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The Growing Pains of Behavioral Law and Economics

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Can There Be a Behavioral Law and Economics?

*Samuel Issacharoff**

I. INTRODUCTION	1729
II. THE BEHAVIORAL CRITIQUE OF LAW AND ECONOMICS	1731
III. IMPLEMENTING BEHAVIORAL LAW AND ECONOMICS	1734
A. <i>The Endowment Effect</i>	1734
B. <i>Other Decisional Biases</i>	1737
C. <i>Other Decisional Heuristics</i>	1740
IV. ISSUES FOR THE FUTURE	1741
V. CONCLUSION	1744

I. INTRODUCTION

The emergence of the modern law and economics analysis generally is dated to the early 1960s with the publication of seminal work by Ronald Coase¹ and subsequently by Guido Calabresi and Douglas Melamed.² These articles laid the foundation for the relation between legal rules, wealth maximization, and transaction costs, which provided the pivotal application of economic analysis to legal problems.³ However, the current sweep of law and economics would have been inconceivable without Gary Becker's insight into the application of neoclassical comparisons of marginal utility to the stuff of everyday life.⁴ Becker's analysis of routine decision making in terms of the likely returns from marginal choices allowed for the expansion of law and economic analyses into virtually every area of

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1. See R. H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

2. See Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1095 (1972) (discussing allocation of resources).

3. See James E. Krier & Stewart J. Schwab, *Property Rules and Liability Rules: The Cathedral in Another Light*, 70 N.Y.U. L. REV. 440, 441 (1995) (discussing transaction costs).

4. See GARY S. BECKER, *THE ECONOMIC APPROACH TO HUMAN BEHAVIOR* (1976).

law. This approach is the keystone for Richard Posner's introduction of the law and economics methodology:

[E]conomics is the science of rational choice in a world—our world—in which resources are limited in relation to human wants. The task of economics, so defined, is to explore the implications of assuming that man is a rational maximizer of his ends in life, his satisfactions—what we shall call his “self-interest.” Rational maximization should not be confused with conscious calculation. Economics is not a theory about consciousness. Behavior is rational when it conforms to the model of rational choice, whatever the state of mind of the chooser.⁵

Clearly, the conception of rational utility calculations is key to this law and economics approach. But this conception is impossible without further simplifying assumptions. The most apparent assumptions are that, first, behavior could be presumed rational only when it conformed to the model of utility maximization, and second, that departures from this model would be random and would therefore not affect the overall power of the economic analysis. The combined effect of these initial assumptions in turn allows law and economics to operationalize its insights. Since virtually all law and economics scholarship exists at the theoretical plane, turning on formal models rather than observed behavior, the presumption of behavior conforming (in the aggregate) to the economic predictions was an indispensable move. To the extent that this economic model tried to understand individual patterns of thought, it relied on a highly reductionist view of the human psyche:

[T]he economic approach does not assume that decision units are necessarily conscious of their own efforts to maximize or can verbalize or otherwise describe in an informative way reasons for the systematic patterns in their behavior. Thus it is consistent with the emphasis on the subconscious in modern psychology.⁶

Such attribution of microeconomic strategies to the human subconscious is not only extremely suspect; it serves to highlight the reductionist assumptions necessary for translating this first generation of applied economic insights into models of individual behavior. This reductionism invited a second-generation inquiry into the extent to which the law and economics methodology could survive outside the hermetically sealed environment of formal models. What if it were possible to relax the assumptions about human behavior and actually

5. RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 3-4 (3d ed. 1996) (footnote omitted).

6. BECKER, *supra* note 4, at 7.

observe how individuals behave? What if in turn it were possible to use the resulting psychological insights to refine both legal analysis and legal rules to anticipate departures from presumed rational responses? The result could be, to quote a truly felicitous phrase, "economics with a higher R^2 ."⁷ Or, put more aggressively, "The future of economic analysis of law lies in new and better understandings of decision and choice."⁸

While I share the enthusiasm for a richer understanding of the behavioral dynamics of market actors, I wish to issue some cautions prior to the declaration of victory over more established economic analyses of the law. I offer these cautions as someone who has actively participated in developing the experimental economic literature and in seeking to apply it in the development of legal norms. But I also believe that in order to assess the prospects of behavioral law and economics it is necessary to understand the analytic strengths of the traditional law and economics model and to compare these to the development thus far of behavioral economics. I will structure this Essay accordingly and conclude with some observations about further developments both in behavioral economics and related fields.

II. THE BEHAVIORAL CRITIQUE OF LAW AND ECONOMICS

One of the obvious strengths of law and economics is that it provides a methodology that corresponds to the regulatory command of law. Law seeks to channel citizen behavior by providing incentive structures for life's decisions, from the reward structures of vested benefits or tax subsidies to the more obvious deterrent incentives of the penal code. At the heart of law and economics stands the idea that comparisons of utility, the cost and benefit of engaging in a particular course of conduct for a particular actor, can discipline the analysis of how legal rules should be structured. In turn, the disciplined analysis provided by law and economics can direct the regulatory mission of law so as to avoid regulatory missteps.

Perhaps less obvious, but no less essential, is another strength of law and economics: the ability to draw operational conclusions

7. Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1487 (1998).

8. Cass R. Sunstein, *Behavioral Analysis of Law*, 64 U. CHI. L. REV. 1175, 1175 (1997).

from its analytic inquiry. The key to understanding the operationalization of law and economic insights requires that the underlying economic assumptions about human behavior be spelled out in greater detail. At this point, it is possible to identify five separate components of the critical behavioral assumptions made by law and economics analyses: First, that humans respond rationally to the cost and benefit incentives placed before them;⁹ second, that they are capable of calibrating different utility comparisons across shifting time and informational barriers; third, that they invest in acquiring information that would better inform their interutility comparisons; fourth, that they make these calculations accurately, or more precisely, that any departures from accuracy are the product of random error that would in turn wash out in the grand statistical pool;¹⁰ finally, that alterations in the incentive structures produce corresponding alterations in behavior.

Behavioral models challenge each of these assumptions. First, and most critically, behavioral studies show that humans use fundamentally defective heuristics to simplify choices made under conditions of uncertainty.¹¹ Repeated experimental studies also demonstrate that the ability to engage in precise Bayesian comparisons of likely returns to alternative courses of conduct, particularly over time, are deeply suspect, if not preposterously naive.¹² Rather, these studies reveal that not only do people routinely rely on limiting heuristics to process information, and thereby not invest in additional information, but that such further investment would likely be counterproduc-

9. Richard Posner summarizes the rationality requirement as turning on three major steps: that the demand curve is downward sloping in that demand will fall as price rises, see POSNER, *supra* note 5, at 4; that prices reflect current marginal costs and remain independent of original "value" of goods, see *id.* at 6-7; and that, consistent with the Coase Theorem, resources will gravitate to the user who can best profit from them, see *id.* at 11. The critical literature on each of these three points is summarized in Jolls et al., *supra* note 7, at 1483.

10. The classic application of this insight comes with the Priest-Klein hypothesis, which posits that, because disputes will escalate to trial because of either litigant uncertainty or litigant error, and because such errors are random, plaintiffs and defendants should each expect a 50 percent win rate in disputes that are litigated to judgment. See George L. Priest, *Reexamining the Selection Hypothesis: Learning From Wittman's Mistakes*, 14 J. LEGAL STUD. 215 (1985) (providing empirical support for Priest's hypothesis); George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984) (comparing litigated suits with settled suits).

11. Many of the leading early studies of decisional processes under conditions of uncertainty are collected in what must stand as the founding declaration of behavioral economics. See JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES (Daniel Kahneman et al. eds., 1982).

12. The leading collection of works on intertemporal decision making is CHOICE OVER TIME (George Loewenstein & Jon Elster eds., 1992).

tive.¹³ Moreover, repeated studies of the psychology of decision making further demonstrate that the departures from expected responses to incentive structures are not random, but systematic and corresponding to other heuristics.¹⁴ Finally, the behavioral inquiry demonstrates that certain patterns of decision making are sufficiently well entrenched as to resist change, even when the incentives are altered quite dramatically.¹⁵

The question I wish to address is whether these behavioral and psychological insights can be the foundation for an enriched law and economics model. As formulated above, can there be a coherent approach denominated behavioral law and economics? To answer this question requires an assessment of what defines a useful model through which to view legal regulation. It is the struggle to find an accommodation between the poles of what George Loewenstein terms "tractability and realism."¹⁶ To be capable of effective application, a theory must be simple enough to generate solutions,¹⁷ yet subtle enough not to assume away the difficulties of real-world application. Put another way, a successfully applied law and economics model must not only meet the features identified by George Stigler as essential for an economic theory—generality, manageability, and congruence with reality¹⁸—but such a theory must also be capable of being operationalized in the service of effective regulation.

For a successful behavioral law and economics to emerge, therefore, at least the following four conditions must be met:

13. See Stuart Oskamp, *Overconfidence in Case-Study Judgments*, 29 J. CONSULTING PSYCHOL. 261, 261-65 (1965) (reporting that increased information systematically raised confidence of hospital residents in their diagnoses, even when additional information did not increase accuracy of diagnoses); see also Linda Babcock et al., *Biased Judgments of Fairness in Bargaining*, 85 AM. ECON. REV. 1337 (1995) [hereinafter Babcock et al., *Biased Judgments*]; Linda Babcock et al., *Creating Convergence: Debiasing Biased Litigants*, 22 L. & SOC. INQUIRY 913 (1997) [hereinafter Babcock et al., *Creating Convergence*]; George Loewenstein et al., *Self-Serving Assessments of Fairness and Pretrial Bargaining*, 22 J. LEGAL STUD. 135 (1993).

14. See generally Jolls et al., *supra* note 7, at 1483 (summarizing studies).

15. See George Loewenstein & Nachom Sicherman, *Do Workers Prefer Increasing Wage Profiles?*, 9 J. LAB. ECON. 67, 77-80 (1991).

16. CHOICE OVER TIME, *supra* note 12, at 31.

17. Loewenstein refers back to the early work of Paul Samuelson, who expresses this point as "functions that allow unlimited interrelationships become so general as to be almost vacuous." *Id.* (citing Paul A. Samuelson, *A Note on Measurement of Utility*, 4 REV. ECON. STUD. 155 (1937)).

18. See GEORGE J. STIGLER, *ESSAYS IN THE HISTORY OF ECONOMICS* (1965) (discussing the development of utility theory).

1) The effects identified must be generalizable and not limited to idiosyncratic situation-specific departures from rational model expectations;

2) The effects identified must be robust;

3) The effects identified must be of sufficient magnitude as to systematically undermine predictions of behavior derived from models that assume rational choice;

4) The insights derived from the behavioral and psychological studies must be capable of being operationalized to condition the behavior of all persons subject to specific legal regulation.

In the remainder of this Essay, I suggest that only a limited number of the insights derived from behavioral economics meet the first three criteria, most notably the endowment effect and, to a lesser extent, certain decisional biases. I will further suggest that to date, these insights have not been operationalized into effective forms of proposed legal regulation.

III. IMPLEMENTING BEHAVIORAL LAW AND ECONOMICS

What would happen if one properly applied an analytic method to the insights derived from behavioral economics? In this Part I examine some of the best established behavioral departures from the classic predictions of law and economics. While some of the insights suggest significant departures from the rational choice model, the conclusion to date must be that the potential impact on legal regulation is still slight.

A. *The Endowment Effect*

The endowment effect describes the propensity of people to value what they have more dearly than they would a corresponding opportunity to acquire the same good. Thus, for example, people who own hard-to-come-by sports tickets do not part with them, although they would be disinclined to pay the same amount to acquire them afresh. The presence of an endowment effect is clearly the most robust effect identified in the experimental setting. Conceptually it is a by-product of the concept of loss aversion formulated by Kahneman and Tversky, which holds that individuals are not indifferent as

between gains and losses of comparable magnitude.¹⁹ This insight in turn translates into a prediction that the loss of already possessed holdings would be valued as being of greater magnitude than the ability to acquire an object of nominally equal value. Beginning with a famous series of experiments in which subjects who were given a mug valued it far in excess of otherwise similarly situated subjects who were offered only the prospect of purchasing the mug, the endowment effect has proven sufficiently robust as to be an unremarkable by-product of a range of experimental designs.²⁰

The endowment effect is the most significant empirical observation from behavioral economics. It is of sufficient magnitude to merit serious consideration for attempting to predict behavior across a variety of settings. Moreover, the effect marks a serious departure from the law and economics presumptions that value is established by marginal trades in which each party should be equally willing to pay or accept the market price. The endowment effect violates this principle by identifying a source of value that is not "source independent," meaning that the prior relation of an actor to a particular good may alter the value of the object. Accordingly, a wide variety of studies report significant disparities between the willingness to accept and the willingness to pay for comparably situated subjects, depending only on whether the subjects have to part with money as purchaser or part with a possession as seller.

The violation of the principle of source independence yields fascinating insight into market quirks. For example, it allows us to predict that ex ante bargains may not anticipate later valuations of goods or property by holders. It allows policy makers to anticipate the asymmetric treatment of losses and gains by markets,²¹ and that questions posed to a jury framed as losses versus gains will yield systematically different results.²² Most significantly, the endowment

19. See Amos Tversky & Daniel Kahneman, *Loss Aversion in Riskless Choice: A Reference-Dependent Model*, 106 Q.J. ECON. 1039 (1991).

20. See Daniel Kahneman et al., *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON. 1325, 1327 (1990) (summarizing findings from early endowment effect studies).

21. See Colin M. Camerer, *Individual Decision Making*, in HANDBOOK OF EXPERIMENTAL ECONOMICS 587 (1995) (reviewing failures in rationality from experimental settings); Elizabeth Hoffman & Matthew L. Spitzer, *Experimental Law and Economics*, 85 COLUM. L. REV. 991 (1985) (applying insights to contract and consumer law); Alvin E. Roth, *Bargaining Experiments*, in HANDBOOK OF EXPERIMENTAL ECONOMICS, *supra*, at 253 (summarizing experimental observations on economic anomalies).

22. See Edward J. McCaffery et al., *Framing the Jury: Cognitive Perspectives on Pain and Suffering Awards*, 81 VA. L. REV. 1341, 1372-73 (1995) (noting that experimental studies show

effect can be generalized to the "overvaluation" of all holdings, even more pronounced when effort or self-identity is bound up in the particular entitlement.²³

Even in the case of the endowment effect, however, the final step in moving past the law and economics approach has not yet been taken. To operationalize the conclusions derived from the robust observation of the endowment effect, both in experimental settings and in observed market behavior,²⁴ there must be a normative theory of how to assess the apparent overvaluation of holdings as opposed to aspirations. For example, the development of a normative principle could alter jury instructions to reflect the distinct valuation of the loss of a holding, as opposed to a mere aspiration. It may even provide an argument for limiting contractual voluntarism in the case of losses whose magnitude is not likely to have been comprehended by contracting parties at the stage of contract formation, as with employment termination decisions.²⁵ Not only has this step not yet emerged in the literature, it is not clear that such small implementations would represent a huge step.

Part of the reason for the limited utility thus far of the endowment effect in altering legal rules is that in this area behavioral models have already been best integrated into the understanding of legal claims. For example, the understanding of the asymmetric stakes in the dismissal of a long-term employee can provide some justification for the "hand-tying" use of the Age Discrimination in Employment Act to protect incumbent employees from opportunistic

that framing jury requests for pain and suffering as an ex ante "what would you accept" selling price results in twice the amount of damage awards as an ex post "what would make whole" instruction).

23. This is the subject of a study by George Loewenstein and myself in which we tested whether the extent of the endowment effect could be manipulated if some facet of self-identity were tied up with the particular good in question. We tested this among a group of business executives attending a management training session. One subgroup was given an opportunity to purchase a mug and predictably was willing to pay less for it than those who were given a mug ("endowed") and asked for their sale price. Among those who were given the mug, half were told they received it randomly and half were told they received it in recognition of superior course work performance. The latter group valued the mug significantly more highly. See George Loewenstein & Samuel Issacharoff, *Source Dependence in the Valuation of Objects*, 7 J. BEHAV. DECISION MAKING 157 (1994); see also Samuel Issacharoff, *Contracting for Employment: The Limited Return of the Common Law*, 74 TEX. L. REV. 1783 (1996).

24. This can be observed in certain well-known market anomalies, such as the slowdown in the volume of real estate sales when markets turn down, or the tendency in stock markets to sell winners too soon but to hold on to losers. See generally RICHARD H. THALER, *QUASI-RATIONAL ECONOMICS* 11-13, 148-49 (1991) (giving examples of the inability of market actors to follow the economists' maxim that sunk costs should be disregarded).

25. See Issacharoff, *supra* note 23, at 1800-03 (discussing employment arrangements and the endowment effect).

discharge.²⁶ A behavioral approach focusing on the perceived difference between losses and gains may also suggest that legal rules might deter productive conduct less if framed as tort liability rather than a tax, even if economic models would predict that reallocation of risk through the tax code is more efficient.²⁷ Such steps, however, are still relatively few and quite tentative.

In fact, the greatest force of the endowment effect in legal analysis may be to bolster the law's insight that aspirations are not the same as ownership and to flesh out Holmes' famous observation that it is in the nature of man to value what he has over what he only has hope for.²⁸ In this situation, the law has already adapted, even absent a more robust theory to explain the law's solicitude toward vested expectations. From this vantagepoint, the endowment effect does not offer a repudiation of the law and economics model, even under its own terms. Rather, an understanding of the endowment effect allows for a richer understanding of the utility calculations of affected parties. It allows legal institutions and legal rulemakers to craft the basic economic model a little more robustly, but it does not necessitate a wholesale abandonment of legal economic models.

B. Other Decisional Biases

The experimental literature has shown fairly conclusively that there are certain decisional biases that may systematically alter the application of legal rules. The question then becomes whether these insights can be operationalized, or perhaps, whether the biases are so

26. See Christine Jolls, *Hands-Tying and the Age Discrimination in Employment Act*, 74 TEX. L. REV. 1813 (1996). For a more critical assessment of the ADEA, see Samuel Issacharoff & Erica Worth Harris, *Is Age Discrimination Really Age Discrimination?: The ADEA's Unnatural Solution*, 72 N.Y.U. L. REV. 780 (1997).

27. See Christine Jolls, *Behavioral Economics Analysis of Redistributive Legal Rules*, 51 VAND. L. REV. 1653 (1998).

28. It is in the nature of man's mind. A thing which you have enjoyed and used as your own for a long time, whether property or an opinion, takes root in your being and cannot be torn away without your resenting the act and trying to defend yourself, however you came by it.

The law can ask no better justification than the deepest instincts of man.

Oliver W. Holmes, *The Path of the Law*, 10 HARV. L. REV. 457, 477 (1897). Holmes in turn was drawing an observation well-known since the time of the Ancients. For example, in his famous Funeral Oration, Pericles counsels patience among Athenians who have suffered direct war losses by proclaiming his understanding of the nature of their loss: "[G]rief is felt not so much for the want of what we have never known, as for the loss of that to which we have long been accustomed." THE LANDMARK THUCYDIDES: A COMPREHENSIVE GUIDE TO THE PELOPONNESIAN WAR 117 (Robert B. Strassler ed. 1996).

robust as to have prompted an anticipatory response from the law. This is what Jeff Rachlinski posits in an insightful article on the law's treatment of the hindsight bias,²⁹ the common tendency to assume the inevitability of those events that have actually transpired, regardless of the actual *ex ante* probability of their occurring in the future. As with the endowment effect, this is another example of a robust decisional heuristic that causes significant departures from what a rational economic model would predict. In his review of the various legal doctrines that intersect areas of strong hindsight bias, Rachlinski shows that evidentiary rules, among others, anticipate the insights of behavioral law and economics and already incorporate many of the prophylactic measures that would guard against *ex post* overstatement of probability. For example, the business judgment rule in the law of corporate governance can be read as a means for lending caution against *post facto* assessments of liability of corporate directors and managers that might result from juries reviewing failed business investments after the fact.³⁰

A similar pattern can be observed with self-serving biases, the tendency of people to integrate information in a fashion most consistent with their self-interest. This is another bias that is proving to be highly robust in experimental settings,³¹ and which further has the advantage of having been confirmed experimentally in the dispute resolution context.³² In these experiments, subjects had difficulty reaching efficient settlements because of their distorted perceptions of the strength of their respective cases. The result was not simply different valuation matrixes, as with the omnipresent mug-holders, but easily demonstrable inefficient impasses in dispute resolution.³³ Self-serving biases also have the potential for direct application to the formulation of legal rules; for example, the biased integration of information dictates caution about the assumption that investments in

29. See Jeffrey J. Rachlinski, *A Positive Psychological Theory of Judging in Hindsight*, 65 U. CHI. L. REV. 571 (1998).

30. See *id.* at 619-21.

31. See Babcock et al., *Biased Judgments*, *supra* note 13; Loewenstein et al., *supra* note 13.

32. The initial experiments testing the effects of different legal rules on settlement behavior are found in Don L. Coursey & Linda R. Stanley, *Pretrial Bargaining Behavior with the Shadow of the Law: Theory and Experimental Evidence*, 8 INT'L. REV. L. & ECON. 161 (1988). For more sophisticated models using lawyers as agents, see Rachel Croson & Robert H. Mnookin, *Does Disputing Through Agents Enhance Cooperation? Experimental Evidence*, 26 J. LEGAL STUD. 331 (1997); Russell Korobkin & Chris Guthrie, *Psychology, Economics, and Settlement: A New Look at the Role of the Lawyer*, 76 TEX. L. REV. 77 (1997).

33. See Babcock et al., *Biased Judgments*, *supra* note 13; Loewenstein et al., *supra* note 13.

information production, most notably through expansive discovery, are conducive to promoting settlements.

Self-serving biases also provide a useful cautionary note about the difficulty of implementing the insights derived from a behavioral approach. In a study undertaken after the initial identification of the inefficiencies caused by self-serving biases, the same research team tried to fashion mechanisms for curtailing the unwanted effect. One of these debiasing mechanisms³⁴ proved highly successful at curtailing the inefficient effects of biased obstacles to settlement. Even here, however, it is necessary to examine whether, once operationalized, a new round of strategic manipulation might emerge in the adversarial context that could negate the gains from the richer behavioral model.³⁵ Stated quite simply, what if it turned out that a prisoner's dilemma occurred in which both parties were better able to reach efficient settlements if they were both debiased, but that one party would reap an additional advantage from facing a debiased adversary, while retaining an inflated view of her own position?³⁶

The caution, however, goes beyond the difficulty in operationalizing debiasing techniques. The identification of and attempt to neutralize the effect of self-serving biases is an incremental improvement on an *application* of the economic model of dispute resolution. The point of departure is of necessity the understanding that the impetus for settlement comes from the joint gains that can be realized if parties settle rather than dissipate their aggregate wealth by paying for litigation. The behavioral insight corrects for a particular instance in which the economic model's prediction of human behavior not only departs from reality, but departs systematically in such a way as not to comprehend inefficient behavior. While the richer behavioral model is instructive for showing the limitations

34. See Babcock et al., *Creating Convergence*, *supra* note 13.

35. This is the subject of the fourth, and last, in our series of studies of the presence and effect of self-serving biases. In this new set of experiments, we explore whether there is a strategic disadvantage that attaches to a debiased party who is forced to litigate/negotiate with a biased party. If there is an advantage to be had from one party "unilaterally disarming" from the protective coloration of an inflated position of strength, then any attempt to institutionalize debiasing techniques might very well prompt evasion or circumvention from experienced repeat players who are aware of these effects, such as lawyers.

36. This can be thought of in terms of the force of advocacy that might ensue if one party believed more passionately in the strength of her position. It is possible in such circumstances that the debiased party would be more accommodating, since operating from a more realistic sense of the weaknesses of his position, and would settle under adverse terms.

of the economic model's incomplete understanding of human behavior, it does not yet augur in a new school of legal analysis.

C. Other Decisional Heuristics

By and large, the application of other decisional biases shows episodic shortcomings in the rational economic model, some of rather astonishing severity. Most centrally, repeated experimental settings confirm that significant bounds operate on what would be expected patterns of rational decision making. For example, one study compared the choices that experimental litigants would accept to mitigate damages for the operation of a noisy weekend nightclub in proximity to a tranquility-seeking neighbor. In a two-choice comparison between an injunction against the nuisance and a liquidated damages remedy that included paid weekends in a comfortable hotel, a narrow majority of subjects chose the hotel-based damages remedy. By contrast, a comparable group of subjects given the same two choices together with a third option that featured a weekend in inferior lodgings expressed a strong preference for the superior hotel weekend. The striking result was that the subjects in the three-choice setting chose the superior hotel weekend at a *greater rate* than the subjects presented with that same choice as one of only two options.³⁷ This observation raises fascinating questions about the aversion of the experimental subjects (and by implication, all people) for extreme positions.

A similar decisional failure, revealed in the most ambitious experimental undertaking to date, concerns the decision to award punitive damages. In a large-scale sampling of mock jury pools, Professors Kahneman, Schkade and Sunstein show that while "punitive intent" is quite predictable in terms of anticipated responses to specific misconduct, the mapping of that punitive intent onto the dollar scale varies so widely as to render the dollar figures essentially arbitrary.³⁸ This poses a similar problem to the alteration of prefer-

37. See Mark Kelman et al., *Context-Dependence in Legal Decision Making*, 25 J. LEGAL STUD. 287, 299 (1996). A variant of this can be seen in the pattern of upscale liquor stores to stock three different grades of Macallan's Scotch, a very fine single malt. The scotch is typically sold in the U.S. by age, with different prices attaching to 12-year, 18-year, and 25-year agings. The 18-year costs roughly 50 percent more than the 12-year, but the 25-year costs somewhere in the vicinity of \$250 per bottle, a very high amount for a single bottle of scotch. One may reasonably question how many bottles of 25-year scotch are sold. One may, however, speculate that the presence of the 25-year scotch allows for less guilt to be associated with the purchase of the 18-year bottle.

38. See Cass R. Sunstein et al., *Assessing Punitive Damages (With Notes on Cognition and Valuation in Law)*, 107 YALE L.J. 2071 (1998).

ences caused by introducing a meaningless third alternative choice. If juries are arbitrarily swayed by the presentation of senseless variables, should their determinations of awards be honored? In the punitive damages setting, by analogy, the vagaries of unstructured jury inquiries can be shown to undermine legal confidence in the propriety of jury verdicts and, by extension, to compromise the fundamental deterrent function of punitive damages awards. If such awards are truly arbitrary, then there is no assurance that even wantonly wrong conduct will be properly punished, or that conduct that is at the margins of legal sufficiency for the imposition of punitive damages will not be mercilessly condemned.

These examples of the application of behavioral economics show genuine promise as a means of testing the regulatory impulses of legal rules against actual human conduct. None of these examples, however, is as systematic or as robust as the endowment effect, the hindsight bias, or self-serving biases—at least not to date. Together, however, they properly direct attention to the potential of this field.

IV. ISSUES FOR THE FUTURE

The strength of behavioral economics is that it allows an inquiry into a richer slice of human life than that which emerges under the simplifying assumptions of traditional law and economics. But even the richer model has problems and limitations which should dictate caution before proclaiming its confirmed superiority to traditional economic analyses. First and foremost, the challenge remains to operationalize those insights that are sufficiently robust and of sufficient magnitude to unsettle the observed implications of law and economics. The main thrust of this Essay is to suggest that this step is almost entirely missing.

At another level, behavioral economics also makes simplifying assumptions that should sound real notes of caution. Just as law and economics assumes a limited vision of rational conduct, so too does the behavioral model assume the centrality of individual cognitive processes operating through discrete decisional pathways. This assumption can also be relaxed in significant ways.

First, it is possible to inquire into the state of mind under which decisional pathways are triggered. For example, the experimental insights that undergird behavioral law and economics emerge from controlled laboratory settings in which subjects dispassionately

assume certain roles.³⁹ At times, the experimental setting may get too close to fundamental issues of character, and the prevailing wisdom suggests that this is inappropriate.⁴⁰ But what if decisional processes are very different depending on the sway of emotions, when anger, tiredness, hunger, sexual desire, or stimulus saliency may occasion marked departures from laboratory conditions?⁴¹

Second, what if there are decisional pathways that are not cognitive as the behavioral literature would assume? For example, advances in neurobiology allow for richer understandings of brain functions. Among the insights are the identification of certain behaviors that are controlled at a precortical level, meaning by parts of the brain that cannot easily be thought of as performing decision making in the fashion understood by the behavioral literature.⁴² Similarly, studies into the effects of alcohol and drug addiction on neuroreceptors call into question assumptions about the volitional abilities of *Homo economicus*, even of the behavioral sort.⁴³

Finally, the behavioral model's focus on the individual actor has not yet successfully grappled with the complex institutional settings through which law operates. The sophisticated inquiry into the monetarization of punitive damages undertaken by Kahneman, Schkade, and Sunstein serves as a useful example of this point. In their creative study of juror perceptions of punitive damage liability, the authors show that patterns of punitive intent across vast numbers of sample juries demonstrate sufficient consistency as to lend predictability to the imposition of a punitive damage award. That consensus,

39. This is a concern that dates back to the founding generation of experimental economics. See Vernon Smith, *Microeconomic Systems as an Experimental Science*, 72 AM. ECON. REV. 923 (1982).

40. The classic example is the Nazi prison guard studies conducted at Yale in the 1960s. See STANLEY MILGRAM, *OBEDIENCE TO AUTHORITY* (1974).

41. See generally George Loewenstein, *Out of Control: Visceral Influences on Behavior*, 65 ORG. BEHAV. & HUM. DECISION PROCESSES 272 (1996).

42. See, e.g., ANTONIO R. DAMASIO, *DESCARTES' ERROR* 133-34 (1994) (summarizing studies); Joseph E. LoDoux, *Emotion and the Amygdala*, in *THE AMYGDALA: NEUROBIOLOGICAL ASPECTS OF EMOTION, MEMORY AND MENTAL DYSFUNCTION* 339 (John P. Aggleton ed., 1992).

43. See generally Michael J. Eckardt et al., *Neuropsychological Functioning in Detoxified Alcoholics Between 18 and 35 Years of Age*, 152 AM. J. PSYCHIATRY 53 (1995); Anthony A. Grace, *The Tonic/Phasic Model of Dopamine System Regulation: Its Relevance for Understanding How Stimulant Abuse Can Alter Basal Ganglia Function*, 37 DRUG & ALCOHOL DEPENDENCE 111 (1995); A. Heinz et al., *Evidence for Prolonged Recovery of Dopaminergic Transmission After Detoxification in Alcoholics with Poor Treatment Outcome*, 102 J. NEURAL TRANSMISSION 149 (1995); George F. Koob & Eric J. Nestler, *The Neurobiology of Drug Addiction*, 9 J. NEUROPSYCHIATRY & CLINICAL NEUROSCIENCE 482 (1997); Michael Lyvers, *Drug Addiction as a Physical Disease: The Role of Physical Dependence and Other Chronic Drug-Induced Neurophysiological Changes in Compulsive Drug Self-Administration*, 6 EXPERIMENTAL & CLINICAL PSYCHOPHARMACOLOGY 107 (1998); Guochuan Tsai, *The Glutamatergic Basis of Human Alcoholism*, 152 AM. J. PSYCHIATRY 332 (1995).

however, breaks down entirely when jurors are asked to assign a dollar value to their shared outrage over the conduct of a defendant.

Would the unpredictability of jury assessments of punitive damages come as a surprise to any seasoned trial lawyer, or to the legal system as a whole? Hardly. The study by Kahneman and his colleagues unfortunately treats the dollar determination of the jury as the final act of the legal system. The study then bases its call for a rather imprecise system of "expert" determinations of the monetary value of the jury's assessment of culpability on the need to protect litigants from the wild fluctuations of punitive damages assessments. The study suffers from a truncated view of the actual operation of the legal system. Most simply, jury assessments of punitive damages are highly constricted in ways the study either minimizes or does not address. First, as the authors recognize, there are incipient constitutional constraints limiting the scope of punitive damages.⁴⁴ Second, punitive damage awards are increasingly limited by state law caps, by subsequent review and remittur by trial judges, and by appellate limitations on awards. Rather than being held hostage to the vagaries of jury monetary awards, punitive damages are generally understood to be capped at two to four times actual damages, depending on the jurisdiction.⁴⁵

The same institutional limitation is evident in the discussion by Professors Jolls, Thaler, and Sunstein of juror susceptibility to hindsight bias. Relying on the experimental work establishing the hindsight bias, these authors discuss various alterations of evidentiary standards that can compensate for the propensity of jurors to assume that any realized event was foreordained. The authors propose that future research may allow raising the evidentiary standard to counteract the hindsight-bias problem.⁴⁶ Not only does the prospect of finely calibrated evidentiary standards seem unwieldy given the tremendous institutional need for standard jury instructions, but there is no evidence whatsoever that jurors would or

44. See *BMW v. Gore*, 517 U.S. 559, 574 (1996) (allowing a due process claim to be made based on ratio between actual and punitive damages); *Pacific Mut. Ins. Co. v. Haslip*, 499 U.S. 1, 23 (1991) (holding that punitive damages award four times compensatory damages was "close to the [constitutional] line").

45. See, e.g., *TXO Prod. Corp. v. Alliance Resources Corp.*, 509 U.S. 443, 478-79 (1993) (O'Connor, J., dissenting) (citing common law cases); *Maxey v. Freightliner Corp.*, 665 F.2d 1367, 1377-78 (5th Cir. 1982) (en banc) (stating that "a formula of punitive damages equal to three times compensatory damages is a fairly good standard against which to assess whether a jury abused its discretion").

46. See Jolls et al., *supra* note 7, at 1529-30.

could comprehend the difference between such gradations of proof.⁴⁷ Indeed, there is little evidence that jurors comprehend the difference between the more roughly hewn standards of preponderance of the evidence and clear and convincing evidence as they now stand.⁴⁸ There is no reason to believe, therefore, that jurors will be any more able to comprehend the difference in evidentiary standards than they do the fine probabilistic calibrations that Bayesian analyses would demand.

Does this mean that differing evidentiary standards have no meaning? Quite the contrary. But the difference is not primarily at the level of juror comprehension of proof. Rather, altered evidentiary standards operate in a complex institutional pattern in which they signal to the trial courts and the courts of appeal the propriety of summary judgment and relaxed standards of appellate review. The real world effects of altered evidentiary rules do not turn so much on the cognitive biases of jurors but on the complex institutional division of labor between the jury finders of fact, gatekeeper trial judges, and overseer appellate courts.

V. CONCLUSION

To the extent that there is a cognizable field denominated behavioral law and economics, its future is as yet uncertain. It has not yet achieved the results that would allow for a triumphal declaration that it is the emergent approach to sophisticated understandings of legal regulation. There is every reason to believe that modesty is the most prudent course for its proponents.

Besides immodest claims, there is another claim made for behavioral law and economics that may derail its development. As expressed by Cass Sunstein, this is the normative argument that "[r]ecent revisions in understanding human behavior greatly unsettle certain arguments against paternalism in law . . . they support a

47. In *Addington v. Texas*, 441 U.S. 418, 424-25 (1979), Chief Justice Burger directly acknowledged the possibility that the Court's insistence on differing burdens of proof might very well have no bearing on what jurors understood the varying legal definitions to mean. Experimental research has thus far shown that while jurors understand the difference between more-likely-than-not (preponderance of the evidence) and near certainty (beyond a reasonable doubt), they do not calibrate their decision making to account for the further distinction introduced by the clear and convincing evidence standard. See Dorothy K. Kagehiro & W. Clark Stanton, *Legal vs. Quantified Definitions of Standards of Proof*, 9 *LAW & HUM. BEHAV.* 159, 174 (1985).

48. See Kagehiro & Stanton, *supra* note 47.

form of anti-antipaternalism."⁴⁹ There is no doubt that in order to perfect its models of rational conduct, law and economics requires a terribly reductionist account of human behavior. Its purely efficiency-driven account of human society disregards the imperfect yet ever-present aspirations for beauty, culture, security, self-expression, love, and a host of other human frailties that provide the texture of life. It is certainly the case that the mechanical simplifications of *Homo economicus* strongly caution against most forms of regulatory restraints on the market. It is further true that the tools of psychology may yet yield a richer understanding of how these human wants and desires play out in the institutional setting of law.

But this cannot possibly translate into a justification for greater constraints on individual decision making.⁵⁰ Bounded rationality should not become the pretext for the imposition of an overarching regulatory structure on individuals. First, there is precious little evidence that even professional bodies are immune from the same biases evident in individual decision making,⁵¹ nor that whatever benefits may be gained from administrative expertise are not dissipated in the standard agency problems of monitoring distant decision makers. But more fundamentally, it would indeed be ironic if greater insight into the complexity of human decision making became the justification for taking the freedom to decide, even if imperfectly, from those very individuals.

49. Sunstein, *supra* note 8, at 1178.

50. For a strong critique of attempts to forge a normative theory out of behavioral insights, see F.M. Kamm, *Moral Intuitions, Cognitive Psychology, and the Harming-versus-Not-Aiding Distinction*, 108 ETHICS 463 (1998).

51. See, e.g., Theodore Eisenberg, *Differing Perceptions of Attorney Fees in Bankruptcy Cases*, 72 WASH. U. L.Q. 979, 980 (1994).

