors Schwartz, Flynn, and First suggest that psychology may contribute to an understanding of antitrust issues involving consumer behavior.<sup>118</sup> The professors provide no specific examples, but one possible application, the importance of brand loyalty, comes readily to mind. Market definition has always been crucial in the law of monopolization and is becoming increasingly important in areas such as vertical restraints.<sup>119</sup> The phenomenon of persistent and strong brand loyalty may suggest that a particular brand constitutes its own market because it faces little competition from ostensibly identical products. Psychological studies on human habit patterns and group conformity have obvious relevance to issues of brand loyalty.<sup>120</sup>

I would go a step beyond Professors Schwartz, Flynn, and First and sug-

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118. L. SCHWARTZ, J. FLYNN & H. FIRST, *FREE ENTERPRISE AND ECONOMIC ORGANIZATION: ANTITRUST* 45 (6th ed. 1983).

119. The offense of monopolization requires that the defendant possess "monopoly power in the relevant market." *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966). The definition of the offense presupposes a definition of the relevant market element. On the importance of market definition in monopolization cases, see generally ABA SECTION OF ANTITRUST LAW, *ANTITRUST LAW DEVELOPMENTS (SECOND)* 110-17 (1984).

Market definition has become increasingly important in the area of vertical restraints since the Supreme Court's decision in *Continental T.V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36 (1977), in which the Court held that nonprice vertical restraints must be evaluated under a rule of reason. The Court's decision rested partly on the basis that such restraints can benefit interbrand competition even if they stifle intrabrand competition. Logically, some sort of market definition, though not necessarily one so formal as the one used in monopolization litigation, would seem necessary to assess a restraint's impact on interbrand competition. Rill, *Non-Price Vertical Restraints Since Sylvania: Market Conditions and Dual Distribution*, 52 *ANTITRUST L.J.* 95, 98-101 (1983). *But see* ABA SECTION OF ANTITRUST LAW, *ANTITRUST DEVELOPMENTS (SECOND)* 70-71 & n.485 (1984) (suggesting that a firm's market power or share has not been important to lower courts that have analyzed vertical nonprice restraints under the rule of reason).

120. The suggestion that psychological considerations of habit and conformity play important roles in a consumer's choice of brands is neither novel nor original. More than two decades ago economist George Katona attempted to use the teachings of psychology on human habits and conformity to analyze business and consumer behavior. G. KATONA, *THE POWERFUL CONSUMER* 138-54 (1960). Professor Katona concluded that habitual actions play a more important role in business and consumer decision-making than formal problem solving behavior does. *Id.* at 140-45.

gest that psychology, as the science of human behavior, has relevance to any aspect of antitrust analysis that involves assumptions with respect to human behavior, whether the assumptions relate to the behavior of humans as consumers or as managers of business enterprises. I do not mean to suggest, however, that we can develop a comprehensive psychological theory of antitrust law comparable to the theories created through the application of classical microeconomics. For instance, I seriously doubt that psychological studies will contribute to understanding either the proper goals of antitrust law or whether economies of scale make a merger in a particular industry efficient.<sup>121</sup> Nevertheless, experimental psychology can contribute to the development of many areas of antitrust law. Unfortunately, the present antitrust climate may prevent full realization of the potential of psychology to contribute to understanding antitrust issues.

In recent years courts have been extremely receptive to microeconomic theory in dealing with antitrust issues, particularly the microeconomic theories propounded by the so-called "Chicago School" of antitrust law and economics.<sup>122</sup> Indeed, courts have so warmly received these theories that one commentator has proclaimed the "near triumph" of the Chicago School.<sup>123</sup> The overly enthusiastic reception granted to the Chicago School's version of microeconomics is a bit ironic. The irony is that at the very time classical microeconomic analysis has gained ground in antitrust courts, a growing number of economists have expressed disenchantment with the simplifying assumptions of the discipline. These commentators urge their colleagues to look to the data generated and techniques used by other social sciences to construct empirically based models of human behavior.<sup>124</sup>

If the widespread acceptance of the Chicago School's version of microeconomics presages an unwillingness on the part of courts to accept insights from noneconomic disciplines such as psychology, the irony will have turned into a tragedy. As Professor Lawrence Sullivan observed, many

121. For a discussion on the goals of antitrust law, see 1 P. AREEDA & D. TURNER, *supra* note 1, ¶¶ 111-112; R. BORK, *supra* note 3, at 50-89 (arguing for the primacy of economic goals); Fox, *The Modernization of Antitrust: A New Equilibrium*, 66 CORNELL L. REV. 1140, 1146-55 (1981); Schwartz, "Justice" and Other Non-Economic Goals of Antitrust, 127 U. PA. L. REV. 1076, 1076-81 (1979); Flynn, *Antitrust Jurisprudence: A Symposium on the Economic, Political and Social Goals of Antitrust Policy*, 125 U. PA. L. REV. 1182, 1188-90 (1977) (arguing for the importance of noneconomic goals).

122. The Chicago School of antitrust analysis argues that allocative efficiency is the only legitimate goal of antitrust law and that classical microeconomic theory (also known as price theory) is the only legitimate tool for evaluating allocative efficiency. See generally R. BORK, *supra* note 3; Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925, 925-33 (1979).

123. Gerhart, *The Supreme Court and Antitrust Analysis: The (Near) Triumph of the Chicago School*, 1982 SUP. CT. REV. 319; see also Markovits, *The Burger Court, Antitrust, and Economic Analysis*, in THE BURGER COURT 180, 182-84 (V. Blasi ed. 1983) (discussing the influence of classical price theory on the Burger Court's antitrust jurisprudence). For a paean to the triumph of classical price theory in the realm of legal academic antitrust analysis, see Gellhorn & Robinson, *The Role of Economic Analysis in Legal Education*, 33 J. LEG. EDUC. 247, 255-59 (1983).

124. S. MAITAL, *supra* note 9, at 261-80; L. THUROW, *supra* note 10, at ch. 8; Liebenstein, *Microeconomics and X-Efficiency Theory: If There Is Not Crisis There Ought to Be*, in THE CRISIS IN ECONOMIC THEORY 97, 97-110 (D. Bell & I. Kristol eds. 1981).

sources of wisdom for antitrust law other than economics exist, including other social sciences, the humanities, and traditional legal analysis.<sup>125</sup> If courts, out of blind allegiance to classical microeconomics, ignore these sources of wisdom, then they will deprive themselves of important tools in the formulation of an intelligent body of antitrust law. If, on the other hand, courts are open to the insights provided by noneconomic disciplines, we will all benefit from a body of antitrust law that is both realistic and effective.

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125. Sullivan, *Economics and More Humanistic Disciplines: What Are the Sources of Wisdom for Antitrust?*, 125 U. PA. L. REV. 1214, 1232-43 (1977).