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MISBEHAVIORAL ECONOMICS: THE CASE AGAINST BEHAVIORAL ANTITRUST

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Cardozo Law Review, Forthcoming

**George Mason University Law and Economics
Research Paper Series**

11-23

Misbehavioral Economics:
The Case Against Behavioral Antitrust

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October 2, 2010

Abstract

Dissatisfied with the mainstream antitrust jurisprudence that has emerged over the past several decades and garnered widespread consensus, and encouraged by the momentum the financial crisis has generated for intervention, competition policy scholars and regulators have turned to behavioral economics to provide the intellectual foundation for a new, “behaviorally-informed” approach to competition policy. We evaluate these behaviorally-informed regulatory proposals assuming *arguendo* ideal conditions for their implementation: the robustness of behavioral findings to the market setting, the appropriateness of imputing those findings to firm behavior, and that regulators and judges do not suffer the same biases. Others have effectively criticized the behavioral law and economics literature on each of these points. While we believe these criticisms have significant force, our approach offers a more fundamental critique of the behavioral antitrust enterprise. We demonstrate that, even under the ideal conditions described above, behavioral economics does not yet offer an antitrust-relevant theory of competition. We dub this result the “irrelevance theorem.” If one assumes a given behavioral bias applies to all firms – both incumbents and entrants – behavioral antitrust policy implications do not differ from those generated by the rational choice models of mainstream antitrust analysis. Existing behavioral antitrust regulatory proposals have either ignored the implications of entry altogether, or assumed without justification in the behavioral economic literature or elsewhere, that cognitive biases influence the decisions of incumbents but not rivals or potential entrants. While the theoretical failure we expose in no way limits the potential future utility of incorporating behavioral principles into antitrust, behavioral principles must lead to testable implications and outperform existing economic models before it achieves policy relevance. Despite the enthusiastic support it has received from its advocates, until this occurs, behavioral principles will not be in a position to improve an empirically-grounded, evidence-based antitrust policy. We conclude by calling on interventionist advocates of behavioral economics to demonstrate, rather than presume, that behavioral principles can generate a higher rate of return for consumers on their antitrust investment.

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“[I]f the factual context renders respondents’ claims implausible—if the claim is one that simply makes no economic sense— respondents must come forward with more persuasive evidence to support their claim than would otherwise be necessary.”

Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 587 (1986).

I. INTRODUCTION

Behavioral law and economics has rapidly gained prominence amongst regulators and policymakers with the rise of the Obama administration.¹ Over a 30 year span, behavioral economists have produced a body of evidence in laboratory and field experiments that suggests actual individual choices systematically deviate from those predicted by neoclassical economics.² While these economists are attributed with identifying defects in decision-making processes,³ it is the behavioral law and economics movement that has built upon and disseminated these findings in regulatory policy circles.

¹ Andrew Ferguson, *Nudge, Nudge, Wink Wink: Behavioral Economics – The Governing Theory of Obama’s Nanny State*, THE WEEKLY STANDARD (Vol. 15, No. 29, April 29, 2010); Michael Grunwald, *How Obama is Using the Science of Change*, TIME, Apr. 2, 2009, ¶¶ 3-4, available at <http://www.time.com/time/magazine/article/0,9171,1889153,00.html> (describing the Obama administration’s “behavioral dream team”).

² See e.g., Amos Tversky & Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, 5 COGNITIVE PSYCHOL. 207 (1973); Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 ECONOMETRICA 263 (1979); Daniel Kahneman, et al., *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON. 1325 (1990).

³ For a recent review of the literature, see CHRISTINE JOLLS, *Behavioral Law and Economics*, in ECONOMIC INSTITUTIONS AND BEHAVIORAL ECONOMICS (Peter Diamond ed., 2007).

Broadly articulated for the first time in Cass Sunstein and Richard Thaler's call for so-called "libertarian paternalism,"⁴ and again in their book *Nudge: Improving Decisions About Health, Wealth, and Happiness*,⁵ behavioral law and economics scholars promise to design regulatory interventions that incorporate evidence of systematically irrational behavior in ways neoclassical economic theory does not. To that end, behavioral law and economics scholars and regulators propose vast upheavals of – and additions upon – the modern bureaucratic state, incorporating “nudges” which purport to simultaneously preserve consumer choice while “steer[ing] people in directions that will promote their welfare.”⁶ Behavioral law and economics attempts to both identify cognitive biases and “debias” irrational decisions across a slew of private endeavors.

The behavioral approach has already found some success, including its employment within prominent roles of the Obama administration. In addition to Professor Warren's appointment to lead the Consumer Financial Protection Bureau, Cass Sunstein is currently the Administrator of the Office of Information and Regulatory Affairs. Further, legal academics have enthusiastically incorporated insights and empirical observations from the behavioral economics literature into proposed policy interventions; the scholarly output has been impressive in its sheer magnitude,

⁴ Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism is Not an Oxymoron*, 70 U. CHI. L. REV. 1159 (2003).

⁵ RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* (2008).

⁶ Sunstein & Thaler, *supra* note 4.

with “behavioral economics” mentioned in just under 1,000 articles from 2005-09 as compared to 489 from 2000-04 and only 103 from 1995-99.⁷

Perhaps unsurprisingly, this approach has been applied most frequently and most readily in areas that regulators suspect firms profit by exploiting consumer irrationality. The Consumer Financial Protection Bureau presents the purest behavioral law and economics pedigree of any act of the Obama administration. Its proposed first head vociferously embraces the behavioral law and economics canon, citing myriad potential behavioral defects in accusing credit purveyors of “exploit[ing] the lack of information and cognitive limitations of consumers.”⁸ Behavioral law and economics advocates first turned their attention towards areas dominated by firm to consumer exchange, including credit cards and other forms of consumer credit,⁹ retailers, and employer-employee relationships.¹⁰ Behavioral economics’ propensity to focus on consumer irrationality, and in turn, proposals aimed at “protecting consumers” from their own cognitive biases, is understandable. Not only does the behavioral economic literature itself focus on documenting instances of consumer irrationality, but the implications of irrationality at the collective level (whether the collective is a firm,

⁷ See Joshua D. Wright & Douglas H. Ginsburg, *Behavioral Economics, Law, and Liberty: The Never-ending Quest for the Third Way*, Figure 1 (on file with author).

⁸ Oren Bar-Gill & Elizabeth Warren, *Making Credit Safer*, 157 U. PA. L. REV. 1, 106 (2008).

⁹ See David S. Evans & Joshua D. Wright, *The Effect of the Consumer Financial Protection Agency Act of 2009*, 22 LOY. CONSUMER L. REV. 277 (2010) (discussing behavioral policy interventions purporting to debias consumer borrowing decisions).

¹⁰ Sunstein & Thaler, *supra* note 4, at 1175–1177, 1187 (endorsing the Model Employment Termination Act, which would eliminate “at will” employment in favor of a default rule allowing discharge only “for cause.”).

regulatory agency, or judicial body) are far from straightforward. Recent calls to expand behavioral law and economics into antitrust, therefore, can be viewed as a natural extension of this movement, as the central mission of antitrust law is the preservation of competition amongst firms to maximize total consumer welfare.¹¹

The analogous case for the imposition of a behavioral law and economic approach to antitrust is straightforward. Behavioralists assert they can provide a superior basis for understanding both firm and consumer behavior than neoclassical economic models assuming rational behavior.¹² These behavioralist claims have found a receptive audience in at least one member of the Federal Trade Commission. While admitting that “behavioral economics” might “leave us without an ‘organizing principle’” in applying antitrust standards,¹³ Federal Trade Commissioner J. Thomas Rosch has endorsed a behaviorally-informed approach to antitrust on at least anecdotally empirical grounds.¹⁴ This behavioral approach to antitrust “ring[s] true

¹¹ See, e.g., *NCAA v. Bd. of Regents*, 468 U.S. 85, 107 (1984) (“Congress designed the Sherman Act as a consumer welfare prescription. A restraint that has the effect of reducing the importance of consumer preference in setting price and output is not consistent with this fundamental goal of antitrust law.” (citation omitted) (quoting *Reiter v. Sonotone Corp.*, 442 U.S. 330, 343 (1979)) (internal quotation marks omitted)). See also *GTE Sylvania Inc. v. Cont’l T.V., Inc.*, 537 F.2d 980, 1003 (9th Cir. 1976) (en banc), *aff’d*, 433 U.S. 36 (1977) (“Since the legislative intent underlying the Sherman Act had as its goal the promotion of consumer welfare, we decline blindly to condemn a business practice as illegal *per se* because it imposes a partial, though perhaps reasonable, limitation on intrabrand competition, when there is a significant possibility that its overall effect is to promote competition between brands.” (

¹² Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471 (1998).

¹³ J. Thomas Rosch, *Managing Irrationality: Some Observations on Behavioral Economics and the Creation of the Consumer Financial Protection Agency*, Remarks at the Conference on the Regulation of Consumer Financial Products (January 6, 2010), available at <http://ftc.gov/speeches/rosch/100106financial-products.pdf>.

¹⁴ *Id.*

because, however rational we may all try to be, we have all taken actions – often consciously – that we know are not in our ‘wealth maximizing self-interest,’ but which we pursue anyway.”¹⁵ These actions, Commissioner Rosch claims, necessarily condemn any approach to antitrust exclusively grounded in the rationality assumption, thus denouncing in one fell swoop the predominant “Chicago School” approach to antitrust analysis as well as the game-theoretic models of the Post-Chicago School.¹⁶

This pattern of relying on anecdotal evidence to underpin an exceptionally broad thesis, while simultaneously rejecting broad swaths of economic theory and existing empirical evidence, however, is not limited to Commissioner Rosch. Professor Maurice Stucke, for example, claims that “it appears anecdotally that corporate behavior is (or is not) occurring that is not readily explainable under antitrust’s rational choice theories.”¹⁷ The answer, by implication, is a focus upon this loose amalgamation of biases catalogued together so as to constitute “systematic irrationality” and building upon this collection to draw out policy implications across all facets of competition policy.¹⁸

¹⁵ *Id.* at 4.

¹⁶ *Id.* at 3-4.

¹⁷ See, e.g., Maurice E. Stucke, *New Antitrust Realism*, Global Competition Policy (January 2009); Maurice E. Stucke, *Behavioral Economics at the Gate: Antitrust in the Twenty-First Century*, 38 LOY. U. CHI. L. J. 513 (Spring 2007). See also Avishalom Tor, *The Fable of Entry: Bounded Rationality, Market Discipline, and Legal Policy*, 101 MICH. L. REV. 482 (2002).

¹⁸ See, e.g., Maurice E. Stucke, *Behavioral Economics at the Gate: Antitrust in the Twenty-First Century*, 38 LOY. U. CHI. L. J. 513 (Spring 2007).

Proponents of behaviorally-informed antitrust policy claim that behavioral economics provides a superior understanding of both firm and consumer behavior. As an initial observation, this is an empirical claim. Accordingly, the burden of proof for demonstrating this greater understanding remains upon behaviorist advocates.¹⁹ Nevertheless, we present a critical flaw that decouples the behaviorist observations of individual or firm “irrationality” from proposals to supplant current antitrust policy built upon rational-choice economics: this “greater understanding,” in and of itself, *cannot support a shift in antitrust policy.*

There are other shortcomings to the behavioral law and economics approach. Behaviorist advocates marshal an impressive collection of laboratory and field evidence illustrating some deviations from expectations arising out of pure rational choice. What this evidence fails to provide, however, are either necessary or sufficient conditions for situations in which those biases may affect individual or firm decision making and those situations in which they do not.²⁰ Relatedly, the behavioral literature provides no basis for predicting individual behavior when decision makers are simultaneously fettered by multiple biases that work in opposing directions.

¹⁹ See, e.g., Gregory Mitchell, *Taking Behavioralism Too Seriously? The Unwarranted Pessimism of the New Behavioral Analysis of Law*, 43 WM. & MARY L. REV. 1907, 1945 (2002) (“In fact, when one examines the actual data gathered by decision researchers rather than just summary presentations of the data, one finds that at least a significant minority and often a significant majority of the subjects provided the ‘right,’ or rational, answer to the judgment or decision problem under consideration.”); Gregory Mitchell, *Why Law and Economics’ Perfect Rationality Should Not Be Traded for Behavioral Law and Economics’ Equal Incompetence*, 91 GEO. L.J. 67, 86-105 (2002).

²⁰ Gregory Mitchell, *Libertarian Paternalism Is an Oxymoron*, 99 NW. U. L. REV. 1245 (2005),

Furthermore, behavioralists have failed to explain whether potential gains from “de-biasing” may be realized in light of presumptively also-irrational judges and regulators.²¹

However, setting aside these empirical questions for the moment – and, indeed, for the purpose of this paper entirely – of the robustness and generalizability of behavioral findings to policy relevant settings, we must now pause to consider the implications of systematic consumer irrationality for *antitrust*. Consider the extreme case, wherein consumers are completely, unpredictably irrational due to a conflation of behavioral biases. This form of irrationality would have myriad effects on our understanding of consumer behavior and its implications for antitrust. For example, fundamental antitrust tools such as market definition would be of little use without the assumption of rational consumer substitution in response to price changes. Monopolization and merger analysis would require massive restructuring, though it is not clear that either could be executed coherently without the discipline of the rationality assumption and its ability to convert abstract theories to testable claims capable of refutation by data.

Of course, the modern behavioralists focus on milder forms of such an “irrationality hypothesis” – those which involve predictable, non-random deviations from the axiomatic assumption of rational choice – which open the door to the modified

²¹ *Id.*; Jonathan Klick & Gregory Mitchell, *Government Regulation of Irrationality: Moral and Cognitive Hazards*, 90 MINN. L. REV. 1620, 1628 n. 20 (2006); Wright & Ginsburg, *supra* note 7.

application of traditional antitrust concepts. Existing modes of antitrust analysis, however, already account for these milder, more predictable forms of consumer irrationality. Consider consumer biases that render individuals more or less sensitive to changes in market conditions. For example, behavioralists cite the “status quo bias” as causing consumers to resist change to a good or service they might find superior due to habituation to routine.²² Such a bias might change the predicted consumer substitution patterns as between, for example, Coke and Pepsi, should one or the other (or both) raise their prices. Conventional antitrust analysis already incorporates *actual* consumer behavior – rational or otherwise – into existing analysis, including the estimation of demand curves in assessing cross-elasticities of demand. Thus, while behavioral insights might be useful in explaining consumer behavior in specific instances, the antitrust toolkit contains widely accepted and well understood tools for analyzing the actual choice behavior of consumers. Thus, even assuming the behavioral findings may be accepted with full confidence and implemented into policy with perfection, in order to meaningfully “empirically update” modern antitrust as claimed by advocates, behavioral economics must provide a superior theory of *firm* behavior.

²² Daniel Kahneman et al., *Anomalies: The Endowment Effect, Loss Aversion, and the Status Quo Bias*, 5 J. ECON. PERSP. 193 (1991).

Behavioralist advocates claim they have done exactly that.²³ This claim is far more tenuous – and controversial – however, precisely because of the inherent focus of behavioral economics on individual psychology and how this interfaces with economic decision making.²⁴ One might attempt to marshal the laboratory and field evidence in support of the claim that *firms* behave in predictably irrational ways. While intuitively pleasing, however, this view is economically naïve. The logical weaknesses with this pivot are at least twofold. First, while firms may be, at their core, self-selected aggregations of individuals, it does not follow that firms necessarily behave with similar, or similarly predictable, consequences. While Chief Executive Officers, Boards of Directors, management, and employees are all obviously people, it is far from obvious that this common trait would result in the firm taking on a similar bias in the specific. Moreover, even if we might safely postulate this extreme claim, it is equally problematic to more fully contemplate the phenomenon of biases that aggregate to the group level. If the behavioralists can assert that individual biases predictably aggregate up to the firm level, it is incumbent upon those behavioralists to explain why these

²³ See, e.g., J. Thomas Rosch, The Next Challenges for Antitrust Economics, Remarks at the NERA 2010 Antitrust Trade & Regulation Seminar *12-13 (July 8, 2010), available at <http://ftc.gov/speeches/rosch/100708neraspeech.pdf> (“Behavioral economics has provided important research showing that corporations, like individuals, do not always behave rationally [f]rom my vantage point, behavioral economics has already offered some important insights for antitrust enforcers.”).

²⁴ This is not to say that economists have completely ignored the issue. See RICHARD M. CYERT & JAMES G. MARCH, A BEHAVIORAL THEORY OF THE FIRM (1963); Armen A. Alchian, *Uncertainty, Evolution, and Economic Theory*, 58 J. POL. ECON. 211 (1950).

same cognitive biases will not aggregate upwards in a similar manner during the administrative, regulatory, or appellate review processes.

These contradictions reflect multiple concentric gaps within the relevant behavioral law and economics literature. On the most fundamental of levels, the behavioral law and economics literature simply says little at present about how *multiple* biases act within a single individual.²⁵ As such, while one could accept that a given bias may exist in the population, there is little to no evidence of how multiple demonstrable biases interact with one another, much less in ways that have produced testable implications. Worse still, behavioralists have yet to offer theories of the distribution of these biases throughout the population.²⁶ Commissioner Rosch has sidestepped this argument by referencing the antiquated “least sophisticated consumer” test by analogy to presume pervasive irrationality for all.²⁷ Such assumptions do nothing, however, to document the relative distribution of various biases – especially those which purport to oppose one another – for determining the ones against which regulators ought to remain vigilant. At a greater level of generality, these critiques expose the fact that behavioral economists cannot be said to offer a reliable map from which one can, by

²⁵ See, e.g., Thomas A. Lambert, *Two Mistakes Behavioralists Make: A Response to Professors Feigenson et al. and Professor Slovic*, 69 MO. L. REV. 1053 (2004); See generally Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: Some Evidence of Market Manipulation*, 112 HARV. L. REV. 1422, 1427 (1999) (“behavioral research presents too many conflicting and overlapping biases to make confident overall predictions about consumer perceptions”).

²⁶ See Douglas Glen Whitman & Mario J. Rizzo, *The Knowledge Problem of New Paternalism*, 2009 BYU L. REV. 905 (2009).

²⁷ Rosch, *supra* note 13, at 5.

inputting irrational individual choices, produce reliable predictions of group choice. These failings make it difficult to conceive how behavioral economics can predict firm behavior when those biases derive from heterogeneously distributed defects in individual decision making.

Economic theory provides another reason for skepticism concerning predictable firm irrationality. As Armen Alchian, Ronald Coase, Harold Demsetz, Benjamin Klein, and Oliver Williamson (amongst others) have reiterated for decades,²⁸ the firm is not merely a heterogeneous hodgepodge of individuals, but an institution constructed to lower transaction costs relative to making use of the price system (the “make or buy” decision²⁹). Firms thereby facilitate specialization, production, and exchange.³⁰ Firms must react to the full panoply of economic forces and pressures, responding through innovation and competition. To the extent that cognitive biases operate to deprive individuals of the ability to choose rationally, the firm and the market provide effective mechanisms to at least mitigate these biases when they reduce profits. The central point of the above is straightforward: one cannot simply claim that evidence of individual biases impacts firm decision making on the aggregate level, much less that behavioral

²⁸ Ronald H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 384 (1937); Armen A. Alchian, *Uncertainty, Evolution and Economic Theory*, 58 *J. POL. ECON.* 211 (1950); Benjamin Klein, Robert G. Crawford, & Armen A. Alchian, *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 *J. L. & ECON.* 297 (1978); Armen Alchian & Harold Demsetz, *Production, Information Costs, and Economic Organization*, 62 *AM. ECON. REV.* 777 (1972); Oliver E. Williamson, *Transaction Cost Economics: The Governance of Contractual Relations*, 22 *J. L. & ECON.* 233 (1979).

²⁹ Ronald H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 384 (1937).

³⁰ See Benjamin Klein & Andres Lerner, “The Firm in Economics and Antitrust Law,” *Issues in Competition Law and Policy* 1, 15 (W. Collins, ed., American Bar Association Antitrust Section, 2008).

economics provides, at this point, support for claims that behavioral accounts of firm behavior offer a superior empirical basis upon which to base antitrust analysis.³¹

This discussion admittedly does not provide a complete picture of the behavioral economics literature. Our task is neither a comprehensive review of this literature, nor to attempt the undoubtedly interesting task of postulating a mechanism by which individual biases might be transmitted to firms, or, as above, why regulators may enjoy any confidence that they are not similarly vexed with cognitive fallacies. We are confident that the behavioral economics literature will develop apace in the years to come, including addressing some of these obstacles as outlined above. These would be important contributions. But our purpose is not to take on the Quixotic task of anticipating a literature that has not yet developed in order to critique it, or even the complementary task of empirically assessing what assumptions about individuals and firms may or may not be supported by existing data.

Our critique is a preemptive strike at the behavioral antitrust enterprise of another sort. We claim that even *if* the entire body of knowledge known as “behavioral economics” was sufficiently robust and empirically demonstrated to satisfy each of the hurdles identified above, and *if* we can reliably assume that firms also exhibit

³¹ For a survey of the sparse behavioral economic literature on firms, see Michael Salinger, *Behavioral Economics, Consumer Protection, and Antitrust*, 6 COMPETITION POL’Y INT’L 65 (2010). For an early behavioral account of firm behavior, see RICHARD M. CYERT & JAMES G. MARCH, *A BEHAVIORAL THEORY OF THE FIRM* (1963). See also Mark Armstrong & Steffen Huck, *Behavioral Economics as Applied to Firms: A Primer*, 6 COMPETITION POL’Y INT’L 3 (2010); Herbert A. Simon, *A Behavioral Model of Rational Choice*, 69 Q. J. ECON. 99 (1955); Armen Alchian, *Uncertainty, Evolution and Economic Theory*, 58 J. POL. ECON. 211 (1950).

predictable biases, and *if* those biases can somehow be mitigated within regulators, **behavioral economics nonetheless fails to offer *any* clear policy implications for antitrust law, and certainly does not systematically support a more interventionist competition policy.** As we will demonstrate, behavioralists at present fail to provide a rigorous and coherent basis for systematically predicting which firms suffer from behavioral biases and which do not.³² Absent such a means of discerning rational firms from irrational firms, conventional antitrust economic analysis exposes a fatal weakness in the claims of behavioralist antitrust advocates, who uniformly favor greater intervention. Upon closer inspection, the behavioral literature cannot provide theoretical or empirical support for these positions. In our view, the homogeneity of behavioral antitrust policy prescriptions derives from a naïve model of irrationality. A closer examination of antitrust in a world of various combinations of rational and irrational incumbents facing competition from rational versus irrational entrants demonstrates that behavioral economics cannot answer the central questions at the heart of modern antitrust policy.

Proponents of behavioral antitrust have implicitly adopted a model in which either incumbent firms or entrant firms are irrational, but that their counterparts generally are not. Therefore, the proponents conclude that irrational firms engage in

³² Greg Mitchell makes this point in the individual context. See Gregory Mitchell, *Libertarian Paternalism Is an Oxymoron*, 99 Nw. U. L. Rev. 1245 (2005).

anticompetitive behavior categorically more frequently.³³ When one assumes any behavioral bias distributed equally between incumbents and entrants, however, we claim the policy prescriptions of behavioralists necessarily wither on the vine. By correcting the naïve model, we present a more robust account of firm rationality and its relevance to antitrust policy, and describe a set of tradeoffs not considered by the proponents of behavioral antitrust.³⁴ We characterize this result as a “behavioral irrelevance theorem,” which we believe provides a more realistic account of firm-level irrationality as it relates to antitrust policy. Under this modestly more sophisticated approach, we demonstrate that firm irrationality does not imply more interventionist antitrust policy, and it is unclear whether it is capable at this point of providing useful predictions for competition policy generally.

This paper proceeds in four parts. Part II begins by offering a brief primer on various behavioral biases and summarizing the relevant behavioral economics literature.

Part III outlines our “behavioral irrelevance theorem.” We analyze the implications of substituting a more realistic account of firm irrationality in place of the naïve one favored by proponents of behavioral antitrust. Specifically, our model

³³ Each behavioral economic analysis involving antitrust has concluded that firm irrationality tends toward more rather than less anticompetitive behavior. *See* ____; this follows the more general trend in the behavioral literature of favoring paternalistic intervention. *See* Rachlinski (quote about all papers favoring intervention).

³⁴ In the words of Wolfgang Pauli, we thus characterize behaviorally-informed antitrust as not only not right, but not even wrong.

accepts the behavioralist assumption that firms behave in predictably irrational ways, but considers the implications of that assumption as applied to both incumbents and potential entrants. We demonstrate that most behavioral antitrust proposals have in fact implicitly adopted the naïve model we critique, and explain why it is likely to lead to erroneous policy prescriptions. We also highlight policy tradeoffs concerning firm irrationality that have, thus far, been ignored in the existing literature.

Part IV builds upon our irrelevance theorem and considers its implications for the future of behavioral antitrust, compares our predictions to the experience of the Post-Chicago School, explains why a “behaviorally informed” approach to antitrust threatens to aggravate the latent model selection problem long at work in American antitrust enforcement, and ends with a call for a more serious commitment to “evidence-based” competition policy.

II. BEHAVIORAL ECONOMICS: A BRIEF PRIMER

Rational choice economists do not assume that all individuals are rational, cold, and calculating optimizers. The rationality assumption in economics has long played the role of a simplifying assumption that allows tractable models of behavior that can generate insights on market phenomena. Economic methodology has long required that competing models succeed or fail based on their predictive power.³⁵

³⁵ MILTON FRIEDMAN, *The Methodology of Positive Economics*, in *ESSAYS IN POSITIVE ECONOMICS* 3-16 (1953). See also George J. Stigler, Nobel Memorial Lecture: The Process and Progress of Economics (Dec. 8, 1982),

The behavioralists appear to embrace this challenge. Christine Jolls, Cass Sunstein, and Richard Thaler, perhaps the most prominent behavioral law and economics scholars, describe the purpose of behavioral law and economics as economic analysis of the law “with a higher R-squared.”³⁶ This goal of using economic analysis to provide a “greater power to explain the observed data”³⁷ is a familiar one. In the forty years since the New Learning,³⁸ scholars, judges, and competition regulators have jointly shaped modern antitrust policy to incorporate economic insights in response to vertical contractual arrangements,³⁹ monopolization claims,⁴⁰ and mergers,⁴¹ amongst others. As antitrust law and economic analysis have become further intertwined – such that the non-economic construction of antitrust law is now all but unthinkable⁴² – economic observations, where most stringently applied, have yielded predictability and

in NOBEL LECTURES, ECONOMICS 1981-1990 67 (Karl-Goran, Male red., World Scientific Publishing Co., Singapore, 1992).

³⁶ Christine Jolls, Cass Sunstein & Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1487 (1998).

³⁷ CHRISTINE JOLLS, *Behavioral Law and Economics*, in ECONOMIC INSTITUTIONS AND BEHAVIORAL ECONOMICS (Peter Diamond ed., Princeton Univ. Press 2007).

³⁸ See INDUSTRIAL CONCENTRATION: THE NEW LEARNING (Harvey J. Goldschmid et al. eds., 1974); Timothy J. Muris, *Improving the Economic Foundations Of Competition Policy*, 12 GEO. MASON. L. REV. 1 (2003).

³⁹ See, e.g., Joshua D. Wright, *Overshot the Mark? A Simple Explanation of the Chicago School’s Influence on Antitrust*, 5 COMPETITION POL’Y INT’L 179 (2009) (discussing RPM and exclusive dealing).

⁴⁰ See, e.g., KEITH N. HYLTON, *The Law and Economics of Monopolization Standards*, in ANTITRUST LAW AND ECONOMICS 82 (Keith N. Hylton, ed., Edward Elgar Publishing 2010); BRUCE H. KOBAYASHI, *The Law and Economics of Predatory Pricing*, in ANTITRUST LAW AND ECONOMICS 116 (Keith N. Hylton, ed., Edward Elgar Publishing 2010).

⁴¹ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES (August 19, 2010).

⁴² Just one example of the now deep integration between economics and antitrust is exemplified by Judge Posner’s decision to drop “An Economic Perspective” from the title of his well known antitrust treatise between the first edition in 1976 and the second in 2001. RICHARD A. POSNER, ANTITRUST LAW vii (2d ed. 2001).

certainty in many once-fickle areas of doctrine.⁴³ Most importantly, as the error costs from antitrust enforcement have declined, the benefits to the public from antitrust enforcement have increased. Any successful application of behavioral economics to antitrust law must therefore rise or fall on its ability to predictably and accurately discern anticompetitive conduct from procompetitive conduct in a manner that can be confidently and consistently applied by judges and regulators.⁴⁴

It is incumbent at this point that we specify our claim about the irrelevance of behavioral law and economics to antitrust. “Behavioral economics” and “behavioral law and economics” fundamentally differ in both focus and aim and should be carefully distinguished. These terms are occasionally interchangeably used, but the distinction is material for our purposes. “Behavioral economics” encompasses a multitude of theories that share a common focus on documenting and analyzing systematic deviations from rationality in decision making. “Behavioral law and economics,” by contrast, offers both general and specific policy proposals designed to shape legal doctrine in areas ranging from employment law to consumer protection to, germane

⁴³ Douglas H. Ginsburg, *Originalism and Economic Analysis: Two Case Studies of Consistency and Coherence in Supreme Court Decision Making*, 33 Harv. J. L. & Public Pol’y 217 (2010). See also POSNER, *supra* note 42, at viii (“Much of antitrust law in 1976 was an intellectual disgrace. Today, antitrust law is a body of economically rational principles . . .”).

⁴⁴ Douglas H. Ginsburg & Derek W. Moore, *The Future of Behavioral Economics in Antitrust*, 6(1) COMPETITION POL’Y INT’L 89 (2010). See also Michael R. Baye & Joshua D. Wright, *Is Antitrust Too Complicated for Generalist Judges? The Impact of Economic Complexity & Judicial Training on Appeals* (George Mason University School of Law, Working Paper, Aug. 21, 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1319888 (finding a statistically significant tendency for economically trained judges to perform better in simple antitrust cases, but not those involving sophisticated economic evidence).

here, antitrust.⁴⁵ We do not mean to condemn the potential salience of behavioral economics' observations either to economists or necessarily in other legal fields. Such a project is beyond the scope of our current project; though our analysis has clear implications for other areas in which behavioralists aim to "debias" firm behavior in the name of consumer protection. As applied to antitrust law, however, behavioralists have thus far failed to articulate a logically coherent policy proposal arising from a behavioral economics observation. We will next briefly review these two schools in turn: first by examining the two major clusters of biases presented by behavioral economics, and then by outlining several legal invocations of these principles.

A. Irrationality, Limited Information, and Behavioral Economics

Behavioral economics arose as a discipline as one of several responses to a fundamental assumption of neoclassical economics: that individuals act as rational maximizers of their own welfare.⁴⁶ Several schools of thought within economics arose to explain, catalog, and relate real-world phenomena of imperfect contracting, uncertainty in economic decision making, and the costs of information gathering to this theoretical assumption.⁴⁷ Microeconomists such as Alchian, Stigler, Becker, and Friedman explored "irrational" behavior through the tools of price theory. Decisions that appeared irrational *ex post* often reflected the costs of obtaining and processing

⁴⁵ Amanda P. Reeves & Maurice E. Stucke, *Behavioral Antitrust* (University of Tennessee Legal Studies Research Paper No. 106, March 2010), available at <http://ssrn.com/abstract=1582720>.

⁴⁶ Wright & Ginsburg, *supra* note 7.

⁴⁷ See, e.g., Gary Becker, *Irrational Behavior and Economic Theory*, 40 J. POL. ECON. 1 (1962).

information and produced dynamic learning effects that could be measured across time.⁴⁸

Behavioral economics, by contrast, attempts to address irrational human behavior in light of limited cognitive capacity and inherent cognitive failings.⁴⁹ Herbert Simon produced the first major contribution to behavioral economics by outlining “bounded rationality,” the notion that humans attempt to overcome an inability to assemble perfect information through the extensive use of heuristics and other shortcuts.⁵⁰ Psychologists Daniel Kahneman and Amos Tversky expanded upon this work through a series of controlled experiments designed to identify and categorize deviations from rationality.⁵¹ Their resultant “prospect theory” grouped irrational behaviors together within three loose categories: “representativeness,” “availability,” and “adjustment or anchoring.”⁵²

⁴⁸ Jonathan Klick & Gregory Mitchell, *Government Regulation of Irrationality: Moral and Cognitive Hazards*, 90 MINN. L. REV. 1620 (2006); Edward L. Glaeser, *Paternalism and Psychology*, 73 U. CHI. L. REV. 133, 140 (2006) (“in experiments, individuals have few tools with which to improve their reasoning, and their only real method of responding to incentives is to think harder”).

⁴⁹ Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism is Not an Oxymoron*, 70 U. CHI. L. REV. 1159 (2003); Richard H. Thaler, *Doing Economics Without Homo Economicus*, in FOUNDATIONS OF RESEARCH IN ECONOMICS: HOW DO ECONOMISTS DO ECONOMICS? 227–37 (Steven G. Medema & Warren J. Samuels eds. 1996); Richard H. Thaler, *Toward A Positive Theory of Consumer Choice*, 1 J. ECON. BEHAV & ORG. 39 (1980);

⁵⁰ Herbert A. Simon, *A Behavioral Model of Rational Choice*, 69 Q. J. ECON. 99 (1955).

⁵¹ Daniel Kahneman & H. Tversky, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124 (1974).

⁵² See e.g., Amos Tversky & Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, 5 COGNITIVE PSYCHOL. 207 (1973); Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 ECONOMETRICA 263 (1979); Daniel Kahneman, et al., *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON., 1325 (1990); Daniel Kahneman & Shane Frederick, *Representativeness Revisited: Attribute Substitution in Intuitive Judgment*, in HEURISTICS AND BIASES: THE PSYCHOLOGY OF INTUITIVE JUDGMENT 49–81 (Thomas Gilovich et al. eds. 2002).

Modern behavioral economists by and large adopt the Kahneman-Tversky framework in both classifying and testing these biases. Behavioralist critiques of perfect rationality typically reflect either (1) observational errors, where an individual perceives his surroundings and incorporates data irrationally due to the pervasive use of heuristics, or (2) willpower errors, where an individual systematically and asymmetrically behaves against his stated preferences due to an over-valuation or under-valuation of present or future welfare prospects and costs. Observational errors include biases such as framing effects, the willingness to pay/willingness to accept (“WTA/WTP”) gap, and the endowment effect. Willpower errors include hyperbolic discounting, optimism bias, and irrational risk aversion. Observational errors may be summarized as errors in computation; willpower errors may be summarized as errors in implementation.

Observational errors arise from the shaping effects of context and environment in individual decision making. This unifying strand can be witnessed in different ways when examining framing effects, the WTA/WTP gap, and the endowment effect. Behavioralist have studied framing effects in a variety of contexts.⁵³ The premise behind a framing effect is that an individual presented with an identical set of options surrounded by different environs will make different choices, implying an inconsistency with ‘true preferences,’ which Kahneman and Tversky label “preference

⁵³ For a review of framing effects and contextualization errors, see Mitchell, *supra* note 32.

reversals.”⁵⁴ Behavioralists rely upon the WTA/WTP gap to characterize a specific class of inconsistent preferences: when an individual will pay a fixed amount of money to acquire an object, but will only accept a different, typically greater, amount of money to part with the same object.⁵⁵ The endowment effect is a closely related phenomenon. The endowment effect arises once an individual establishes a property or ownership right in a good or service, and is widely considered the most robust and most important empirical contribution of the behavioral literature.⁵⁶ Behavioralists cite the endowment effect to explain why an individual generally requires greater compensation to divest himself of a good than to acquire a like good. This is sometimes referred to as “divestiture aversion” and is closely linked with the status quo bias.⁵⁷

Willpower errors, by contrast, purportedly distort individuals’ actions despite the quality of the information they possess. Hyperbolic discounting is the most prevalent and widely cited of the willpower errors. In neoclassical economic theory, economic actors discount future benefits and costs exponentially in proportion to how

⁵⁴ See Amos Tversky & Richard H. Thaler, *Preference Reversals*, in *THE WINNER’S CURSE: PARADOXES AND ANOMALIES OF ECONOMIC LIFE* (Free Press 1992).

⁵⁵ Daniel Kahneman et al., *Anomalies: The Endowment Effect, Loss Aversion, and the Status Quo Bias*, 5 J. ECON. PERSP. 193 (1991).

⁵⁶ See, e.g., Daniel Kahneman et al., *The Endowment Effect, Loss Aversion, and Status Quo Bias*, in *CHOICES, VALUES AND FRAMES* 159, 170 (2000) (describing the robustness of the endowment effect as “part of our endowment, and we are naturally keener to retain it than others might be to acquire it”); Russell Korobkin, *The Endowment Effect and Legal Analysis*, 97 NW. L. REV. 1227, 1229 (2003) (“The endowment effect is undoubtedly the most significant single finding from behavioral economics for legal analysis to date”); See also Samuel Issacharoff, *Can There Be a Behavioral Law and Economics?*, 51 VAND. L. REV. 1729, 1735 (1998) (“The endowment effect is the most significant empirical observation from behavioral economics.”).

⁵⁷ Daniel Kahneman et al., *Anomalies: The Endowment Effect, Loss Aversion, and the Status Quo Bias*, 5 J. ECON. PERSP. 193 (1991).

far they appear on the horizon.⁵⁸ This concept, known as “exponential discounting,” reflects both the risk of the nonoccurrence of an event as well as a consistent and discernable preference for immediate, as opposed to delayed, gratification.⁵⁹ Under exponential discounting, economic agents have a consistent discount rate for which they will accept future benefits in lieu of present ones. This discount rate accounts for interest rates, retirement plans, finance charges, and a host of other future-tense benefits.⁶⁰ Hyperbolic discounting, by contrast, emphasizes an *inconsistent* set of time preferences. Hyperbolic discounting describes a set of preferences for consumption over time in which an individual both places an exceptionally high weight on present benefits but would reverse that preference in retrospect.⁶¹ A consumer subject to hyperbolic discounting might gladly consume \$5,000 of goods immediately in exchange for debt totaling \$10,000 over five years at the time of their purchase; in retrospect, however, the consumer views their purchase with regret. The core idea of preference reversals in this context is that individuals systematically fail to defer gratification sufficiently in order to maximize their own welfare.⁶² Behavioralists have cited

⁵⁸ See Shane Frederick, George Loewenstein & Ted O’Donoghue, *Time Discounting and Time Preference: A Critical Review*, in *TIME AND DECISION: ECONOMIC AND PSYCHOLOGICAL PERSPECTIVES ON INTERTEMPORAL CHOICE* 13–86 (Loewenstein et al. eds. 2003).

⁵⁹ See Shane Frederick, George Loewenstein & Ted O’Donoghue, *Time Discounting and Time Preference: A Critical Review*, in *TIME AND DECISION: ECONOMIC AND PSYCHOLOGICAL PERSPECTIVES ON INTERTEMPORAL CHOICE* 13–86 (Loewenstein et al. eds. 2003).

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² The original analysis of such time-inconsistent preferences in economics is R.H. Strotz, *Myopia and Inconsistency in Dynamic Utility Maximization*, 23(3) *REV. ECON. STUD.* 165 (1955-56).

hyperbolic discounting as the cause of a host of ills, from obesity to consumer debt, and proposed an attendant host of policy interventions designed to help consumers overcome these preferences.⁶³

Two more contrary willpower errors are optimism bias and risk aversion. Optimism bias reflects an individual's propensity to accurately acknowledge risks in a circumstance when contemplated generally, but to discount those risks as specifically applied to their situation.⁶⁴ Jolls, Sunstein, and Thaler describe optimism bias as people "think[ing] that bad events are far less likely to happen to them than to others."⁶⁵ Optimism bias could also be considered an observational error; however, behavioralists often cite it to explain choices that reflect failures of self-control or excessive sanguinity as to the costs of present consumption. Examples run the gamut of legitimacy within risk-accepting behavior, from the mundane purchase on credit to underestimating sanctions following criminal acts.⁶⁶ The converse risk aversion bias speculates that individuals are less likely to pursue a course of action with defined costs and undefined

⁶³ Cass R. Sunstein, *Boundedly Rational Borrowing*, 73 U. CHI. L. REV. 249 (2006); Oren Bar-Gill, *Seduction by Plastic*, 98 NW. U. L. REV. 1373, 1395–1411 (2004); Jonathan Gruber & Botond Koszegi, *Is Addiction "Rational"? Theory and Evidence*, 116 Q. J. ECON. 1261 (2001); Jonathan Gruber & Botond Koszegi, *Tax Incidence When Individuals are Time Inconsistent: The Case of Cigarette Excise Taxes*, 88 J. PUB. ECON. 1959 (2004).

⁶⁴ Jolls, Sunstein & Thaler, *supra* note 36, at 1524.

⁶⁵ *Id.*

⁶⁶ Cass R. Sunstein, *Boundedly Rational Borrowing*, 73 U. CHI. L. REV. 249 (2006); Oren Bar-Gill, *Seduction by Plastic*, 98 NW. U. L. REV. 1373, 1395–1411 (2004); *see also* Lawrence M. Ausubel, *The Failure of Competition in the Credit Card Market*, 81 AM. ECON. REV. 50 (1991) (asserting that consumer irrationality explains observed pricing behavior in the credit card market): Jolls, *supra* note 3.

benefits, even if, when construed under a purely rational calculus, the risk in question may be cost-justified.

B. The Rise of Behavioral Law and Economic and Government Regulation of Irrationality

While behavioral economists have largely devoted themselves to the identification, isolation, and testing of cognitive errors, behavioral law and economics scholars have eagerly put forth various policy proposals to attempt to correct these decision making flaws. Sunstein and Thaler's *Nudge* both summarizes the behaviorist approach to regulation as well as offers a panoply of behaviorist remedies to perceived common cognitive vices, from sin taxes to reversing commonly-held default contractual terms.⁶⁷ Behaviorist principles underpin the recently passed CARD Act as well as the newly minted Consumer Financial Protection Bureau.⁶⁸

Antitrust behaviorists go yet further. Professor Christopher Leslie expressly calls for relaxing "rationality" analysis in private antitrust actions, as "[a]ntitrust law is neither intended nor designed to evaluate the rationality of business conduct."⁶⁹

Commissioner Rosch desires a behaviorally-informed approach to merger laws

⁶⁷ THALER & SUNSTEIN, *supra* note 5.

⁶⁸ See Oren Bar-Gill & Elizabeth Warren, *Making Credit Safer*, 157 U. PA. L. REV. 1, 39 (2008); Elizabeth Warren, *Unsafe at Any Rate*, 5 DEMOCRACY J. IDEAS, (Summer 2007), available at <http://www.democracyjournal.org/article.php?ID=6528>; Michael S. Barr, Sendhil Mullainathan, & Eldar Shafir, *Behaviorally Informed Financial Services Regulation 1* (New Am. Found., Working Paper, October 2008). For a criticism of the behavioral approach to regulating consumer credit, see David S. Evans & Joshua D. Wright, *The Effect of the Consumer Financial Protection Agency Act of 2009*, 22 LOY. CONSUMER L. REV. 277 (2010). The new Consumer Financial Protection Bureau and its roots in behavioral law and economics are discussed *infra*, at Part III.B.2.

⁶⁹ Christopher R. Leslie, *Rationality Analysis in Antitrust* 262, 353 (UC Irvine School of Law Research Paper No. 2010-9), available at <http://ssrn.com/abstract=1557850>.

focusing on the European “consumer choice” model rather than relying on whether economic theory predicts an increase or decrease in prices and total output.⁷⁰ Commissioner Rosch indeed advocates for an increased behavioralist presence despite admitting the lack of a unifying principle in applying behavioralist observations.⁷¹ Professor Avishalom Tor cites systematic irrational risk aversion to justify a more interventionist antitrust policy towards vertical resale price maintenance, mergers, and some monopolization claims.⁷² Professor Stucke goes yet further, simultaneously claiming that the behavioral approach both calls rational self-interest into question *in toto* and mandates that “[i]n no event should the government actively promote self-interested behavior.”⁷³ If behavioral law and economics scholars enjoy their economist counterparts’ tendency towards a scattershot research agenda, behavioral law and economics scholars retain none of behavioral economists’ hesitation towards offering blanket regulatory proposals.

At least two theoretical limitations should necessarily chasten behavioral economists and confound behavioral law and economics advocates. The first is a theoretically sound set of necessary and sufficient conditions for predicting when a

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² Avishalom Tor, *The Fable of Entry: Bounded Rationality, Market Discipline, and Legal Policy*, 101 MICH. L. REV. 482 (2002); Avishalom Tor & William J. Rinner, *Behavioral Antitrust: A New Approach to the Rule of Reason after Leegin* (University of Haifa Faculty of Law Legal Studies Research Paper Series, December 2009), available at <http://ssrn.com/abstract=1522948>.

⁷³ Maurice E. Stucke, *Money, Is That What I Want? Competition Policy & the Role of Behavioral Economics* 185 (University of Tennessee legal Studies Research Paper No. 75; Santa Clara L. Rev., Vol. 50, 2010) available at <http://ssrn.com/abstract=1419751>

given bias will affect an individual.⁷⁴ Behavioralists have yet to advance a hypothesis as to whether and to what extent an individual or collection of individuals (such as a firm) will demonstrate any purported irrational bias. In the absence of such a theory, the slate of behavioralist suggestions must necessarily apply either to entire populations by default or to individual firms as selected by regulators. The former imposes costs upon those individuals who do not, in fact, suffer from the particular bias a proposed regulation seeks to cure. The latter similarly imposes costs on individuals or firms indiscriminately, but one level removed: without transparent guidelines as to how behavioral biases can be discovered and isolated, behaviorally-inspired regulation imposes uncertainty costs on firms who have no way of knowing whether their actions will be determined “irrational” *ex post*. We note a second, epistemological flaw briefly: it is necessarily impossible to know whether an individual’s actions actually represent an irrational decision after the fact. To the extent that hyperbolic discounting merely requires a discount rate in excess of what a given regulator can conceive of as justified, it is difficult to avoid finding justification in Commissioner Rosch’s speculation that “behavioral economics is simply liberalism masquerading as economic thinking.”⁷⁵

Behavioralists nevertheless pursue regulation of their preferred cognitive biases through undermining, supplanting, or even outright abandoning traditional antitrust

⁷⁴ See Mitchell, *supra* note 32, at 1251.

⁷⁵ J. Thomas Rosch, The Next Challenges for Antitrust Economics, Remarks at the NERA 2010 Antitrust Trade & Regulation Seminar *7 (July 8, 2010), *available at* <http://ftc.gov/speeches/rosch/100708neraspeech.pdf>.

doctrine. Regardless of the potential merits behaviorally-inspired observations may or may not have in other fields, these insertions cannot withstand scrutiny as applied to antitrust law. The absence of a meaningful basis on which to discern when specific individuals or firms behave subject to a cognitive bias as opposed to rationally renders behavioral law and economics impossible to implement in antitrust. As we illustrate below, when any given behavioral bias is equally attributed to *both* incumbent and potential entrant firms, that bias generates no clear antitrust implications. Furthermore, while no behavioralist has yet provided a theoretical basis to justify doing so, when a behavioral bias is arbitrarily assigned to only entrants or incumbents, the antitrust implications are *nevertheless* unclear, and those that can be derived simply do not mesh with the uniform use of behavioral insights to support more interventionist policies. The only remaining potential combination of firms and rationality status, and the only permutation with antitrust implications, is the Chicago and Post-Chicago “mainstream” rationality assumption. Unfortunately, this is the only set of assumptions behavioralists uniformly reject.

III. BEHAVIORAL ECONOMICS PROVIDES NO ANTITRUST RELEVANT THEORY OF COMPETITION: AN IRRELEVANCE THEOREM

The promise of behavioral antitrust lies in its potential to more successfully predict firm behavior than competing economic theories.⁷⁶ Proponents of behavioral

⁷⁶ Compare Friedman, *supra* note 35, with Jolls, Sunstein, & Thaler, *supra* note 36 (embracing empirical criteria for theoretical success).

antitrust claim that behavioral economics can indeed improve antitrust by updating the basic assumptions of antitrust to account for irrational behavior. This model of firm irrationality, however, is both particular and peculiar, and behavioralist advocates employ this version of firm irrationality uniformly in the service of greater antitrust intervention. This model has grown in popularity with antitrust commentators frustrated with Chicago school strictures cabinining in market interventions to a relatively narrow set of circumstances.

This behavioral antitrust model provides an incomplete and inadequate account of the relevance of irrationality for antitrust because it naïvely fails to consider both incumbents and potential entrants. The behavioralist model myopically focuses on the implications of irrationality certain *specific* market participants, usually incumbent firms or cartel members, while ignoring or assuming away the broader implications of applying an identical cognitive bias to others. A simple way to conceive of this failure familiar to antitrust lawyers and economists is the distinction between static instead of dynamic welfare.⁷⁷ Even that description, however, somewhat understates the magnitude of the behavioralist error. A more illuminating description is that behavioral models fail to account for the antitrust implications of irrationality of incumbent firms and rivals. Instead, the models naïvely assume that a given bias

⁷⁷ David S. Evans & Keith N. Hylton, *The Lawful Acquisition and Exercise of Monopoly Power and Its Implications for the Objectives of Antitrust*, 4 COMPETITION POL'Y INT'L 203 (2008); Jonathan Baker, "Dynamic Competition" Does Not Excuse Monopolization, 4 COMPETITION POL'Y INT'L 243 (2008);

applies to the monopolist alone. As a consequence, the behavioralists predict more anticompetitive behavior than “rational choice” models would conclude. Problematically, however, these behavioralist predictions impute a given cognitive bias to *only* a monopolist or *only* entrants, but not to both, or to other firms at large. There is simply no basis in the behavioral economics literature for this assumption --- and proponents of behavioral antitrust have neither attempted to justify it, nor do they appear to be aware they are making it. The naïve assumption is not likely to lead to harmless error. As we will demonstrate, this assumption drives many if not all of the policy recommendations offered by the behavioralists; without it, behavioral economics does not yet offer meaningful implications for antitrust analysis, much less the uniform preference for greater intervention assumed by its leading proponents.

In what follows, we offer a simple modification and extension of the naïve model in which both incumbents and potential entrants are one of two possible types: rational or irrational.⁷⁸ The modest extension analyzed here is designed to highlight the simple point motivating our irrelevance theorem, not to offer a comprehensive model of irrational firm behavior. In our simple model, the incumbent firm faces competition from a potential entrant. For our purposes, the potential entrant can be considered an existing rival, or rivals, without loss of generality. Thus, there are four possible

⁷⁸ For purposes of our argument, it suffices to aggregate behavioral biases together into these general categories, with the systematic presence of a behavioral bias constituting “irrationality.” The given bias claimed, of course, would impact the theoretically expected behavior.

competitive scenarios that may emerge considering the rationality of both incumbents and potential entrants: (1) rational incumbents competing against rational potential entrants; (2) rational incumbents and irrational potential entrants; (3) irrational incumbents and rational entrants; and (4) both irrational incumbents and potential entrants.

Table 1 considers each of these four permutations. We then proceed to consider the antitrust implications of firm irrationality in each of the four quadrants.

TABLE 1			
		Potential Entrants	
		Rational	Irrational
Incumbents	Rational	<p>Quadrant I</p> <ul style="list-style-type: none"> Existing analysis and law Chicago and Post-Chicago 	<p>Quadrant II</p> <ul style="list-style-type: none"> Incumbents attempt predation only if rational Entry could be too much or too little depending on bias No clear antitrust implications
	Irrational	<p>Quadrant III (“Naïve Model”)</p> <ul style="list-style-type: none"> Incumbents engage in too much or too little predation Entry responds if and only if predation is successful No clear antitrust implications 	<p>Quadrant IV</p> <ul style="list-style-type: none"> Behavioral biases distributed equally to both incumbents and potential entrants No clear antitrust implications

A. Quadrant I: Rational Incumbents and Rational Potential Entrants

Quadrant I represents the intellectual paradigm of modern antitrust analysis. Modern antitrust assumes, by employing the tools of microeconomics, that firms and consumers behave rationally. The behavioral antitrust proponents often erroneously link the rationality assumption to the Chicago School. However, the assumption of firm rationality underlying price theory and game theory is, in turn, at the core of the Chicago School, Post-Chicago School, and the Harvard School approaches to antitrust. The consensus over the utility of the rationality assumption for antitrust analysis leaves

much room for disagreement. For example, Chicagoans and Post-Chicagoans debate the relative likelihood of anticompetitive behavior such as predatory pricing, exclusionary conduct, mergers, and price-fixing; they also debate how frequently pro-competitive explanations of the same conduct are likely to hold in practice. These debates are common in economics, as they are in other scientific disciplines, and are generally resolved with empirical evidence.⁷⁹

The behavioralists appear to agree that Quadrant I represents the status quo of modern antitrust.⁸⁰ The economic analyses and methods underpinning all of modern antitrust doctrine and enforcement embrace the rationality assumption for firms, both incumbents and entrants. Anticompetitive theories of price predation, for example, are grounded in incumbents rationally developing reputations for limit pricing and entrants entering only when it is rational to do so. The economic analysis of mergers typically adopts a game-theoretic structure assuming rational competitive interactions between the merging firms before the merger, the post-merger firm and rivals after the merger, and repositioning and entry decisions.⁸¹ Modern oligopoly theory, and

⁷⁹ Joshua D. Wright, *Overshot the Mark? A Simple Explanation of the Chicago School's Influence on Antitrust*, 5 COMPETITION POL'Y INT'L 179 (2009).

⁸⁰ Rosch, *supra* note 20, at *10 ("over the last few decades, the notion that individuals and corporations behave as rational profit maximizers was generally accepted by all of the key stakeholders in the antitrust arena.").

⁸¹ For a summary of these models, see Gregory J. Werden, *Unilateral Competitive Effects of Horizontal Mergers I: Basic Concepts and Models*, in 2 ABA SECTION OF ANTITRUST LAW, ISSUES IN COMPETITION LAW AND POLICY 1319 (Wayne Dale Collins ed., 2008); Gregory J. Werden & Luke M. Froeb, *The Effects of Mergers in Differentiated Products Industries: Logit Demand and Merger Policy*, 10 J. L. ECON. & ORG. 407, 413, 418 (1994);

similarly, merger analysis involving coordinated effects, are both grounded in George Stigler's *Theory of Oligopoly*;⁸² Stigler's theory of cartels is based on the assumption that the likelihood of collusion is determined by rational responses by firms to changes in the costs and benefits of price-fixing.

The fundamental economic force at work in Quadrant I is that any monopoly power results in an incentive for rational potential entrants to enter, compete, and dissipate any available monopoly rents. Economists can and do debate about both how quickly that entry will occur and the effectiveness of antitrust enforcement and feasible remedies in the interim, but economists all recognize the tendency of rational entry to offset anticompetitive behavior in equilibrium. That force fundamentally shapes antitrust doctrine. It is one of the core insights motivating Judge Easterbrook's "error cost" approach to the design of antitrust liability rules that minimize the sum of the costs imposed by false positives and false negatives.⁸³

Rational entry in the presence of supra-competitive profits, in turn, reduces the incentive for anticompetitive behavior. Thus, rational incumbents are less likely to attempt anticompetitive strategies when success, and monopoly returns, will be fleeting at best as existing firms expand output and new entry restores the competitive, zero-profit equilibrium. This economic logic, combined with the related understanding that

⁸² George J. Stigler, *The Theory of Oligopoly*, 72 J. POL. ECON. 44 (1964).

⁸³ Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1 (1984).

the costs of a false positive will outweigh those of a false negative, provides the intellectual basis for the skeptical approach toward monopolization claims.⁸⁴

The behavioralists agree that Quadrant I characterizes modern antitrust, but object to the current state of the law on the grounds that the rationality assumption misleads courts and agencies into underestimating the frequency of anticompetitive conduct. For example, Commissioner Rosch writes:

Indeed, I think that one of the most significant insights from the behavioral economics literature is the suggestion that, because consumers will behave irrationally – which is to say that they will make decisions based on factors other than price and quality – when there is a situation with less or imperfect competition, the government should engage in consumer protection efforts in those cases rather than sitting back and waiting for a market to heal itself.⁸⁵

As we will demonstrate, the claim that incorporating irrational decision making by firms supports greater antitrust or consumer protection efforts does not hold once one moves beyond the naïve model to one in which the behavior of incumbents and potential entrants is considered.

B. Quadrant II: Rational Incumbent and Irrational Entrant

Competition between a rational incumbent and an irrational entrant does not support more interventionist antitrust policy as a general matter. While the incumbent will only engage in potentially anticompetitive behavior if he believes it will be

⁸⁴ Joshua D. Wright, *Overshot the Mark? A Simple Explanation of the Chicago School's Influence on Antitrust*, 5 COMPETITION POL'Y INT'L 179, 188 (2009).

⁸⁵ J. Thomas Rosch, *Antitrust Law Enforcement: What to Do about the Current Economic Cacophony?*, Remarks before the Bates White Antitrust Conference 10-11 (June 1, 2009) *available at* <http://ftc.gov/speeches/rosch/090601bateswhite.pdf>.

profitable, both rational and irrational entry impose an important constraint on such behavior.

Consider competition between a monopolist and an entrant whose decisions are characterized by optimism bias. Consider first the firm decision whether to attempt to engage in price predation to deter entry. Neoclassical economic theory implies a healthy dose of skepticism is appropriate concerning the comparatively small likelihood that the predatory strategy finds success in that it allows the incumbent to recoup its predatory investment in the form of monopoly profits.⁸⁶ The skepticism implied by the neoclassical approach has been adopted in US case law, which requires plaintiffs satisfy a significant burden of proof that consumers are likely to be harmed in order to prevail.⁸⁷ The skepticism derives from a view, grounded in theory and empirical evidence, that successful predation is rare. But would that skepticism be appropriate in a world with rational incumbents but irrational entrants?

The answer is yes. The skepticism concerning predation incorporated in the US approach under Section 2 of the Sherman Act is grounded in the prediction that incumbents will not be able to profitably raise prices because rival firms and potential entrants, rationally responding to supra-competitive profits, will compete away any potential for recoupment. If the incumbent will engage in predation only when it is

⁸⁶ See Frank Easterbrook, *Predatory Strategies and Counterstrategies*, 48 U. CHI. L. REV. 334 (1981); Kobayashi, *supra* note 40.

⁸⁷ See, e.g., *Brooke Group Ltd. v. Williamson Tobacco Corp.*, 509 U.S. 209 (1993); *Matsushita Elec. Indus. Co. v. Zenith Radio*, 475 U.S. 574 (1986).

profitable, *ceteris paribus*, an overly optimistic potential entrant decreases, not increases, the probability of success for a predatory scheme. Indeed, if potential entrant irrationality causes "too much" entry -- that is, entry even when there are no supra-competitive profits to be earned by the entrants -- the expected gains from predation decrease even further, suggesting that even the Quadrant I Rationality-Rationality approach overestimates the likelihood of successful predation.

The same result occurs if we assume firm time preferences are characterized by hyperbolic discounting, so that firms are irrationally biased toward "present" profits. As with optimism bias, a potential entrant with present bias will enter more frequently than rational choice models predict. Anticipating more aggressive entry, the rational incumbent will attempt predation less frequently, as the expected profits decline with an increased probability of entry. As was the case with entrants fettered by optimism bias, present bias is also likely to lead to "too much" entry; however, the inefficiencies associated with too much entry do not suggest competitive problems. To the contrary, the presence of irrational entrants can result in more competition than would otherwise prevail when all firms behave rationally.⁸⁸

⁸⁸ It is possible to devise a situation in which an irrational entrant and a rational incumbent combination lead to an increase in the likelihood of anticompetitive behavior. If, for example, the particular cognitive bias influencing the decisions of entrants results in under-optimism, future-bias, or an irrationally high degree of risk aversion, one might get sub-optimal entry. As a general matter, the behavioral economic literature has not identified these biases as ones that are commonly present in individual or group settings. Instead, the most commonly discussed biases appear to involve firms and firm employees taking on too much risk, or overestimating their probability of success. Moreover, even if these biases were prevalent, there is no reason to believe that they would be so with respect to entrants but not

The same analysis applies in the context of mergers rather than predation. Consider the case of a rational merging parties and irrational entrants. The economic dynamics are identical. Rational firms anticipate the profitability of the merger as a function of, in part, the competitive responses of rivals. Here, optimistic or hyperbolically discounting entrants, for example, would enter not only when predation might be successful and thus offer the prospect of monopoly rents, but also even when the merger does not create any market power. Further, to the extent that Quadrant II offers any antitrust implications whatsoever, the existence of irrationally optimistic potential entrants policing for the existence of supra-competitive profits, and even entering in their absence from time to time, reduces the incentive to engage in all sorts of anticompetitive behavior.⁸⁹

incumbents. A behavioralist theory of anticompetitive behavior vis-à-vis a “negative” cognitive bias would require, at a minimum, a theory as to how such a bias would aggregate to the firm level, why such a bias would only occur for entrants, and how such a bias might be detected – all with sufficiently low administrative and error costs to justify enforcement. *See generally supra* Part I.

⁸⁹ Professor Avishalom Tor’s thoughtful paper, *The Fable of Entry*, provides an apposite analysis on this point, specifically citing various optimism biases to attempt to establish the general irrationality of potential entrants. Professor Tor collects empirical data suggesting that entry into most markets is a more dire value proposition than most entrepreneurs realize. Nevertheless, Tor concludes, entry persists because of the optimism bias, the desirability bias, and entrepreneurs’ illusions of control over the destiny of their firms. Tor thereby concludes that “most startups . . . pose no short-term competitive threat to incumbents” and that barriers to entry do not ameliorate this problem, but that the “few successful boundedly rational innovative entrants are an important source of competitive pressure on incumbents.” However, Professor Tor does not offer an adequate explanation as to why such an optimism bias can and should only be ascribed to entrant firms, or why it vanishes under the auspices of when an “entrant” becomes an “incumbent,” a critical failing that imperils the logical consistency of some of his findings. Nevertheless, to the extent that we accept Professor Tor’s distinction, we are compelled to note – in which Professor Tor shares in part – that this optimistic “over-entry,” if it can be called as such, almost certainly provides pro-competitive surplus to consumers as incumbents face a constant and unstable myriad of challenges from irrationally aggressive entrants. This, as we note above, would cause the dissipation of potential monopoly profits *faster* than classical economic theory would predict, and, if anything, should

C. Quadrant III: Irrational Incumbent and Rational Entrant (Naïve Model)

The second possibility involving non-uniform assignment of rationality involves an irrational incumbent facing rational entrants. For the purpose of antitrust analysis, this Quadrant offers no plausible antitrust implications. So long as the assumption of rational entry is held, anticompetitive behavior that successfully creates monopoly rents --- whether that behavior was rational or otherwise -- will result in entry. In this way, Quadrant III is not unlike Quadrant I in the core of its policy prescriptions: as anticompetitive behavior will result in entry from potential entrants, antitrust intervention should be a tool reserved for cases of “last resort,” instances in which there are substantial barriers to entry. In sum, Quadrant III does little to distinguish itself from the recommendations of the Chicago School.

We describe Quadrant III as the “Naïve Model” because many have discussed firm irrationality in the antitrust context in a related manner. This is a bit of an oversimplification. As discussed above, many explorations of the relevance of firm irrationality to antitrust ignore entrants entirely, focusing instead of the irrationality of an incumbent monopolist, a cartel, or merging parties. The underlying assumption in these models is either that entry can be ignored, or, if it is to be considered, that entrants are fully rational. In both cases, these assumptions lead to mistaken policy

chasten behavioralists against monopolization claims in contexts where at least potential entry is frequent. After all, in Professor Tor’s words, “overconfident entrants . . . serv[e] as the cannon fodder of innovation.” Avishalom Tor, *The Fable of Entry, Bounded Rationality, Market Discipline, and Legal Policy*, 101 MICH. L. REV. 482, 487 (2002).

prescriptions. In the former case, omitting the dynamics of entry in antitrust analysis leads to incomplete analysis for obvious reasons. In the latter, the proponents of behavioral antitrust do not seem to have fully worked out the implications of their model.

Several examples of Quadrant III “Naïve Model” thinking bear analysis. Professor Tor and William J. Rinner present such an example, assuming irrationality of manufacturers who impose vertical resale price maintenance (“RPM”) regimes on downstream distributors.⁹⁰ Tor and Rinner explain at some detail various psychological effects that might inspire a manufacturer to rely on RPM when unnecessary in light of potential procompetitive reasons, such as avoiding free-riding.⁹¹ Tor and Rinner cite several framing effects as potentially undergirding this irrational overuse of RPM, including anchoring effects, availability biases, and representativeness biases.⁹² They further reiterate the behaviorist bias of loss aversion as explaining why a manufacturer might resist price-cutting downstream even when available information might suggest the expected gains from price-cutting meet or exceed the expected losses.⁹³ Accordingly, Tor and Rinner suggest altering the Rule of Reason inquiry in RPM cases to allow a plaintiff complaining of RPM to demonstrate an “output

⁹⁰ Avishalom Tor & William J. Rinner, *Behavioral Antitrust: A New Approach to the Rule of Reason after Leegin* (University of Haifa Faculty of Law Legal Studies Research Paper Series, December 2009), available at <http://ssrn.com/abstract=1522948>.

⁹¹ *Id.* at 27-29.

⁹² *Id.* at 19-22.

⁹³ *Id.*

decreased following the employment of the practice, a showing that would indicate its anticompetitive or boundedly rational and excessive nature.”⁹⁴ Tor and Rinner imply this substitution – that a practice may fall afoul of the antitrust laws by virtue of anticompetitive effects *or* by demonstrating it comported with bounded rationality – is sufficient in establishing the antitrust plaintiff’s prima facie case.

What Tor and Rinner fail to explain, however, is why the above biases apply uniquely to manufacturers of a given good, and not their distributors, their suppliers, consumers, or their rivals. One would expect a rational potential entrant into a market dominated by irrational RPM to engage in rational substituting of inputs in order to reap short-run supra-competitive profits in their current enterprise. Similarly, one would expect rational suppliers to attempt to capture gains from downstream manufacturers employing anticompetitive RPM, and thereby to engage in additional vertical integration to the extent possible, thereby competing away the irrational manufacturer’s profits. At no point are these possibilities discussed.⁹⁵

⁹⁴ *Id.* at 66.

⁹⁵ Though not central to our theoretical critique of Tor and Rinner’s behavioral account of RPM, the paper also does not attempt to make consistent its theory of irrational and non-maximizing use of these contractual arrangements with evidence that the practice has been employed by manufacturers and retailers in a diverse set of industries since at least the introduction of Alfred Marshall’s famous microeconomics textbook. See William Breit, *Resale Price Maintenance: What Do Economists Know and When Did They Know It?*, 147 J. INSTITUTIONAL & THEORETICAL ECON. 72, 72 (1991). It is difficult to reconcile the persistence of these contracts over time as an economic phenomenon with the claim that firms have not yet learned that they are not in their best interest. On the economics of RPM generally, Kenneth G. Elzinga & David E. Mills, *The Economics of Resale Price Maintenance*, in 3 ISSUES IN COMPETITION LAW AND POLICY 1841 (ABA Section of Antitrust Law 2008)

Professor Maurice Stucke and Amanda Reeves similarly offer a panoply of examples of the Naïve Model in their aptly-named *Behavioral Antitrust*.⁹⁶ Stucke and Reeves begin with cataloguing the various behavioral biases briefly summarized above before cursorily addressing why, for purposes of their paper, these biases may be fairly imputed to firms rather than individuals.⁹⁷ Stucke and Reeves then proceed to make several major claims as to how behavioral economics may shape antitrust policy, including by overturning two key assumptions: (1) that rational profit-maximizers defeat the exercise of market power in markets characterized with low entry barriers (or, as per our model, rational entrants), and (2) that companies merge to generate significant efficiencies (as per our model, irrational incumbents).⁹⁸

⁹⁶ Amanda P. Reeves & Maurice E. Stucke, *Behavioral Antitrust* (University of Tennessee Legal Studies Research Paper No. 106, March 2010), available at <http://ssrn.com/abstract=1582720>.

⁹⁷ It should be noted that while Stucke and Reeves offer three primary reasons why behavioral economics is relevant to firm-scale behavior, each of these observations actually is a defense as to why *individual actors*, as opposed to firms, enjoy a substantial impact on the marketplace. Stucke and Reeves argue that (1) “firms behave irrationally [because] . . . bounded rational employees act[] contrary to the firms’ long term interests,” (2) “bounded rationality . . . can affect competition through the individual behavior of the millions of atomistic self-employed workers who supply their services or products into the supply chain,” and (3) “bounded rationality . . . can affect competition through the individual behavior of hundreds of millions of consumers.” *Id.* at 19-20. We leave the analysis of the veracity of any of these statements for another paper. Nevertheless, even assumed as true, none of these defenses of the application of behavioral economics to antitrust explain why *firms*, so arranged, *themselves* behave in systematically irrational manners, much less serve to predict the necessary or sufficient conditions under which they will do so. The argument appears to simply rely on the fact that firms are run by people, who in turn, suffer from behavioral anomalies. As discussed above, this view misunderstands the economic nature of the firm. See also Rosch, *supra* note 85, at 11 (“After all, firms – and particularly the middle managers in firms – are just collections of individuals.”). While any of these circumstances may (or may not) justify behavioralist insights in a pure consumer protection context – which Stucke & Reeves then proceed to cite the UK’s experiences thereby – none of these statements suffice as an explanation of firm behavior for antitrust purposes.

⁹⁸ *Id.* at 40-52.

Stucke and Reeves begin their former charge by directly gainsaying the rationality assumption in the monopolization context.⁹⁹ They set out the Quadrant I assumptions: “that supra-competitive prices will attract rational profit-maximizing firms, [] these new entrants will replenish the lost output, and [] as a result of entry, prices will return closer to marginal cost.”¹⁰⁰ This assumption, however, is defective to Stucke and Reeves because “the behavioral literature identifies two market-entry error types” – excess and insufficient entry.¹⁰¹ Stucke and Reeves discuss various behavioral biases – the optimism bias, risk-aversion, and so on – in their appropriate context, explaining how an irrational potential entrant might be too eager to compete away nonexistent monopoly profits, or, in the alternative, too hesitant to enter a market with supra-competitive profits. Paradoxically, however, Stucke and Reeves do not go so far as to even intimate whether potential entrants may be more or less than optimally likely to enter into a given market; they merely assert that either is possible, and that behavioral principles must thereby inform antitrust analysis wherever the “entry assumption” is applicable.¹⁰² This presents a particularly convoluted version of the Naïve Model: Stucke and Reeves explain that potential biases exist both above and beneath the assumed optimal level, without indicating whether one is more or less likely, nor how one might discern whether insufficient or excessive entry is taking place

⁹⁹ *Id.* at 40-47.

¹⁰⁰ Reeves & Stucke, *supra* note 95, at 40.

¹⁰¹ *Id.* at 42.

¹⁰² *Id.* at 43.

in a specific market.¹⁰³ Without further guidance, one can only discern that Stucke and Reeves view entry as an insufficient deterrent against the one constant – the excessive, irrational predations of a hypothetical monopolist.

Stucke and Reeves fare no better in discussing mergers. They begin by reiterating the assumption that procompetitive justifications dominate the merger context.¹⁰⁴ Quickly thereafter, however, they cite a recent behavioral economics experiment to demonstrate that loss avoidance might explain why merging parties “overbid” in acquiring smaller firms or divisions. Stucke and Reeves then explain that further visitation of actual efficiencies vis-à-vis economies of scale is necessary to see whether “the claimed efficiencies actually materialize.”¹⁰⁵ At no point do Stucke and Reeves explain, however, why an *inefficient* merger by an irrational incumbent – beplagued with loss-aversion or a similar bias demanding an acquisition that does not increase efficiencies – would not be responded to by efficient rivals. Specifically, if an incumbent firm has engaged in an inefficient merger, we can presume that its production costs have risen in a manner presumably not justified by an increase in quality. This inefficient merger would result in larger potential margins for entrants,

¹⁰³ *Id.* at 43-47.

¹⁰⁴ *Id.* at 47-48.

¹⁰⁵ *Id.* at 42.

and, *ceteris paribus*, more entry into a competitive market.¹⁰⁶ These consequences are not discussed.

It is difficult to conceive of situations in which Quadrant III, with irrational incumbents and rational entrants, would describe the real world. If one were to indulge the unlikely behavioralist assumption that irrationality might reside only on one side of the incumbent/entrant divide, one might think that experience in the market (generally associated with incumbency) would tend to mitigate, rather than aggravate, biases. Moreover, as discussed, this sort of sharp distinction between assignment of rational decision making or of a particular bias to incumbents but not other firms simply cannot be justified by the existing data. The distinction is rendered useless by the realities of modern antitrust enforcement, involving firms like Google, Intel, Apple, and Microsoft, who are incumbents in some markets, new entrants in others, and potential entrants in countless more.

D. Quadrant IV: Irrational Incumbents and Irrational Entrants

If one assumes *arguendo* that the behavioralists are correct concerning the irrationality of firms, Quadrant IV is the most relevant possibility. As discussed above, to the extent the behavioral economics literature can be said to support the possibility of irrational firm behavior, there is no economic or empirical basis upon

¹⁰⁶ This, of course, assumes entry is possible; one might even point to Stucke and Reeves to postulate that exceptionally optimistic – irrationally optimistic – entrants would be immediately tempted to prey upon an incumbent's moment of weakness.

which to assume that the cognitive biases suffered by firms will be felt by incumbents but not their rivals. While we discuss those possibilities in Quadrants II and III, a far more realistic approach to modeling firm irrationality is to explore the competitive implications of assuming interactions between irrational incumbents and irrational entrants.

While the behavioralists claim that incorporating firm level irrationality into the antitrust policy calculus supports greater intervention, we demonstrate that their analysis is incomplete. The critical omission is that the models selectively assign irrationality to incumbents but not other firms; in the alternative, many of these models do not consider the economic implications of competition from potential entrants, irrational or otherwise. Once one considers competition between an irrational incumbent and an irrational entrant, the policy implications of the model, much less the preferred interpretation of advocates of behavioral antitrust, disappear.

In fact, we offer a general irrelevance theorem for behavioral antitrust in Quadrant IV: *competition between incumbents and entrants with the same behavioral biases does not generate any clear antitrust policy implications.* Consider a concrete example with competition between an incumbent and potential entrant who hyperbolically discount profits (or suffer from optimism bias). Assume the bias is distributed uniformly to all firms. For any such bias, the competitive implications are inherently ambiguous relative to the Quadrant I status quo. In the case of optimism bias, consider the

implications for the incumbent. It is true that an irrationally optimistic incumbent may attempt to predate more often than predicted by rational choice theories. This is what the advocates of behavioral antitrust appear to have in mind when they articulate preferences for more interventionist antitrust policy than required if firms behave rationally. Notice, however, that the first order competitive effects of assuming present-biased or irrationally optimistic entrants militate *against* antitrust intervention. The same bias, when applied to entrant firms, suggests *excessive* entry and *more* competition for the incumbent than one would predict under Quadrant I, and, indeed, under the Chicago School models from which the behavioralists attempt to distance themselves.¹⁰⁷

This result is not a mere artifact of selecting these particular biases or considering predation rather than cartel or merger behavior. For example, consider the class of behavioral biases that would result in the incumbent taking on sub-optimal levels of risk.¹⁰⁸ Assigning this class of biases to both incumbents and entrants does not generate antitrust implications. On the one hand, one would predict that the incumbent attempts risky predation strategies less often than under Quadrant I assumptions, implying even less of a role for antitrust; on the other hand, one would predict less entry under this

¹⁰⁷ See Rosch, *supra* note 85, at 2 (“While the orthodox Chicago School of economics has long been at the forefront of antitrust analysis, there are several other economic theories percolating under the surface that I believe supply a better understanding of how market participants – more specifically sellers and buyers – actually behave”). Commissioner Rosch contends that behavioral economics shows “that free-market ideology is fundamentally incomplete because it fails to account for the fact that human irrationality infects human decision-making and, thus, decisions that govern how the market actually (as opposed to hypothetically) functions.” *Id.* at 11.

¹⁰⁸ For behavioral biases that result in firms accepting “too much” risk relative to optimal levels, the analysis is identical to competition with present-bias or optimism bias.

model. Again, the competitive effects point in opposite directions. The behavioral economics literature, even assuming *arguendo* the veracity of its findings and the seamless extension of those findings from individuals to firms, provides no basis to assume that biases fetter the business decisions of incumbents but not entrants. Further, the behavioral economics literature provides zero economic or empirical bases to suggest that the balance of opposing competitive effects is either pro- or anti-competitive on average.

In short, our irrelevance theorem provides a challenge to behavioral antitrust advocates. The claim that firm irrationality supports changes in antitrust policy, and in particular more aggressive antitrust enforcement, are based on an incomplete and misleading account of irrationality. We contend that if behavioral biases were to be relevant at the firm level, an assumption we do not think is currently borne out in the data, Quadrant IV would be the most realistic competitive model. However, the consumer welfare effects of the set of assumptions in Quadrant IV relative to the Chicago / Harvard/ Post-Chicago antitrust nexus in Quadrant I are ambiguous. Whenever a cognitive bias suggests that an incumbent engages in more anticompetitive behavior, whether predation, merger, or collusion, the assumption of irrationality implies greater anticompetitive behavior; but the same bias applied to the potential entrant implies that competition from rivals is a greater constraint on the incumbent than would be the case under Quadrant I. Similarly, whenever a cognitive bias implies

less anticompetitive conduct on the part of the incumbent (or existing firms), the immediate policy implication is to reduce the role for antitrust enforcement; however, when the same bias is assigned to potential entrants, the role of entry in disciplining competitive behavior is reduced. In both cases, and we posit, as a general rule, the offsetting nature of these competitive implications is not resolvable as a matter of behavioral economic theory or empirical evidence. Thus, we conclude that behavioral economics does not offer an antitrust-relevant theory of competition.

To the extent that the behavioral law and economics movement embraces the challenge of producing more accurate models of behavior and market outcomes, this is a challenge that the behavioral antitrust advocates must overcome in order to derive meaningful antitrust implications. As discussed above in our analysis of Quadrants II and III, it is possible to derive at least tenuous policy implications if one is willing to assume that not only some firms, but all types of firms, are predictably irrational in a very idiosyncratic manner.

We certainly do not claim that behavioral economics cannot or will not continue to develop in a manner that suggests a more clear reason for behaviorally-informed antitrust. The field is relatively new. New theoretical or empirical insights may emerge to challenge our view. To be clear, we currently do not believe that the state of the literature supports any assumption that firms behave in systematically predictable ways with clear policy implications that would improve antitrust enforcement. Nonetheless,

our goal in this paper has not been to challenge the behavioral literature itself on theoretical or empirical grounds. Instead, assuming robust empirical findings that can be extended to firms, our primary goal is to demonstrate both that: (1) existing discussions of the role of irrationality in designing antitrust policy have been incomplete and inadequate; (2) correcting the omissions in these discussions results in a relationship between irrational firm behavior, competition, and antitrust policy with far greater complexity and nuance than has been suggested; and (3) if one assumes the same bias is distributed to both incumbents and potential entrants, behavioral economics does not generate any meaningful antitrust policy implications, much less support the view that antitrust enforcement should be any more aggressive than optimal policy requires under the assumptions adopted by the price theorists and game theorists of the Chicago and Post-Chicago Schools, respectively.

IV. THE FUTURE OF BEHAVIORAL ANTITRUST

We suspect that current attempts to create a behaviorally-informed antitrust policy will ultimately fail for two reasons. The first is that, as discussed above, we are skeptical that behavioral economics currently offers antitrust policy-relevant insights. Without improving explanatory power of firm behavior relative to the mainstream economic models incorporating the rationality assumption, there will be little use for behavioral economic analyses of business phenomena. The second reason that we

suspect behavioral economics will not shift antitrust policy is that we believe courts will be reluctant add it to their analytical toolkit. We discuss each in turn.

A. Behavioral Antitrust is Not Ready for Prime Time

Behavioral economics does not add significant explanatory power concerning the behavior of firms over and above existing theories. As we demonstrated above, even if one assumes the veracity of the behavioral findings in the context of firm rather than consumer behavior, distribution of the same bias to all firms weakens, if it does not eliminate entirely, the predictive power of behavioral antitrust. Put bluntly, we do not believe that behavioral economics currently offers antitrust-policy relevant insights. Indeed, despite its remarkable emergence in other areas associated with consumer protection, and in particular recent regulatory interventions aimed at debiasing consumer choice, we suspect that attempts to create a behaviorally-informed antitrust will ultimately fail if the behavioral account does not add explanatory power.

As George Stigler famously noted, “it takes a theory to beat a theory.”¹⁰⁹ Currently, behavioral economics cannot supplant the existing body of theoretical knowledge underlying the core of antitrust -- what we describe as Quadrant I above. Of course, behavioral economics is a remarkably young branch of economic theory at this point, and a successful one as measured by general popularity, incorporation into

¹⁰⁹ George Stigler, Graduate School of Business, University of Chicago, Nobel Memorial Lecture: The Process and Progress of Economics (Dec. 8, 1982), in NOBEL LECTURES, ECONOMICS 1981-1990 (Karl-Göran, Mäler ed., Singapore 1992) at 67.

policy debates, and acceptance in regulatory circles. Behavioral economics is likely to adapt and change over time, make important discoveries, and focus on new problems. The thrust of our analysis is not that behavioral economics fails to offer important insights about individual behavior generally, or that it should not contribute to debates over optimal regulation generally. Rather, in the antitrust-specific context -- even if one accepts with full confidence the findings of the behavioral literature, and even if one further assumes those biases can be imputed to firms -- behavioral economics cannot yet generate intellectually consistent policy implications. Whether this feature is limited to antitrust or to other areas of regulation aimed at firms is a question we leave for another day.

Our skepticism concerning behavioral antitrust is not without limit. As we have acknowledged above, to the extent that behavioral economics generates useful insights about consumer behavior in product markets, like all economics, it can be a useful tool. Thus, we fully expect that behavioral economics will continue its research agenda aimed at documenting systematic deviations from rational choice. Perhaps behavioral economics will inform the optimal design of disclosure regulations to debias individual decisions. Perhaps not. In either event, it is not much about antitrust. Standard antitrust analysis already incorporates actual consumer behavior into its analysis through concepts like market power, the hypothetical monopolist test, and demand elasticities which measure consumer responsiveness (with or without cognitive biases)

to changes in prices and other market conditions. Insights about individual consumer behavior, should they be forthcoming, do not require a shift in antitrust policy. All that is required is what behavioral antitrust advocates have claimed behavioral economics gives us: a theory of systematic and predictable deviation from rational choice by firms. But that claim, for the reasons discussed in Part III, is based upon a Naïve Model of irrationality and fails.

B. Post-Chicago School Versus Behavioral Antitrust

The rise of behavioral economics, and the call for behavioral antitrust, should be placed in a historical context. Behavioral economics is not the first challenge to the existing economic paradigm of antitrust analysis. The last was the Post-Chicago School, which reached the zenith of its influence in the early 1990s with the Kodak decision, but has generally failed to have the influence in courts that its proponents had hoped for. The experience of the Post-Chicago School provides a useful comparison for the purposes of predicting the future of behavioral antitrust.

As it was with previous challengers such as the Post-Chicago School and its use of game theory to challenge the dominant theoretical underpinnings of modern antitrust, the appropriate way to evaluate such a challenge is on the basis of predictive power. Behavioral economics is, in this respect, no different. All new antitrust theories

must ultimately rise or fall on their predictive power as borne out in the data.¹¹⁰ Its ultimate success as an important part of antitrust economics will turn on whether it can generate testable implications, supported by evidence from real world product markets, which can provide the basis for policy-relevant changes. While the Chicago School "revolution" was successful in large part because, as Judge Posner has described, the tools of price theory outperformed the industrial organization literature of the 1950s and 1960s with its "casual observations of business behavior, colorful characterizations, eclectic forays into sociology and psychology, descriptive statistics, and verification by plausibility" which regulatory generated "propositions that contradicted economic theory."¹¹¹ Compared to the introduction of price theory, the Post-Chicagoans and game theory have found only limited success in the federal courts in the United States; though they have enjoyed much greater success in enforcement agencies in both the United States and abroad. But make no mistake, the general experience with game theory and antitrust has been underwhelming in its impact.¹¹²

¹¹⁰ Joshua D. Wright, *Overshot the Mark? A Simple Explanation of the Chicago School's Influence on Antitrust*, 5 COMPETITION POL'Y INT'L 179 (2009).

¹¹¹ Richard A. Posner, *The Chicago School of Antitrust*, 127 U. PENN. L. REV. 925, 928-29 (1979).

¹¹² See Bruce H. Kobayashi, *Game Theory and Antitrust, A Post-Mortem*, 5 GEO. MASON L. REV. 411, 412 (1997) (criticizing the application of game theory in antitrust on the grounds that "game theoretic models of [industrial organization] have not been empirically verified in a meaningful sense"). See also David Evans & Jorge Padilla, *Designing Antitrust Rules for Assessing Unilateral Practices: A Neo-Chicago Approach*, 72 U. CHI. L. REV. 73, 98 (2005) ("it has yet to demonstrate a capacity to produce what we would call identification theorems—useful descriptions of the circumstances determining whether a practice is procompetitive or anticompetitive"). See also Joshua D. Wright, *Overshot the Mark? A Simple Explanation of the Chicago School's Influence on Antitrust*, 5 COMPETITION POL'Y INT'L 179 (2009).

While comparisons between behavioral economics and the Post-Chicago School may be tempting, their extent is as of yet uncertain. On the one hand, both have been criticized on the grounds that they produce too many possible equilibria to be useful in practice and are devoid of testable implications. In the behavioral context, the combination of possible biases, lack of knowledge about the distribution of those biases and their extent, and rejection of the link between revealed preference and welfare gives rise to an infinite range of potential market outcomes under most behavioral models. Indeterminate predictions, to be sure, are at least one cause of the reluctance to adopt game theoretic models; in our view, the indeterminacy concerns arising out of behavioral antitrust are considerably more serious.

There are other points of comparison by which behavioral antitrust can be expected to fare worse than Post-Chicago economics in terms of adoption and impact. For example, game theory as an economic science was more mature than behavioral economics in terms of its general acceptance in the economics literature at the time it arose to challenge the Chicago School paradigm. Behavioral antitrust requires assumptions about deviations from rational choice. This raises unique problems that the Post-Chicagoans did not face. As discussed above, one must provide a convincing account of individual biases aggregating up to firms in a meaningful and predictable

way. Moreover, one must account for the possibility of irrational regulators.¹¹³ Lastly, while behavioral economics' irrationality assumption is an enormous departure from standard economic theory, the Chicago and Post-Chicago Schools had much in common. For example, both view economic theory as the only lens through which to analyze antitrust issues to the exclusion of other political and social goals).

Despite these commonalities, and despite the relatively favorable conditions for a game theoretic antitrust revolution in the United States, the Post-Chicago economic framework has had only a modest impact on U.S. competition policy and very little in the courts after the Supreme Court's decision in *Kodak*.¹¹⁴ By way of contrast, the passage to successful incorporation into modern antitrust analysis appears quite narrow for behavioral economics, if not entirely blocked by the failure to generate testable implications of policy relevance.

The federal courts themselves represent an important aspect of this necessary failure. Antitrust law is, after all, developed through federal common law. Incremental decisions have shaped antitrust doctrine, informed by economic theory and evidence,

¹¹³ Richard A. Posner, *Treating Financial Consumers as Consenting Adults*, WALL ST. J. (July 22, 2009), available at <http://online.wsj.com/article/SB10001424052970203946904574302213213148166.html>.

¹¹⁴ *Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451 (1992). In aftermarket "lock-in" cases most closely resembling the Post-Chicago theories in *Kodak*, lower courts have "bent over backwards to construe *Kodak* as narrowly as possible." See Herbert Hovenkamp, *The Reckoning of Post-Chicago Antitrust*, in POST-CHICAGO DEVELOPMENTS IN ANTITRUST LAW 8 (Antonio Cucinotta et al. eds., 2002); see also David A.J. Goldfine & Kenneth M. Vorrasi, *The Fall of the Kodak Aftermarket Doctrine: Dying A Slow Death in the Lower Courts*, 72 ANTITRUST L.J. 209 (2004). See also Bruce H. Kobayashi & Joshua D. Wright, *Federalism, Substantive Preemption, and Limits on Antitrust: An Application to Patent Holdup*, 5(3) J. COMP. L. & ECON. 469, 484-86 (2009).

since the Sherman Act's passing in 1890. However, lack of predictive power is not simply a problem from an economic perspective. As Ginsburg & Moore observe, “the [behavioral law and economics] literature in its present state—is of little if any utility to a court. We think it highly unlikely, even in the long run, that courts will view any particular area of law—consumer protection and antitrust law included—let alone the law more generally, through the lens of BE.”¹¹⁵

V. CONCLUSIONS

The irony of the foregoing flaw with behaviorally-informed antitrust is not lost when one recalls the purpose of introducing behavioral economics to the law and economics movement was to increase the “R-squared” of the law and economics enterprise.¹¹⁶ This critical failing is not limited to behavioral economics variants on antitrust theory. Indeed, the very purpose of economic discipline in the first place – back to the New Learning – was to increase the predictive power, and thereby consumer gains, of antitrust enforcement. When the existence of an alternative model of firm or consumer behavior is a sufficient precondition for an alternate antitrust policy, we risk the central gain of economics in antitrust in the first place: intellectual discipline and a guiding principle, unmoored from prior assumptions, on which

¹¹⁵ Douglas H. Ginsburg & Derek W. Moore, *The Future of Behavioral Economics in Antitrust*, 6(1) COMPETITION POL'Y INT'L 89 (2010).

¹¹⁶ Christine Jolls, Cass Sunstein & Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1487 (1998).

antitrust policy may be rest. The last near half-century of growth and innovation evince the consumer gains yielded from this more consistent, and more modest, approach.

The proponents of behaviorally-informed antitrust have thus far avoided a methodological discussion of their approach. This is an inherently dangerous path for both consumers as well as the antitrust discipline itself. Recent calls for disregarding fundamental observations undergirding antitrust enforcement – such as the existence of “false positives” informing caution in condemning competitively ambiguous practices¹¹⁷ – only serve to exacerbate this risk. There is a danger, as Commissioner Rosch indirectly alluded, to behavioral economics being deployed not in the service of increasing antitrust’s economic discipline, but in abandoning methodological discipline altogether. Economists of all inclinations should reject this ideological opportunism. To fulfill its promise of providing greater predictive power to both law and economics and to antitrust, behavioral economics must begin by demonstrating it can provide testable implications and that these implications may yield a more robust and accurate account of both firm and consumer behavior. Until then, we must maintain our observation as to the tentative irrelevance of behavioral economics in antitrust.

¹¹⁷ See, e.g., Christine Varney, noting that “I think the more people in the bars start rejecting this idea of false positives the better off we’re going to be.” Posting of Joshua D. Wright to Truth On The Market, <http://www.truthonthemarket.com/2009/02/22/doj-aag-designate-christine-varney-on-section-2-europe-google-a-puzzling-statement-about-error-costs/> (Feb. 22, 2009).