
A BEHAVIORAL ANALYSIS OF GAMING REGULATION

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This Article seeks to establish a principled economic or behavioral basis for regulating gaming. It first examines the traditional economic imperfections for governmental regulation of private activity—the presence of market power, external costs or benefits, public goods, severe informational asymmetries, and collective action problems—and the policy prescriptions that correct for the inefficiencies that those imperfections cause. It then demonstrates that none of these deviations seems to apply to gaming markets. The Article next shows that neither market insurance nor self-insurance is likely to be available to protect those addicted to gambling from losses. Following the famous psychological experiments of Kahneman, Tversky, and others, the Article then discusses whether the persistent, systematic, and difficult-to-correct biases in individual decision-making, such as overoptimism, susceptibility to framing manipulations, and the stickiness of default rules, might serve as a principled basis for gaming regulation. The Article concludes by considering information disclosure and self-restriction, whether by a public, certified form or by a commitment bond, as devices for protecting the addicted gambler.

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I. INTRODUCTION

Gambling in the United States is a very big business. The American Gaming Association reports that casino gambling,¹ which is legal in all but six states, annually generates more than \$261 billion in revenues, \$41 billion in tax revenues, and employs approximately 1.8 million people.² Internet-based gambling, which has a more ambiguous legal status, has estimated revenues of \$1 billion and has long been the fastest-growing segment of the gaming industry. Those are only the direct economic statistics regarding gambling. There are billions of dollars more that directly-affiliated industries—travel, hospitality, restaurants, and the like—contribute to the economy. These statistics give the gaming industry a great deal of political power at both state and federal levels.

The amount that consumers spend, both directly and indirectly, on gaming clearly indicates that gaming is popular. While only about 25% of the population routinely engages in gaming,³ gaming commands a favorable attitude from more than half of all people surveyed on the topic.⁴

And yet there is a dark side to gambling. The best estimates are that approximately two million people have a very serious gambling problem that wreaks havoc on their personal and familial well-being;⁵ for those people and their families and friends, problem gambling is every bit as devastating as addictions to alcohol and drugs.⁶ Another eighteen million or so have their lives adversely affected but not destroyed by their gambling practices.⁷

These statistics point to an industry that confers both great benefits and great costs on society. The key for society's interest in the gaming industry is to regulate the industry so as to realize the benefits of gaming while minimizing its social costs.

In this Article, I use behavioral law and economics, which brings empirical psychology into the toolset of law and economics, to evaluate current regulatory

1. "Gaming" and "gambling" are used interchangeably throughout this Article.

2. See AM. GAMING ASS'N, www.americangaming.org (last visited July 26, 2021) [<https://perma.cc/XUQ5-NURJ>].

3. *Global Gambling Industry in Recent Years*, CASION.ORG, [https://www.casino.org/features/gambling-statistics/](http://www.casino.org/features/gambling-statistics/) (last visited July 26, 2021) [<https://perma.cc/C3JY-CJHZ>].

4. *American Attitudes on Casino Gaming 2020*, AM. GAMING ASS'N: RSCH. (Oct. 26, 2020), [https://www.americangaming.org/resources/american-attitudes-on-casino-gaming-2020/](http://www.americangaming.org/resources/american-attitudes-on-casino-gaming-2020/) [<https://perma.cc/SY4E-HCCW>].

5. See Jena Hilliard, *Gambling Addiction*, ADDICTION CTR., [https://www.addictioncenter.com/drugs/gambling-addiction/](http://www.addictioncenter.com/drugs/gambling-addiction/) (Aug. 11, 2021) [<https://perma.cc/6J7B-RE4Z>].

6. Cf. id.

7. See id.

methods—at both the state and federal levels—and to suggest effective and moderate reforms of that regulation.

I largely leave aside issues having to do with the character of those who provide gambling opportunities.⁸ Nor do I have anything novel to say about attempts to deal with problem gambling. I shall merely note two techniques in particular that have been attempted to deal with compulsive gambling. I seek to address the problems that arise in helping those who have some self-control issues (and who does not?) that could cause them to have problems with gambling.

My central point in this Article is to show that we are hardwired to have problems with gambling, that most people find some method of dealing with those problems, that it is extremely difficult to identify *ex ante* those who will not be able to exert self-control to minimize gambling problems, and that, therefore, regulatory policies that simultaneously maximize the social benefits of gaming and minimize the social costs are virtually impossible. As a result, tradeoffs must be made between addressing problem gambling and allowing those who enjoy and can afford gambling, both financially and emotionally, to do so. All of the tradeoffs are imperfect and are bound, therefore, to disappoint.

The Article proceeds as follows. In Part II, I survey the two standard economic analyses that seek to identify what industries and behaviors ought to be regulated so as to increase social well-being and how that regulation should be undertaken.

Part III turns to a newer and complementary argument in favor of regulating behavior. I begin by showing that individual decisionmakers are imperfectly rational in that they make predictable mistakes. I show further the difficulties in “debiasing” people so that they do not make those mistakes. That Part, based on what is called “behavioral decision theory” or “behavioral law and economics,” proposes a very different basis for and style of regulation than either of the standard methods of regulation of industry in microeconomics.

Part IV discusses whether it is possible to regulate gambling so as to minimize its social costs while maximizing its social benefits. In brief, the answer is no. My belief is that there are net social benefits from gambling, but I cannot be sure whether these net benefits are large or small.

The concluding section summarizes and points toward future research to answer the questions raised.

II. TWO ECONOMIC ANALYSES OF THE GROUNDS FOR REGULATION

In this Section, I consider whether one can look to economics for guidance on whether and how to regulate gambling in such a fashion that its net social benefits are maximized. I shall show that there is no strong argument for regulation in either of the standard economic arguments for regulation. I also discuss

8. One of the frequent arguments against gambling legalization is that gaming is inextricably associated with organized crime. I have no information on the extent to which this is true. As will become evident, I am not opposed to gambling per se; I recognize that it has social costs, particularly to those who are compulsive gamblers and their families and friends. I shall discuss methods of treatment for compulsive gambling in a later section.

whether private insurers might find it profitable to offer policies against gaming losses and conclude that no such private insurance scheme is likely to emerge. Finally, I consider whether individual self-insurance might limit gaming losses. I postpone a fuller consideration of that possibility until Part III.

A. The Standard Account

There is a standard microeconomic theory to explain when and how private industry might be regulated rather than left to do as it will (*laissez faire*). That theory begins from the presumption that a perfectly competitive industry is the ideal.⁹ Economists categorize deviations from that ideal according to a taxonomy of “market imperfections” or “market failures,” as they are called.¹⁰ Those imperfections or failures focus on the circumstances in which market transactions take place—for example, in conditions of one seller (monopoly) or one buyer (monopsony)—or on the ability of bargaining to address problems—such as externalities (both positive and negative), the peculiarities of information, and the difficulties of collective action.¹¹ I shall discuss each of those and their correctives in just a moment.

Let me make one more important assumption from which most traditional microeconomic analyses begin: that individuals are rationally self-interested.

If all markets—product, service, labor, and all other markets—are perfectly competitive, if there is complete information, and there are no market imperfections, then the economy is said to be in a Pareto optimal state.¹² This is the “First Fundamental Theorem of Welfare Economics.”¹³ There is a lot of jargon there, I leave elaboration to a footnote.¹⁴

Pareto optimality defines the ideal situation for which an economy ought to strive, but the conditions specified in the theorem are unrealistic.¹⁵ Economists

9. See ROBERT COOTER & THOMAS ULEN, *LAW & ECONOMICS* 28–29, 38 (6th ed. 2012).

10. *Id.* at 38.

11. *Id.* at 38–42.

12. See *id.* at 14.

13. There are actually two fundamental theories of welfare economics. For the modern formulations of those theorems, see Kenneth J. Arrow, *Alternative Approaches to the Theory of Choice in Risk-Taking Situations*, 19 *ECONOMETRICA* 404 (1951), and Gérard Debreu, *The Coefficient of Resource Utilization*, 19 *ECONOMETRICA* 273 (1951). Arrow and Debreu, both of whom won the Nobel Prize in Economics—Arrow in 1972, Debreu in 1983, wrote their articles independently. They were published simultaneously.

14. A “perfectly competitive market” is one in which no seller or buyer has market power such that they can dictate the market price. Every seller and buyer is said to be a “price taker.” “Complete information” means that every actor has complete and accurate information about every actor and every option in the market. A “Pareto optimal state” is one in which no person can be made better off, in her own estimation, without making another person worse off, in her own estimation. The name honors the contribution of the Swiss lawyer-economist Vilfredo Pareto (1848–1923). The reason for this seemingly restrictive definition of optimality is that economists then (and many, now) believe that individual tastes are a very deeply personal matter knowable only by what a person does in the marketplace. That is, economists believed that tastes were so deeply subjective that an outside observer could only talk about better and worse allocations of goods and services by the criterion that Pareto articulated. See COOTER & ULEN, *supra* note 9, at 14 & nn.1, 19, 28.

15. *Id.* at 42.

engaged in policy discussions focus on the market imperfections that might fore-stall a state of Pareto optimality.¹⁶ Those conditions are as follows: monopoly or monopsony, non-excludability or public goods, externalities (positive or negative), asymmetric information, and collective action.¹⁷ Economists focus on these on the presumption that if they can correct these imperfections, society will get closer to the Pareto optimum and will, therefore, be better off.

Monopoly is the condition of one seller; monopsony, of one buyer.¹⁸ In either condition, an entity has control over the market that allows it to dictate prices and, presumably, deter entry by other entities.¹⁹ That is clearly a violation of the perfect competition condition. The corrective is an antitrust policy that either breaks up the monopoly or monopsony, replacing it with competitive entities; regulating the monopoly so that it charges the same price as would be charged in a competitive market or regulating a monopsony so that it pays a higher price for inputs (as high as would have been paid by competitive input-purchasers); taking the supra-competitive earnings from the monopoly or monopsony; or fostering entry into the market.²⁰

A “public good” is one that is most efficiently provided by a single, regulated supplier.²¹ A classic example is a fireworks display. No competitive firm can charge customers for watching a fireworks display because potential payers can enjoy the show for free by simply moving further back. This condition is sometimes called “nonexcludability,” to indicate that it is impossible for a supplier to exclude nonpaying customers from enjoying his or her output.²² It is possible to exclude nonpaying customers of “private goods,” like bicycles, restaurant meals, and haircuts.

The imperfection created by a public good can be corrected by the government’s subsidizing the private provision of the public good, providing special protections for the provider that allow it to seek redress from nonpaying consumers, or simply by the government’s providing the public good (as it does with national defense).²³

A frequently used example of nonexcludability is information.²⁴ Without special protections for the providers of information, their customers can become their rivals by simply taking the information they have been provided and selling it to others, perhaps at a discount because they did not have to incur the costs of producing the information.

Externalities are costs or benefits that private parties generate or confer on others without their consent as a byproduct of the generators’ consumption or

16. See, e.g., *id.*; EYAL ZAMIR & DORON TEICHMAN, BEHAVIORAL LAW AND ECONOMICS 15–16 (2018).

17. COOTER & ULEN, *supra* note 9, at 38–42.

18. *Id.* at 38.

19. *Id.* at 29, 38.

20. *Id.* at 38–39.

21. *Id.* at 40–41.

22. *Id.*

23. *Id.*

24. See, e.g., *id.* at 114.

production of goods and services.²⁵ In the case of external costs (sometimes called “negative externalities” or, somewhat confusingly but what is usually obvious in context, simply “externalities”) and in the absence of regulation, the generator does not incur any costs for the harm that his production or consumption imposes on others.²⁶ Air and water pollution are examples of external costs. As another example, a smoker presumably enjoys her cigarette but does not have to pay for the discomfort or adverse health consequences that those nearby suffer. Someone who has COVID-19 and infects others does not have to incur any costs to compensate those people whom he has harmed. With respect to external benefits, someone who is vaccinated against COVID-19 confers a valuable benefit on others (they cannot receive, we believe, the disease from her). But nor can she receive compensation from those whom she will not infect for conferring that benefit.

All other things equal, it is in society’s interest to have fewer external costs and more external benefits. That is, in the absence of some regulatory policy, there will be too many external costs and too few external benefits.²⁷ In the case of external costs, the policy correctives are for the government to tax external-cost-generators, to allow those injured to proceed against the generators for compensation, or to regulate and fine the provision of the externalities (by, for example, forbidding smoking indoors).²⁸ The policy correctives for external benefits are to subsidize their private provision (as the government is doing with vaccines for COVID-19) or for the government to provide the benefit-generating activity (as it does with regard to elementary school education).²⁹

Another form of market failure arises because of asymmetric information—a difference in material information about some good or service as between two potential transactors.³⁰ For instance, the seller may know something about the good he is selling that the buyer would like to know but that the seller has an incentive not to disclose. For example, the seller may know that contrary to all appearances, the almost-new car he is trying to sell is a lemon. He would rather not tell the buyer that information because it would greatly lower the value of the car to the buyer. How can the buyer in any transaction where the other party may have valuable information about the transaction compel the seller to disclose that information to her? This is a common problem, and one with which individuals do not do well.³¹ Unless they can find a way of disclosing information that they would rather not disclose, a transaction that would otherwise have been value-creating³² may not take place. Alternatively, because information that would

25. *Id.* at 39–40.

26. *Id.*

27. *Id.*

28. *Id.* at 40, 169.

29. See *The Economic Lowdown Podcast Series: Externalities*, FED. RSRV. BANK OF ST. LOUIS, <https://www.stlouisfed.org/education/economic-lowdown-podcast-series/episode-11-externalities> (last visited July 26, 2021) [<https://perma.cc/739S-CNML>].

30. COOTER & ULEN, *supra* note 9, at 41–42.

31. *Id.*

32. In most voluntary transactions, there may be a “cooperative surplus” that the parties can enjoy. If the price at which the seller is willing to sell is less than the price that the buyer is willing to pay, the difference

have reduced the value of the transaction to the buyer has not been disclosed, the buyer, when he realizes the true value of the transaction, may feel cheated and resentful. This is a value-destroying transaction that ought not to have occurred—at least not at the price agreed upon.

Society helps private parties deal with informational asymmetries in various ways. One is to require the disclosure of some information as a condition for a legitimate transaction. Real property law in most states requires a seller to disclose information about latent defects.³³ Regulations require manufacturers who produce goods that pose hazards to consumers to disclose those hazards in plain language in obvious and prominent places on the product.³⁴ And consumers who have been given false information can typically void that transaction or receive compensation.³⁵

Collective action problems arise in situations in which a group of people could be better off if they could effectively cooperate but are frustrated in realizing that collective benefit by the costs of cooperating and coordinating.³⁶

A classic example is the “prisoner’s dilemma.”³⁷ In that game, two men work together to commit a crime and promise to one another that if they are caught, they will maintain their innocence.³⁸ After committing the crime, the police separate the men and put a deal to them in which they will spend a lot of time in jail if they do not confess and the other suspect confesses.³⁹ If they both manage to keep quiet about their involvement, it will be extremely hard for the prosecution to obtain a conviction, and as a result, the suspects may spend no or little time in prison.⁴⁰ What should each suspect do, hold to the agreement or confess? They would both be better off if neither of them confessed, and yet, as can be demonstrated very easily, it is in the interests of each suspect to confess.⁴¹

This example only dealt with two people but imagine what the case might be if there were dozens or more involved. Trying to get those people to make a commitment to do something together might be a nightmare. Economists refer to the problems of getting groups to make binding commitments to coordinate as “holdout” and “free rider” problems.⁴²

between those two “reservation prices,” as they are called is the “cooperative surplus” that the two can split. Typically, the seller gets a price that is greater than the minimum he was willing to accept, and the buyer pays less than he was prepared to pay to complete the transaction. Both parties are better off than if they had not transacted. *Id.* at 74–76, 253 n.32.

33. COOTER & ULEN, *supra* note 9, at 41–42.

34. See Mark W. Schroeder, *Private Causes of Action for a Manufacturer’s Failure to Report Substantial Product Hazards: Causation Analysis and Zepik v. Tidewater Midwest, Inc.*, 75 IOWA L. REV. 567, 577–78 (1990).

35. COOTER & ULEN, *supra* note 9, at 361.

36. Avinash Dixit & Barry Nalebuff, *Prisoners’ Dilemma*, LIBR. ECON. & LIBERTY, <https://www.econlib.org/library/Enc/PrisonersDilemma.html> (last visited July 26, 2021) [<https://perma.cc/HKF8-PPRK>].

37. *Id.*

38. *Id.*

39. *Id.*

40. *Id.*

41. See COOTER & ULEN, *supra* note 9, at 34–35.

42. *Id.* at 41, 177–81.

The “holdout” problem arises because each member of the group would like to be the last one to agree to the group plan.⁴³ If, for example, everyone else has agreed and only Johnson’s consent is necessary for the group project to go forward, Johnson can demand a great deal (such as a small buy-in price or a larger than average payout when the project succeeds) for his consent. But if Johnson recognizes the value of being the last person to agree, so do some or all of the other members of the group. As a result, everyone wants to be the last person to agree; so, it is extremely difficult to get the coordination agreement going, never mind satisfactorily concluded.

The “free rider” problem arises because members of a group would like to enjoy the benefits of the group project without having to contribute any money towards its realization.⁴⁴ Suppose that the consent and monetary contribution of sixty percent of a group is necessary for a project to go forward. Then, many will seek to be among the forty percent who contribute nothing and enjoy the benefits of the project.

How could a group deal with the holdout and free-rider problems? They might adopt rules of approval for group decisions that require a simple majority to be adopted by all, or they might require a super-majority for major decisions.

A forceful example is national (or regional) defense against attack.⁴⁵ We do not have private providers of defense because, among other reasons, those defended have holdout and free rider issues: the private provider could not provide the service to all with only a few participating; nor would that provider have a way to signal to attackers which members of the group had paid for defense and which had not. Many of those defended would free ride on the payments that some had made to the private defense company. Because none of that makes sense, national (and regional) defense is provided by government and paid for by compulsory taxes.⁴⁶

B. A Coasean Ground for Regulation

In 1960, Professor Ronald Coase⁴⁷ published one of the most famous law review articles of the past seventy-five years. “The Problem of Social Cost” argued that externalities (by which economists typically mean “negative externalities”) and most other sources of market failure arise because of what he called “transaction costs.”⁴⁸ He (and later commentators) defined those costs as the costs of finding someone with whom to bargain, the costs of bargaining with them to an agreement, and the post-agreement costs of monitoring the terms of

43. See *id.* at 177.

44. *Id.* at 41.

45. *Id.*

46. *Id.*

47. Coase, an economist, spent most of his career on the faculty of the University of Chicago Law School. He won the Nobel Prize in Economics in 1991. He died at the age of 103 in 2013. Bob Goldsborough, *Ronald H. Coase, Retired U. of C. Professor Won Nobel Prize, 1910-2013*, CHI. TRIB. (Sept. 4, 2013), <https://www.chicagotribune.com/news/ct-xpm-2013-09-04-ct-met-ronald-coase-obit-20130905-story.html> [https://perma.cc/L4GA-T6MP].

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

the agreement.⁴⁹ Coase noted that sometimes those costs are trivial, as is the case for a transaction to purchase a diet soda but that at other times they can be dauntingly large, as in a complex, multi-party agreement that will take eighteen months to complete.⁵⁰

Coase suggested—in what has come to be formalized as the “Coase Theorem”—that when transaction costs are zero or very low, there will be Pareto efficient resource allocation, regardless of the law.⁵¹ An implication of that observation is that when transaction costs are large, the law may be necessary for Pareto efficient resource allocation.⁵²

In essence, Coase was suggesting a criterion for achieving Pareto efficient outcomes as between leaving transactions to unregulated transactions—that is, to the “free market”—and regulating other transactions so as to minimize transaction costs and, thereby, allow mutually beneficial transactions to succeed.⁵³

There has been a great deal of literature on the Coase Theorem,⁵⁴ and it has become one of the most frequently cited law review articles since World War II.⁵⁵ For our purposes here, the theorem is relevant because it provides a relatively easy-to-apply rule for determining when markets will work and when they will not and, in the latter case, guidance on what needs to be done to achieve an efficient outcome. Specifically, the Coase Theorem asks the legislator or administrator to look to the level of transaction costs between the potential parties to a particular kind of transaction: If those costs tend to be so high as to preclude private transactions, there is a threshold case for regulation, and the regulation should focus on reducing the transaction costs so that the parties can conclude an agreement if there is a cooperative surplus.⁵⁶

C. Market Imperfections as a Ground for Regulating Gambling

We have now seen two different methods in modern microeconomics of characterizing situations in which unregulated markets are unlikely to work toward social benefit and have identified the correctives that those two methods recommend. The question to which we are now equipped to discuss is this: “does gambling exhibit any of the characteristics of market imperfections or of transaction costs that might make out a *prima facie* case for governmental regulation of that industry?” The answer appears to be “No.” There is no question that the

49. *Id.*; see, e.g., COOTER & ULEN, *supra* note 9, at 88; Geoffrey A. Manne & Todd J. Zywicki, *Uncertainty, Evolution, and Behavioral Economic Theory*, 10 J.L. ECON. & POL’Y 555, 578 (2014).

50. Manne & Zywicki, *supra* note 49, at 577–78.

51. See COOTER & ULEN, *supra* note 9, at 86.

52. *Id.* at 85.

53. *Id.* at 103.

54. *Id.* at 81 n.8.

55. Fred R. Shapiro & Michelle Pearse, *The Most-Cited Law Review Articles of All Time*, 110 MICH. L. REV. 1483, 1489 tbl. 1 (2012).

56. Coase, *supra* note 48, at 93; see also COOTER & ULEN, *supra* note 9, at 93.

gaming industry is highly competitive.⁵⁷ Indeed, one could almost certainly argue that the industry is growing more competitive, as new technologies (such as the Internet) and new activities on which to gamble (such as e-games) create an increasing array of opportunities for those who enjoy gambling to do so. Nor are there obvious negative externalities from gambling; nor is it a public good; nor are there informational asymmetries or collective action problems that plague gambling.

The upshot of these considerations is that there is no warrant in standard microeconomics for regulating gambling.

I hasten to add that there may be other, noneconomic reasons for regulating gambling, but those reasons, if any, are not my subject in this Article.

D. *Insurance for Gambling Losses: Market and Self-Insurance*

This Section explores the possibility of having an insurance mechanism for dealing with gambling losses. Economists and finance scholars have developed sophisticated models of how decisionmakers deal with uncertainty.⁵⁸ If people are risk-averse (as most probably are),⁵⁹ they might be interested in purchasing market insurance to protect them against insurable losses. There is an alternative (or supplement) to market insurance called “self-insurance,” in which individuals either adopt behavior that minimizes losses from uncertain events or sets aside money as a fund from which to draw if losses occur.⁶⁰ This Section considers whether market insurance or self-insurance could provide protection against gambling losses. I conclude that market insurance for those losses is not economically viable. It is, in essence, a “missing market.” There are, however, reasons for believing that self-insurance might have some limited promise as a protection against gambling losses.

57. Bus. Rsch. Co., *The Growing Gambling Industry: Forecasts, Technologies, and Trends*, MKT. RSCH. BLOG (Feb. 17, 2020), <https://blog.marketresearch.com/the-gambling-industry-forecasts-and-trends> [https://perma.cc/HW2D-V4UR].

58. See COOTER & ULEN, *supra* note 9, at 43–49.

59. Economists, finance scholars, and other social scientists recognize three broad tastes for risk: risk aversion, risk neutrality, and risk preferring. The belief is that these tastes are, like all tastes, a matter of personal preference. A risk-neutral person is indifferent between a sure thing and a risky course of action of equal expected value. Suppose that course-of-action #1 is certain to be worth \$100. Suppose that an alternative course of action, #2, has two possible outcomes; *A*, which, if it eventuates, will be worth \$200, and *B*, which will be worth \$0. Assume that *A* and *B* are equally likely. The expected value of course-of-action #2 is calculated as follows: $E(CA2) = 0.5 * \$200 + 0.5 * 0 = \100 . So, the expected values of the certain and uncertain outcomes are equal. A risk-neutral person would be, by definition, indifferent between the two courses of action. A risk-prefering person prefers an uncertain to a certain course of action of equal expected value. And a risk-averse person prefers a certain to an uncertain course of action of equal expected value. We shall see these matters again when we discuss a behavioral basis for gaming regulation.

60. Governments sometimes provide insurance, as in unemployment insurance, which (typically) partially replaces the lost income from having lost a job.

1. Market Insurance for Gambling Losses

Could rational actors who suspect that they have a problem with gambling purchase insurance that would compensate them for gambling losses? With experience rating, gamblers whose losses recur and increase could be charged higher premiums or eventually barred from coverage, just as chronically unsafe drivers have their rates increased or their policies canceled if they have more frequent and more severe accidents.⁶¹

The problem with market insurance against gambling losses is fundamental. Insurers are wary of issues of moral hazard and adverse selection,⁶² which issues characterize gambling insurance.

“Moral hazard” describes a situation in which the presence of insurance may create a heightened incentive for the insured to behave so as to make an insurable loss more likely.⁶³ To take a time-worn example, suppose that the owner of a house with a fair market value of \$100,000 was somehow able to insure the house for \$150,000 in the event of, say, a complete fire loss. The insured would have an incentive to set his house on fire because it would be more valuable to him as a complete loss than as a standing, usable house.

“Adverse selection” arises because of the difficulty that an insurer has in writing narrowly tailored policies that reflect an individual insured’s likelihood and extent of loss.⁶⁴ Because the costs of writing individually tailored or small group-tailored policies are too high, insurers place insureds into classes, such as by age or earned income or health.⁶⁵ Typically, all the members of a class are offered the same premium on a policy for that class, and that premium is usually calculated using the average probability of the class’s having an insurable loss.⁶⁶ Inevitably, some members of the class have private knowledge that their true likelihood of loss is greater than the average for their class (in which case the premium offers them a bargain in that the actual premium is less than their expected insurable loss).⁶⁷ Exactly the opposite holds for members of the class who know that they are safer than average—that is, less likely to have an insurable loss than the insurer assumes to be the case for members of the class.⁶⁸ For those class members, the premium is higher than they are willing to pay; so, they may not, probably will not, buy the insurance policy.

The result of these two factors—that insureds may behave less responsibly simply because they have insurance and that the eagerness of those with above-average likelihood of loss to purchase a policy and the reluctance of those with below-average likelihood of loss to purchase a policy—might lead to a disaster

61. See COOTER & ULEN, *supra* note 9, at 48.

62. See *id.*

63. *Id.*

64. *Id.*

65. *Id.*

66. *Id.*

67. The premium for a class is set equal to the average probability of loss for the class times the average loss from an insurable loss; that product is the “expected value of an insurable loss.” In a competitive insurance market, the premium is set roughly equal to a class’s expected value of an insurable loss.

68. COOTER & ULEN, *supra* note 9, at 49.

for the insurer. First, the insurer will find that its insureds have been “adversely selected” to the insurer’s interest: those most likely to incur insurable losses form a disproportionate share of its clients. As a result, the insurer is likely to find that losses are larger than anticipated and will most likely respond to that discovery by raising the premium for those in the class. But that only leads to worse results: those whose expected losses are less than the now-higher premium will drop out of the insurance market leaving behind those with expected losses higher than the now-higher premium. The fear is that this process will continue into a “death spiral,” in which the premiums are so high that no one in the class is interested in or able to afford market insurance.⁶⁹

Second, moral hazard is likely to be significant if there were market insurance for gambling losses. Recall that moral hazard means that insurable losses are higher simply because the insured has insurance.⁷⁰ We have already contemplated the perverse incentive created for a homeowner if she can insure her home for more than it is worth.⁷¹ That example may not be realistic, however forcefully it makes the point. Consider a more realistic example. Suppose that a car owner has just purchased a new stereo for her car and that the policy calls for the complete replacement of the stereo should it be stolen. A very conscientious person might remove the stereo from the car every time she parks for the night. But a less conscientious person might be less cavalier about removing the stereo or locking her car or parking under a streetlight simply because she has replacement insurance.

How do insurers deal with moral hazard and adverse selection? There are four standard means of minimizing the issues associated with moral hazard and adverse selection: co-insurance, deductibles, experience rating, and cancellation.⁷² Co-insurance and deductibles allow the insurer to cover less than the full extent of the insurable loss, thereby preserving the insured’s incentive to take care because she will have to absorb the difference between the actual loss and the insurance payout. “Co-insurance” preserves the insured’s incentive to take care by making her responsible for a percentage of the loss, such as ten percent or twenty percent. “Deductibles” preserve the insured’s incentive to take care by making him responsible for a fixed dollar amount of any loss, such as \$200 or \$500.

Insurers may vary the amount of co-insurance so as to induce the insured to reveal his or her private information about his willingness to assume some risk or about his ability to avoid an insurable loss. For example, an insured’s willingness to accept a higher co-insurance or deductible amount may signal that the insured believes that he is the kind of person who will take action to make an insurable loss less likely.

Finally, insurers recognize that they may have made a mistake in assessing where a particular insured belongs within his class. How the insured behaves—

69. *Id.*

70. *Id.* at 48.

71. See *supra* notes 29–31 and accompanying text.

72. COOTER & ULEN, *supra* note 9, at 49.

for instance, how many accidents he has and claims he submits—may tell the insurer that this person is more accident-prone than anticipated. Through the device known as “experience rating,” an insurer can raise an insured’s premium to reflect the higher probability of a particular insured’s having an insurable loss. Ultimately, if the insured keeps having losses, the insurer can cancel his or her policy.⁷³

It is obvious, I think, how these considerations apply to gambling losses. The problems of moral hazard and adverse selection are so severe and likely to be so very hard to correct through the usual correctives of co-insurance and deductibles that this insurance is simply not available. As a result, gambling losses will fall squarely on the gambler (and, perhaps, his or her family).

2. *Self-Insurance for Gambling Losses*

All may not be lost for the gambler, even if market insurance for gambling losses is not available. There is the possibility of self-insurance. We have already seen an example of self-insurance, although I did not call it that, in the behavior of the conscientious car owner and her new car stereo. Her practice of removing the stereo at night, parking under a streetlight or in a monitored parking garage, and always locking her car are examples of self-insurance—incurring costs so as to make a loss less likely.

Another common example arises in trying to keep one’s commitments. Suppose that one is worried about her ability to get up in the morning in time to get to work. An alarm clock obviously helps, but if she is aware of her proclivity to hit the snooze button and continue sleeping, she can further protect herself by putting the alarm clock across the room. When it goes off, she cannot hit the snooze button; she will have to get up and walk to the alarm clock to stop its alarm. And once up, she is much more likely to stay up in order to get to work on time.

These and other like devices can help us insure ourselves against doing things and behaving in ways that we—in the guise of our better angels—wish that we did not. I shall have more to say about how this might apply to gambling in Part III.

III. BEHAVIORAL ANALYSIS OF GAMBLING

We are in search of a principled economic basis on which to regulate gambling. So far, we have not found that basis. The main reason for that failure is that the central bases for intervention in private decision making in traditional microeconomic analysis are market imperfections. Notably, traditional theory has not thought that there might be anything wrong with individuals that might make a case for regulation. This is because until relatively recently, microeconomics has

73. It is a remarkable example of the sophistication of the regulatory and insurance markets that private individuals can get insurance against being injured by an uninsured driver. *Id.* at 238.

assumed that all individuals are rational actors⁷⁴ or that there are strong moral arguments against infringing on personal liberty in mundane matters like how to spend one's income.⁷⁵

Within the past thirty years, cognitive and social psychologists—most notably, Daniel Kahneman and Amos Tversky⁷⁶—have presented empirical findings that human behavior is imperfectly rational, that human beings make predictable mistakes, and that it is difficult for individuals to self-correct for these proclivities.⁷⁷

In this Section, I shall review this literature on fallible human decision-making and then show how that might make a threshold case for regulating gaming.

A. Behavioral Choice Theory, Generally.

Examples of the findings of behavioral experiments, both laboratory and field, are very well known within the social science community, including the legal academy.⁷⁸ Because behavioralism is a related set of empirical findings and not a crisp, tight theoretical construct, the field is characterized by a series of examples, almost all of which illustrate the fallibilities of human judgment and decision making. I have selected two examples of those findings for this Section for the purposes of illustrating behavioral choice theory generally. I shall leave for Part IV an enumeration of some other findings that pertain more centrally to issues of gaming.

I want to stress one significant central point that would shine through both these examples: the experimental results fail to confirm the predictions of the rational-actor model (or “rational choice theory,” as it is also called).⁷⁹ Just as importantly, the experimental findings do not show that human behavior is chaotic, unpredictable, or delusional.⁸⁰ If humans behaved in those ways, we might feel comfortable in characterizing them as “irrational.” But I dislike that characterization. Most humans behave in similar ways in similar circumstances; those ways, however, are not those predicted by rational choice theory.⁸¹ It follows

74. In a famous essay, Gary Becker, winner of the 1992 Nobel Prize in Economics, argued that even if there were many irrational actors, rational actors could drive market behavior to the same results that would result if *all* actors were rational. See generally Gary S. Becker, *Irrational Behavior and Economic Theory*, 70 J. POL. ECON. 1, 7 (1962).

75. COOTER & ULEN, *supra* note 9, at 111.

76. See MICHAEL LEWIS, *THE UNDOING PROJECT: A FRIENDSHIP THAT CHANGED OUR MINDS* 12 (2016). Professor Kahneman, a psychologist, won the Nobel Prize in Economics in 2002.

77. Amos Tversky & Daniel Kahneman, *The Framing of Decisions & the Psychology of Choice*, 211 SCI. 453, 457 (1981).

78. I have written about these matters before and draw on some of those prior writings in this Section. See Thomas S. Ulen, *The Importance of Behavioral Law*, in *THE OXFORD HANDBOOK OF BEHAVIORAL LAW AND ECONOMICS* 93 (Doron Teichman & Eyal Zamir eds., 2014); Thomas S. Ulen, *Behavioral Law and Economics: Law, Policy, and Science*, 21 SUP. CT. ECON. REV. 5, 6 (2014).

79. Ulen, *Behavioral Law and Economics: Law, Policy, and Science*, *supra* note 78, at 41.

80. *Id.* at 8.

81. In his magnificent, *Thinking, Fast and Slow* (2011), Professor Kahneman suggests that most of our errors in judgment and decision making occur because of a conflict between two very different thinking systems

that using that theory to predict some behavior may lead to mispredictions. Just as importantly, private practices and governmental policies premised on the rational actor paradigm are not likely to work. And yet much of economic policy is, indeed, premised on humans behaving as rational choice theory predicts.⁸² There is, I believe, an important correction going on in our understanding of human behavior. That re-orienting of policy in light of more modern theories of human behavior may be the most significant work in the social and behavioral sciences today.

1. *Framing*

In a famous experiment, Amos Tversky and Daniel Kahneman asked experimental subjects to choose between various prevention strategies for dealing with a very serious disease that might affect a patient population of 600 people.⁸³ The first choice was between these two options:

Option A: This program will save 200 lives.

Option B: This alternative program has a 33% chance of saving all 600 subjects and a 67% chance of saving no one.

Both programs have an expectation of saving 200 lives.⁸⁴ But because Option A's saving is a certainty and Option B's is probabilistic, one would expect everyone who is risk-averse to prefer A to B. When Tversky and Kahneman presented these options to various subjects, approximately 70% preferred *A* to *B* and approximately 30% preferred *B* to *A*, suggesting that our expectation was correct.⁸⁵

that the human mind has evolved to reach conclusions on the basis of evidence. See DANIEL KAHNEMAN, THINKING, FAST AND SLOW 24 (2011). He calls these systems, System I and System II. *Id.* System I is designed to give a quick, perhaps life-saving answer to an impending question for which a rapid response is of great importance, such as "is that a tiger running at me?" See *id.* System II is the slower, more deliberative system that evaluates the evidence more carefully, may suggest additional questions that need answering or evidence that needs to be gathered, and warns against the practice of jumping to a conclusion. See *id.* Kahneman suggests that System I is our default thinking system, and that System II has to be invoked, which requires effort. See *id.* Almost no one has written about the implications of this promising distinction in law and public policy, but it is clearly profound. I have suggested to several graduate students looking for a dissertation topic that our rules of criminal evidence and procedure might be interpreted as attempts to invoke System II thinking in criminal trial deliberations. No takers yet.

82. Rational choice theory's grip on much modern public debate reminds me of this famous quote from John Maynard Keynes:

The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are usually distilling their frenzy from some academic scribbler of a few years back. I am sure that the power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas. Not, indeed, immediately, but after a certain interval; for in the field of economic and political philosophy there are not many who are influenced by new theories after they are twenty-five or thirty years of age, so that the ideas which civil servants and politicians and even agitators apply to current events are not likely to be the newest. But, soon or late, it is ideas, not vested interests, which are dangerous for good or evil.

JOHN MAYNARD KEYNES, THE GENERAL THEORY OF EMPLOYMENT, INTEREST, AND MONEY 383–84 (1936).

83. Tversky & Kahneman, *supra* note 77, at 453.

84. *Id.*

85. *Id.*

Then, Tversky and Kahneman presented another choice on similar facts to different groups.⁸⁶ The characteristics of these various groups were indistinguishable from those of the groups who chose between Options *A* and *B*.⁸⁷ This second choice was between these two options:

Option C: This program will result in the deaths of 400 people.

Option D: This alternative program has a 33% chance of no one's dying and a 67% chance that all 600 people will die.

Again, both programs have the same expectation as Options *A* and *B*—saving 200 lives—but here the choices focus not on lives *saved* but on lives *lost*. Notice, also, that Options *C* and *A* are identical, although phrased differently; the same is true for Options *D* and *B*. For all those reasons, the investigators' expectation was that groups put to the choice between *C* and *D* would behave identically to those put to the choice between *A* and *B*—that is, that they would choose the sure thing, *C*, over the probabilistic option, *D*.⁸⁸ When, however, Tversky and Kahneman presented the choice between *C* and *D*, they found that 78% preferred *D* to *C* and only 22% preferred *C* to *D*.⁸⁹

Kahneman and Tversky called this odd result the “framing effect.”⁹⁰ There are several important implications of this effect. One is that it calls into question an implicit assumption in rational choice theory that decisionmakers’ choices are invariant to the manner in which information is presented to them.⁹¹ Another implication is the very practical one that those choices can depend crucially on how the information is “framed.”⁹² That is a vital point for policymakers to bear in mind. A merchant, a policymaker, a spouse or partner, a lawyer arguing to a jury or a regulatory commission—anyone might nudge someone’s choices to her preferred outcome by how she has framed the problem. Some unscrupulous framers might use this matter to their own advantage by, for example, structuring choices to get an outcome that they prefer while giving the decisionmakers the illusion that they have chosen freely.⁹³

2. Default Rules

A default rule is a starting rule that will be in effect unless the party or parties facing the rule change it by mutual agreement.⁹⁴ If the transaction costs facing the chooser are identical and low regardless of the default rule, then one

86. *Id.*

87. *Id.*

88. *Id.*

89. *Id.*

90. *Id.* This effect is closely connected to “prospect theory,” which gives a comprehensive explanation for the choice phenomena the public health example illustrates. See Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 ECONOMETRICA 263, 274 (1979); ZAMIR & TEICHMAN, *supra* note 16, at 46; see also Nicholas C. Barberis, *Thirty Years of Prospect Theory in Economics: A Review and Assessment*, 27 J. ECON. PERSPS. 173, 173 (2013).

91. Tversky & Kahneman, *supra* note 77, at 454.

92. *Id.* at 454–56.

93. WILLIAM H. RIKER, THE ART OF POLITICAL MANIPULATION 18 (1986).

94. COOTER & ULEN, *supra* note 9, at 293.

might anticipate that whatever the default is will not keep the chooser from reaching his or her most desired outcome. That is, the choice of default rule, like the choice of an initial assignment of entitlement, would seem to obey the Coase Theorem: an efficient outcome will result, regardless of the starting point, if transaction costs are low.⁹⁵ But recent behavioral research suggests that this result does not necessarily hold—that is, that the default rules or starting points may matter crucially to the outcome, even when transaction costs are zero or low.⁹⁶

In an important article, Cass Sunstein and Richard Thaler give an example of how one might think about default rules in light of behavioral economics:

[C]onsider the cafeteria at some organization. The cafeteria must make a multitude of decisions, including which foods to serve, which ingredients to use, and in what order to arrange the choices. Suppose that the director of the cafeteria notices that customers have a tendency to choose more of the items that are presented earlier in the line. How should the director decide in what order to present the items? To simplify, consider some alternative strategies that the director might adopt in deciding which items to place early in the line:

1. She could make choices that she thinks would make the customers best off, all things considered.
2. She could make choices at random.
3. She could choose those items that she thinks would make the customers as obese as possible.
4. She could give customers what she thinks they would choose on their own.⁹⁷

Sunstein and Thaler dismiss Options 2 and 3.⁹⁸ They identify Option 1 as paternalistic and Option 4 as “what many anti-paternalists would favor.”⁹⁹ But they are skeptical that most consumers have well-formed preferences about how they would like the food arranged.¹⁰⁰ They suggest that if most consumers would choose differently if the food were to be arranged in different orders, then one may conclude that preferences are not exogenous, as standard microeconomics argues, but are endogenous in some manner that seems beyond the subjects’ control and knowing.¹⁰¹

It is possible, they argue, that the goal of the cafeteria director is to maximize profits.¹⁰² If he or she is in a marketplace in which there are attractive alternative eating venues outside the organization, then competition imposes a constraint on profit-maximization.¹⁰³ But it is also possible that the cafeteria has a

95. See discussion *supra* note 13–14; *id.* at 85.

96. Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism Is Not an Oxymoron*, 70 U. CHI. L. REV. 1159, 1181 (2003).

97. *Id.* at 1164.

98. *Id.*

99. *Id.*

100. *Id.*

101. *Id.* at 1164 n.18.

102. See *id.* at 1165.

103. *Id.*

degree of market power over its customers: perhaps it is a school from which the students are forbidden to leave campus or a dormitory with which the residents have a pre-paid eating contract.¹⁰⁴

Sunstein and Thaler's central point in the cafeteria example is to suggest that paternalism (Option 1) in the arrangement of the cafeteria's choices is a mere description, not a pejorative.¹⁰⁵ There is no coercion, they suggest, in how the food is presented to customers: “[w]ould anyone object to putting the fruit and salad before the desserts at an elementary school cafeteria if the result were to increase the consumption ratio of apples to Twinkies? Is this question fundamentally different if the customers are adults?”¹⁰⁶ And:

Once it is understood that some organizational decisions are inevitable, that a form of paternalism cannot be avoided, and that the alternatives to paternalism (such as choosing options to make people worse off) are unattractive, we can abandon the less interesting question of whether to be paternalistic or not, and turn to the more constructive question of how to choose among the possible choice-influencing options. To this end we make two general suggestions. First, programs should be designed using a type of welfare analysis, one in which a serious attempt is made to measure the costs and benefits of outcomes (rather than relying on estimates of willingness to pay). Choosers should be given more choices if the welfare benefits exceed the welfare costs. Second, some results from the psychology of decisionmaking should be used to provide ex ante guidelines to support reasonable judgments about when consumers and workers will gain most by increasing options.¹⁰⁷

Sunstein and Thaler are well aware of the danger in letting someone other than the end-consumers make these decisions. To minimize that danger, they suggest that if those in authority are to make decisions about, say, how the food is to be ordered in the organization's cafeteria, they do so in a transparent manner that the end-consumers can reject.¹⁰⁸

Perhaps an even better example of Sunstein and Thaler's point about paternalistic default rules comes from a fascinating empirical study of default rules for organ donation.

The science and, therefore, availability of organ transplantation, first practiced with corneas in 1905, is one of the most significant medical advances of the last fifty-plus years.¹⁰⁹ To take one example, Dr. Christiaan Barnard performed the first heart transplant in 1967.¹¹⁰ In 2019, there were slightly more

104. See, e.g., *id.*

105. *Id.* at 1166.

106. *Id.*

107. *Id.*

108. *Cf. id.* at 1165.

109. Alexandra Z. Crawford, Dipika V. Patel & Charles N. J. McGhee, *A Brief History of Corneal Transplantation: From Ancient to Modern*, 6 OMAN J. OPHTHALMOLOGY 12, 12 (2013).

110. *First Human Heart Transplant*, HISTORY, <https://www.history.com/this-day-in-history/first-human-heart-transplant> (Dec. 2, 2019) [https://perma.cc/J556-QRHG].

than 3,500 heart transplants and almost 40,000 organ transplants of all kinds in the U.S.¹¹¹

The central economic issue in organ transplantation is the huge excess demand for transplantable organs. There were approximately 112,000 people on the waiting lists for organ transplants last year and only 40,000 organs available for transplant (of which about 7,400 came from living donors).¹¹² Roughly 6,000 people on the waiting list die each year without having received a transplant.¹¹³ At the same time that the number of transplants has been increasing, the number of people on the waiting list has been growing much more rapidly.¹¹⁴

How should we deal with this persistent and widening excess demand? U.S. federal law prohibits an explicit market payment for an organ;¹¹⁵ so, the most obvious economic proposal for increasing supply is off the table. Some commentators have explored the possibility of avoiding this proscription by having the donee give in-kind gifts, such as monetary donations to a legitimate charitable organization, in exchange for the donor's organ(s) for transplantation.¹¹⁶

Another possible method of increasing the supply of transplantable organs is to change the default rule for organ donation. There are two principal defaults—one in which individuals are presumed to consent to have their organs harvested for transplantation upon their death, and one in which individuals are presumed *not* to consent to having their organs harvested. Of course, these are merely competing defaults: individuals may choose to move away from them. For instance, in the presumed consent regime, someone who does not want to donate her organs can simply opt out by, for example, signing the back of her driver's license on the appropriate line that indicates that she is not an organ donor. Similarly, in the regime in which the default is no donation, an individual can opt-in by, for example, signing the back of his driver's license to indicate that some or all of his organs are available for transplantation. If the costs of contracting away from either of these defaults—either opting-in or opting-out—is minor (as, in fact, it is), then one might predict that the ultimate number of organs donated for transplantation would be roughly the same under either default. That is, the choice of default might have no effect on the supply of transplantable organs.

111. There were, according to the United Network for Organ Sharing, 39,717 organ transplants in 2019. Broken down by different organs, there were 23,401 people receiving a transplanted kidney, 8,896 receiving a transplanted liver, 3,551 receiving a transplanted heart, and 2,714 receiving a transplanted lung. There has been a 38% increase since 2014 in transplants from deceased donors. See Linda Searing, *The Big Number: 39,717 Organ Transplants in the U.S. Last Year*, WASH. POST (Mar. 2, 2020, 6:30 AM), https://www.washingtonpost.com/health/the-big-number-39717-organ-transplants-in-the-us-last-year/2020/02/28/2f9c376e-5976-11ea-9000-f3cffee23036_story.html [https://perma.cc/FY7W-NAWQ].

112. *See id.*

113. *Cf. id.*

114. *Id.*

115. The National Organ Transplantation Act of 1984, Pub. L. 98-507, § 301(a).

116. See e.g., Mélanie Levy, *State Incentives to Promote Organ Donation: Honoring the Principles of Reciprocity and Solidarity Inherent in the Gift Relationship*, 5 J.L. & BIOSCIENCES 398, 429 (2018). See generally David Orentlicher, *Presumed Consent to Organ Donation: Its Rise and Fall in the United States*, 61 RUTGERS L. REV. 295 (2009) (outlining presumed consent in U.S. organ donation law).

But there is persuasive empirical evidence to suggest that the choice of default *does* affect the number of donated organs.¹¹⁷ Here are the facts. 90% of Americans approve of organ donation and express an intention to donate.¹¹⁸ But only 60% have actually made a decision to donate, and only 28% have signed a donor card or in some other way made their intention explicit.¹¹⁹ Surveys in Germany, Spain, and Sweden have found that individuals in those countries have exactly the same feelings about donation and have done just as little about it as have those in the U.S.¹²⁰

To see if they could explain these facts, Johnson and Goldstein conducted three experiments.¹²¹ In the first, they used an on-line survey with 161 respondents.¹²² Those participants were told that they had recently moved into a new state and had to adopt a policy with respect to their organ donations.¹²³ One-third of the respondents were told that the prevailing rule was *not* to be a donor but that they could opt-in to become a donor.¹²⁴ Another third were told that the prevailing rule was to be an organ donor but that they could opt-out of that rule.¹²⁵ A final third of the subjects were told that there was no default rule; the subject had to express a preference by opting into becoming a donor or opting out of being a donor.¹²⁶

The results were revealing. Subjects' donation rates were about twice as high when they had to opt-out as when they had to opt-in, even though the cost of expressing either option was the same.¹²⁷ In the neutrality condition, 79% chose to donate, only slightly less than the percentage of respondents who chose to donate when there was presumed consent with opt-out.¹²⁸

These results would suggest that, all other things equal, and following the logic of libertarian paternalism articulated by Sunstein and Thaler, paternalism would argue for a policy of presumed consent with opt-out, either because that conforms to individuals' "true" preferences or that having a greater supply of donated organs is socially desirable.

117. See generally Eric J. Johnson & Daniel G. Goldstein, *Do Defaults Save Lives?*, 302 SCI. 1338, 1338 (2003).

118. *Organ Donation Statistics*, HEALTH RES. & SERVS. ADMIN. (Feb. 2021), <https://www.organdonor.gov/statistics-stories/statistics.html> [perma.cc/2VX9-NKCS]

119. *Id.*; Johnson & Goldstein, *supra* note 117, at 1338.

120. Johnson & Goldstein, *supra* note 117, at 1338.

121. *Id.*

122. *Id.*

123. *Id.*

124. *Id.*

125. *Id.*

126. *Id.*

127. The donation rate was 42% when respondents had to opt in and 82% when they had to opt out of presumed consent. *Id.*

128. There is still a bit of a puzzle about why these rates are so dramatically different when the costs of opting-in or opting-out are equal. Johnson and Goldstein propose three possibilities: (1) respondents construe the default as a recommendation from policymakers; (2) accepting a default is virtually costless, while opting-in or -out is costly, and people seek to minimize their costs; and (3) the default is the status quo and people have a bias toward the status quo. Neither of the last two possibilities seems to explain the results of the neutrality version of the experiment. *Id.*

Johnson and Goldstein also compared organ donation rates across European countries that differ according to whether they have presumed consent with an opt-out rule or no consent with an opt-in rule.¹²⁹ The four countries that have an opt-in rule—Denmark, the Netherlands, the United Kingdom, and Germany—have much lower donation rates, ranging from 4.25% in Denmark, to 12% in Germany, to 17.17% in the UK, to 27.5% in the Netherlands.¹³⁰

The six countries that have opt-out rules—Austria, Belgium, France, Hungary, Poland, Portugal, and Sweden—have much higher rates of donation, ranging from a low of 85.9% to a high of greater than 99%.¹³¹

It does not appear to be the case that religion, total population, ethnic diversity, or income per capita are statistically significant explanatory variables for these stark differences in actual donation rates.¹³²

Finally, the authors also ran a regression in which the dependent variable was the actual number of donations (presumably scaled by population) and the independent variables included a dummy variable for whether the prevailing rule on donation was one of opt-in or opt-out.¹³³ Their results were strong: “When donation is the default, there is a 16.3 percent increase in donation.”¹³⁴

“Interestingly, beginning in the 1960s about two-thirds of the states adopted presumed-consent laws for certain body part donations, such as corneas, pituitary glands, and some tissues and organs.”¹³⁵ The 1987 Uniform Anatomical Gift Act (UAGA) adopted presumed consent for a limited number of body-part donations.¹³⁶ The 2006 Revised UAGA, however, eliminated the presumed consent provision of the 1987 Act and substituted a requirement of actual consent by the donor or immediate family members.¹³⁷

Rational choice theory argues that in some—perhaps, many—circumstances (especially those of low transaction costs) default rules do not matter to the efficient allocation and use of resources.¹³⁸ “In contrast, behavioral experiments demonstrate that default rules matter to choice: [f]or whatever reason, most people follow the default rule.”¹³⁹ As a result, where policymakers and others set the default may matter significantly to the choices that those facing the default make. As was the case with framing, people may feel the illusion of

129. *Id.* at 1339.

130. *Id.* at 1338.

131. *Id.*

132. See *id.* (discussing variables and presenting possible explanations for discrepancies).

133. *Id.* at 1339.

134. *Id.*

135. Ulen, *The Importance of Behavioral Law*, *supra* note 78, at 100.

136. The Uniform Law Commission (ULC) originally proposed the Uniform Anatomical Gift Act in 1968, less than a year after Dr. Barnard performed the first successful heart transplant. Ultimately, all fifty states and the District of Columbia adopted the UAGA. The ULC proposed revisions in 1987 and 2006 in light of new technologies of transplantation and a desire to make the process of donating easier so as to reduce the excess demand for transplantable organs. *Spotlight ULC: 50th Anniversary of The Uniform Anatomical Gift Act*, UNIF. L. COMM’N, <https://www.uniformlaws.org/aboutulc/spotlightulc> (last visited July 26, 2021) [<https://perma.cc/R8BJ-AV8X>].

137. Ulen, *The Importance of Behavioral Law*, *supra* note 78, at 100.

138. *Id.* at 101.

139. *Id.*

choosing freely when, in fact, their choices have been significantly determined by the default rule.¹⁴⁰

B. A Behavioral Account of Gambling

The examples of behavioral analysis in Section III.A.2 and their contrast to traditional rational-choice-theory analysis make a compelling case for beginning any analysis of human judgment and decision-making from a behavioral perspective and not from an assumption that individuals are rational actors. I say that knowing full well that there is so much more that we need to learn (and will learn) about the fallibilities of the human mind. We are at an early stage of our behavioral knowledge, but we already know enough to mistrust any analysis that begins from an assumption that rationality characterizes human decisions.

Among many other implications, this fact means that we need to rethink gambling regulation, at least the economic ground or grounds for regulating. More specifically, we need to see if there are predictable mistakes in thinking that affect or might affect individual gambling behavior and provide the basis for regulation of that industry. This inquiry will be necessarily speculative because there is, to my knowledge, no comprehensive behavioral study of gambling behavior.¹⁴¹ I envision this Section as making a preliminary case in favor of that more comprehensive study.

Additionally, I shall use this speculation to try to suggest the sorts of regulation that would make sense in light of the individual fallibilities that gamblers might exhibit.

1. Imperfect Rationality and Gambling

Although I have only written at length about two findings of the behavioral literature, there are many more,¹⁴² and some of them apply directly to gambling.

There are many examples of people not being able to deal with probabilistic calculations. For example, experiments have shown that for relatively low-probability events, most people set the probability equal to zero.¹⁴³ And most people are overoptimistic with regard to their own life circumstances; they believe that they are much less likely than objective statistics suggest to contract cancer or to have an accident or to have an adverse event, such as divorce.¹⁴⁴ Relatedly, they believe that they are far more likely to win the lottery than objective statistics

140. See Russell B. Korobkin, *Wrestling with the Endowment Effect, or How to Do Law-and-Economics Without the Coase Theorem*, in THE OXFORD HANDBOOK OF BEHAVIORAL LAW AND ECONOMICS 300 (Eyal Zamir & Doron Teichman eds., 2014); Eyal Zamir, *Loss Aversion*, in THE OXFORD HANDBOOK OF BEHAVIORAL LAW AND ECONOMICS, *supra*, at 268.

141. There is, however, an extensive professional literature on cognitive and behavioral therapy for problem gambling.

142. For surveys of many more examples of imperfect rationality, see generally SCOTT PLOUS, THE PSYCHOLOGY OF JUDGMENT AND DECISION MAKING (1993). See also ZAMIR & TEICHMAN, *supra* note 16, at 19.

143. ZAMIR & TEICHMAN, *supra* note 16, at 43.

144. *Id.* at 61.

would suggest or to have a favorable outcome at work or in starting a new business than are others.¹⁴⁵ And people are generally far more likely to use readily available information than harder-to-get (but possibly more accurate) information.¹⁴⁶ People also suffer from myopia in evaluating events, placing greater weight on immediate gratification than on future discomfort or pain.¹⁴⁷ As a result, they may find the pleasure of a fatty steak dinner tonight to outweigh the adverse health consequences of eating that steak ten to thirty years hence.¹⁴⁸ Finally, there is the famous “gambler’s fallacy,” the belief that for a series of statistically independent events, such as a coin flip with a fair coin, the likelihood of a head appearing on the next flip is higher after a series of tails. Put less formally, that fallacy says that if something (like a slot machine’s paying-off) has happened less frequently than normal in the recent past, then it is more likely to pay off in the near future. Or the reverse: If a machine has paid out more frequently than normal in the past, then it is less likely than normal to pay off in the near future.¹⁴⁹

These various cognitive imperfections suggest that many people have difficulties that could lead them to have problems of self-control when they confront opportunities to gamble.

2. *Behavioral Regulation of Gambling*

I note, again, that the behavioral perspective focuses not on the supply side of the gambling market but, rather, on the issues that gamblers may have in maintaining self-control when confronted with gambling opportunities. I focus on two particular regulatory strategies—information disclosure and self-exclusion.

An abiding concern that regulators must have with respect to gambling is that those providing the gambling opportunities not tamper with the underlying probabilities of the opportunities that they are providing and, relatedly, that they not mislead gamblers about the opportunities and probabilities that lie before them. That is, they ought not to exaggerate the probabilities of winning any given opportunity, nor fail to report on the underlying probabilities if asked.¹⁵⁰

145. See Aria Bendix, *Here’s Why People Believe They’ll Win the \$750 Million Powerball Jackpot—Even When the Odds Are 1 in 292 Million*, BUS. INSIDER (Mar. 27, 2019, 10:08 AM), <https://www.businessinsider.com/powerball-odds-why-people-think-theyll-win-2018-10> [https://perma.cc/TX6S-BQM3].

146. For example, most people believe that murder is far more common than suicide, whereas there are three times as many suicides as murders in the U.S. In 2019, there were approximately 48,000 suicides and 16,000 murders. For the number of murders, see *Total Number of Homicides in the United States in 2019, by State*, STATISTA, <https://www.statista.com/statistics/195331/number-of-murders-in-the-us-by-state/> (last visited July 26, 2021) [https://perma.cc/463B-CQF2]. Suicides were the 10th leading cause of death in the U.S. in 2018. Jiaquan Xu, Sherry L. Murphy, Kenneth D. Kochanek & Elizabeth Arias, *Mortality in the United States, 2018*, CTRS. FOR DISEASE CONTROL & PREVENTION (Jan. 2020), <https://www.cdc.gov/nchs/products/databriefs/db355.htm> [https://perma.cc/35AQ-94JH].

147. ZAMIR & TEICHMAN, *supra* note 16, at 88–93.

148. *Id.* at 92–93.

149. *Id.* at 33.

150. Gaming establishments often advertise something to the effect that “our machines pay off more frequently.” That contention should be demonstrable.

While gamblers ought to inform themselves about these probabilities, there might also be a responsibility on gambling establishments to provide information on the probabilities of the various gambling opportunities as a condition for licensing or certification by some third-party, such as a “fair-play assessor.”¹⁵¹

I am fully aware of the fact that simply providing information is not frequently a means of changing behavior.¹⁵² Nonetheless, such disclosures can serve to dissuade some from risky behavior, and it may influence gambling establishments to be more transparent. Once having made those disclosures, the establishments might be investigated for fraud or unconscionable behavior if their actual practices are at odds, so to speak, with their published probabilities.

The other practice that has become more common and that addresses the behavioral perspective is the increasingly widespread practice of allowing people with gambling problems to self-exclude from gambling establishments.¹⁵³ Through self-exclusion and self-restriction programs,¹⁵⁴ many states allow people to sign and file a form that puts their name on a list that will prevent “them from having lawful access to casinos for a designated term, such as one year or a lifetime.”¹⁵⁵

Self-exclusion commitments or commitment bonds¹⁵⁶ are like our prior example of the person who knows her proclivity to hit the snooze alarm and so puts the alarm clock across the room so as to remove the temptation to sleep in and miss an appointment.

It would be interesting to know how effective these self-exclusion devices have been and if there are any lessons that can be gleaned from their use about

151. See generally Ryan Grandea, Note, *Securing the Best Odds: Why Congress Should Regulate Sports Gambling Based on Securities-Style Mandatory Disclosure*, 41 CARDozo L. REV. 1229 (2020); John Rosengren, *How Casinos Enable Gambling Addicts*, ATLANTIC (Dec. 2020), <https://www.theatlantic.com/magazine/archive/2016/12/losing-it-all/505814/> [https://perma.cc/G2MY-SW24] (discussing how lack of disclosure may facilitate gambling addiction).

152. A persuasive case for skepticism about mandated information disclosure is OMRI BEN-SHAHAR & CARL E SCHNEIDER, *MORE THAN YOU WANTED TO KNOW: THE FAILURE OF MANDATED DISCLOSURE* (2014).

153. Emir Aly Crowne-Mohammed & Meredith A. Harper, *Rewarding Trespass & Other Enigmas. The Strange World of Self-Exclusion & Casino Liability*, 1 UNLV GAMING L. J. 99, 105–106 (2010); see also *Casino Self-Exclusion*, COUNCIL ON COMPULSIVE GAMBLING OF PA., <https://www.pacouncil.com/self-exclusion/casino-self-exclusion/> (last visited July 26, 2021) [https://perma.cc/CFH3-R67A].

154. See, for example, California’s program of confidential self-exclusion, *Self Exclusion Program*, CAL. DEPT. OF JUST., https://oag.ca.gov/gambling/exclusion_self. (last visited July 26, 2021) [https://perma.cc/3THQ-2EVC]. The form allows problem gamblers to exclude themselves from any casino in California (save those operated by Indian tribes). To access the online form, see *Self-Exclusion Registration*, CAL. DEPT OF JUST., <https://cms.doj.ca.gov/selfExclusionHome.action> (last visited July 26, 2021) [https://perma.cc/X9D6-Y469].

155. *Id.*

156. See Michael Abramowicz & Ian Ayres, *Commitment Bonds*, 100 GEO. L.J. 605, 605 (2012). Commitment bonds are those in which a “bond seller makes a commitment and promises to pay a forfeit if the seller fails to meet the bond conditions . . . Governments and other parties may use such bonds to facilitate commitments to principles from which they later may face temptation to deviate,” such as gambling. Professor Ayres has long managed a website, www.stickK.com, at which one can enter into commitment bonds. For example, suppose that one is a “Never Trumper” who desires to lose weight. At the website you could enter into a commitment to lose, say, fifty pounds by March 1, 2021, or donate \$1,000 (which you leave in escrow to the website) to the Trump Save America leadership PAC. The inspiration for this sort of bond or contract is that you will bear a very high cost for not fulfilling your commitment. See STICKK, <https://www.stickk.com/> (last visited July 26, 2021) [https://perma.cc/J2K5-ZFY6].

what works and what does not. They may well work much better in theory than in practice.¹⁵⁷ The commitment bonds may work best, for instance, where there is a reliable third-party monitor to verify compliance with the bond conditions. Similarly, with the self-exclusion forms. There is an incentive, of course, for the casinos to give full effect to the gambler's apparent desire not to be admitted. But one thing we saw at the very start of this Article is that the places in which to gamble have increased dramatically. On-line gaming, for example, is available twenty-four hours per day, seven days per week, 365 days per year.¹⁵⁸ So, even being self-excluded from casinos would be, for a gambler determined to gamble, an easy restriction to evade.

IV. CONCLUSION

My goal in this Article was modest: to show that the traditional or standard economic model for governmental regulation of an industry does not seem to apply to gambling but that the findings of behavioral decision experiments, and its focus on individual fallibilities, do seem to offer a justification for modest intervention into the gaming industry.

I noted that there are other reasons besides economic or behavioral concerns for intervening in private decision making. Those reasons are not in tension with the behavioral argument. I expect, to the contrary, that those other noneconomic reasons for regulating gambling are complementary to the behavioral arguments I have advanced.

157. Professor Ayres' stickK website has testimonials and some data about what users have been able to do. See *id.* I particularly recommend this article: Francesco Gino, *Need More Self-Control?: Try a Simple Ritual*, SCI. AM. (Aug. 21, 2018), <https://www.scientificamerican.com/article/need-more-self-control-try-a-simple-ritual/> [https://perma.cc/3WLN-NELB].

158. One last method of exerting self-control that I should mention is Gamblers Anonymous, a recovery program for problem gamblers founded in 1957 on the model of the twelve-step program of Alcoholics Anonymous ("AA"). See GAMBLERS ANONYMOUS, <http://www.gamblersanonymous.org/ga/node/1> (last visited July 26, 2021) [https://perma.cc/H66N-DXNP]. According to one study "less than 8 percent of those who initially attend GA remain in the program and abstain from gambling for a year." Ruth M. Stewart & R. Iain F. Brown, *An Outcome Study of Gamblers Anonymous*, 152 BRITISH J. PSYCHIATRY 284 (1988). For comparison, addiction specialists report that AA's success rate is between only 8% and 12%. Dan Wagener, *What is the Success Rate of AA*, AM. ADDICTION CTRS., <https://americanaddictioncenters.org/rehab-guide/12-step/whats-the-success-rate-of-aa> (Jan. 26, 2021) [https://perma.cc/39KK-X8W9].

