

PRESENT BIAS AND CRIMINAL LAW

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Although “present bias” (or weakness of will, impulsiveness, myopia, or bounded willpower) was flagged as an issue for legal examination by Tom Ulen and Russell Korobkin over a decade ago, the concept has received insufficient attention in the legal field—and most of that attention has focused on its implications for the regulation of credit and savings. But, as demonstrated by this Article, the inconsistency of time preferences has wider implications, especially for criminal law. First, present bias may have significant implications for the general deterrence of crime. Individuals with time-inconsistent preferences may give in to immediate temptations to offend, even though they will not plan to exploit more distant opportunities to offend. To create additional deterrence by exploiting the present bias, one must either make the deferred costs of crime immediate or make the immediate benefits of crime deferred. For this reason, present bias heightens the importance of timing arrests closer to the commission of a crime—which suggests overlooked benefits from undercover operations. It also increases the efficiency of private crime prevention when these measures pose costs that occur contemporaneously with the benefits of crime. Second, present bias explains addiction, otherwise puzzling conditions of probation and parole, and the self-control mechanisms for dealing with addiction and tempting criminal behavior. Preventative measures, whether imposed by the state as a condition of probation and parole or imposed by the potential offender through “self-exclusion,” work by preventing an individual from having the opportunity to succumb to temptation.

One topic of behavioral economics that has received less attention in law than I think it deserves is what is variously discussed as the problem of bounded self-control, weakness of will, impulsiveness, procrastination, myopia, akrasia, or the term I will use, “present bias.” The issue is one of time-inconsistent preferences, sometimes modeled with “hyper-

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bolic” discount rates as opposed to standard exponential discount rates.¹ Lee Fennell recently summarized the extensive experimental literature finding that “animals and people can experience preference reversals as a pair of temporally separated choices draws nearer in time, even though the relative values of the payoffs and the temporal distance between them has not changed.”² The time inconsistency typically pushes one to abandon long-term preferences in favor of immediate gratification.³ For example, “Prudence might prefer \$105 after 366 days to \$100 after 365 days but change her mind when the choice becomes one between \$100 today and \$105 tomorrow.”⁴ Discounting the future is rational, but rationality would imply a stable (exponential) discount rate, such that Prudence would either favor the \$105 or the \$100 in both cases. Various theories seek to explain why individuals tend to exhibit this time inconsistency.⁵

In their classic article on behavioral economics,⁶ Tom Ulen and Russell Korobkin flag the problem of present bias as an issue for law:

An implication of time-inconsistent discount rates is that “people will always consume more in the present than called for by their previous plans.” An individual might plan to save X percent of her salary next year but then decide when she receives it that she prefers to spend it rather than save (thus making appropriate the cliché that money can “burn a hole” in one’s pocket).⁷

Ulen and Korobkin focus on the implications of those time inconsistencies for tax and savings policy, where they argue weakness of will might justify paternalistic savings programs like social security.⁸

This Article focuses instead on criminal law, where I think the behavioral insight has great value. I once had the distinct pleasure of coauthoring a paper with Tom Ulen on behavioral criminal law and economics where we very briefly discussed the relevance of willpower problems

1. Discount rates capture the degree to which an individual values future payoffs less than present payoffs. We say the future is “discounted to present value.” Exponential discount rates express a function where each unit of delay diminishes the present value of a gain or loss by the same degree. Hyperbolic discount rates express a function where early delays diminish the present value much more than later delays. See Shane Frederick et al., *Time Discounting and Time Preference: A Critical Review*, 40 J. ECON. LITERATURE 351, 355–62 (2002); David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 Q.J. ECON. 443, 446–51 (1997).

2. Lee Anne Fennell, *Willpower and Legal Policy*, 5 ANN. REV. L. & SOC. SCI. 91, 94 (2009).

3. A workaholic or ascetic might exhibit time inconsistency in the opposite direction, preferring now to engage in some vacation or consumptive indulgence a year in the future, but always deferring the vacation or indulgence when the time comes.

4. Fennell, *supra* note 2, at 94.

5. See a brief review of theories in M. Keith Chen & Alan Schwartz, *Intertemporal Choice and Legal Constraints* 2–3 n.3 (Yale Law Sch. John M. Olin Ctr. for Stud. in Law, Econ., & Pub. Pol., Research Paper No. 381, 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1396333.

6. Or destined to be classic, if articles, like cars, require twenty years of aging before they can achieve classic status. See Russell B. Korobkin & Thomas S. Ulen, *Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics*, 88 CALIF. L. REV. 1051 (2000).

7. *Id.* at 1120 (footnotes omitted).

8. See *id.* at 1121; see also Chen & Schwartz, *supra* note 5, at 4–7, 15–17.

to criminal law.⁹ Here, I wish to extend and complicate what Professor Ulen and I had to say. I claim that present bias directs our attention to the importance of the timing of an arrest to general deterrence, reveals new advantages of undercover operations and the use of defensive force and precautions by victims, explains otherwise puzzling conditions of probation and parole, and offers important insights into the best policy responses to the problem of addiction.

I. THE EXISTING LITERATURE ON PRESENT BIAS AND CRIMINAL LAW

Other articles review the empirical and theoretical literature on inconsistent time preferences.¹⁰ Here I discuss the scant law and economics literature that has applied the empirical and theoretical literature to criminal law. Note two preliminary points:

First, many criminologists have stressed poor self-control or will-power problems as a key individual variable associated with crime.¹¹ This claim could result *either* from time inconsistency of the sort explored here *or* from internally consistent but unusually high discount rates. Because criminal punishment is always deferred—it occurs, if at all, in the future after the defendant has been apprehended and convicted—the threat of punishment has less effect on those with high discount rates. It might appear that my topic—present bias and criminal law—is the effect of high discount rates on crime, but that is not the case. A person with consistent but above-average discount rates values the present over the future more than most people, but that person is not *biased* toward the present any more than a person who prefers pistachio to chocolate flavor is *biased* towards pistachio. Economics treats the individual's preference as a measure of value, and how much one favors the present over the future is as much a matter of personal taste as anything else. Only when the preference for the present is time inconsistent do we call it biased. Here, we use the individual's own preference for the future—preferring \$105 after 366 days to \$100 after 365 days—to interpret the inconsistent preference for \$100 today over \$105 tomorrow as biased.¹² The literature I review examines *this* phenomenon, which I hope to show has independent normative implications for criminal law.

9. See Richard H. McAdams & Thomas S. Ulen, *Behavioral Criminal Law and Economics*, in *CRIMINAL LAW AND ECONOMICS* 403, 423–25 (Nuno Garoupa ed., 2009).

10. See, e.g., Fennell, *supra* note 2; Frederick et al., *supra* note 1; Laibson, *supra* note 1; Ted O'Donoghue & Matthew Rabin, *Doing It Now or Later*, 89 *AM. ECON. REV.* 103 (1999); Ted O'Donoghue & Matthew Rabin, *Procrastination on Long-Term Projects*, 66 *J. ECON. BEHAV. & ORG.* 161 (2008).

11. See, e.g., MICHAEL R. GOTTFREDSON & TRAVIS HIRSCHI, *A GENERAL THEORY OF CRIME* 85–120 (1990); JAMES Q. WILSON & RICHARD J. HERRNSTEIN, *CRIME AND HUMAN NATURE* 430–37 (1985).

12. Of course, other interpretations are possible. One could accept the preference for immediate consumption and argue the other preferences are biased toward the future. I follow most theorists who have given persuasive arguments for using long-term preferences as the baseline, at least in most cases.

Second, because behavioral biases or heuristics interact with each other, a comprehensive analysis would consider present bias in combination with other relevant cognitive imperfections. Because punishment is uncertain, it seems especially relevant to consider the confounding effects of loss aversion and ambiguity aversion.¹³ I focus solely on present bias, however, leaving the more complete analysis to a later day. For the present discussion, I assume neutrality regarding risk, loss, or ambiguity. Potential offenders are therefore motivated by *expected* punishment, as discounted to present value.

Now let us turn to the few papers offering economic models of will-power and crime. First is an article by Robert Cooter. Before much of the relevant experimental literature existed, Cooter modeled the problem of impulsiveness or “akrasia.”¹⁴ Cooter’s model assumes there is some fluctuation in an individual’s discount rate (or risk preferences; he models everything described below for risk preferences and then notes the parallel for time preferences). For each time period, an individual draws a discount rate from a probability distribution of discount rates for that individual. The farther from one’s mean preference for the future, the lower the probability one draws a particular discount rate. Thus, there will be a set of decisions where most of an individual’s possible time preferences will cause the individual to favor the future over the present. Yet, where the individual with low probability draws an unusually high discount rate, the individual “lapses” by favoring immediate consumption over the future for the same set of decisions.¹⁵

Cooter’s akrasia model is episodic in a way that differs from later models of hyperbolic discounting. If Prudence has hyperbolic discount rates, she might *always* prefer \$105 in 366 days to \$100 in 365 days but will also *always* prefer \$100 today to \$105 tomorrow. A person could be consistently inconsistent. In Cooter’s model, at any given moment, a person has fully consistent (exponential) time preferences over all time periods, but from moment to moment, those preferences change according to mood. Thus, a person who usually prefers *both* (1) \$105 in 366 days over \$100 in 365 days *and* (2) \$105 tomorrow to \$100 today, may on occasion lapse and prefer the opposite—the \$100 sooner over the \$105 later across *both* time periods (and any other time periods separated by one day).

Cooter applies his model to the decision to commit a crime (or tort). Where one’s discount rate fluctuates, one may “lapse” into committing the crime because the benefits from crime are enjoyed immediately, while the potential sanctions are delayed. One implication Cooter draws is that *ex ante* regulation, imposing small sanctions for risking harm, will

13. See McAdams & Ulen, *supra* note 9, at 417–23.

14. See Robert D. Cooter, *Lapses, Conflict, and Akrasia in Torts and Crimes: Towards an Economic Theory of the Will*, 11 INT’L REV. L. & ECON. 149 (1991).

15. *Id.* at 150–54.

generate more deterrence than ex post regulation, “imposing large sanctions for harm after it occurs.”¹⁶ He apparently means that the closer in time the punishment is to the behavior the punishment seeks to deter, the less vulnerable deterrence is to fluctuating time preferences. When Tom Ulen and I briefly discussed the implications of present bias for criminal law, we similarly said it might justify criminal law’s frequent use of ex ante regulation.¹⁷ I shall question, or at least complicate, these claims below.

In their influential paper on behavioral law and economics, Christine Jolls, Cass R. Sunstein, and Richard Thaler (JST) briefly address the issue they label “bounded willpower.”¹⁸ JST note the relevance of “bounded willpower” to criminal law: “A central feature of much criminal behavior is that the benefits are immediate, while the costs (if they are incurred at all) are spread out over time—often a very long time.”¹⁹ Not only are the temporally distant parts of a long prison term heavily discounted, but they are particularly discounted when compared to the immediate rewards of offending. JST also mention the problem of addiction, where they endorse Mark Kleiman’s idea of a complex system of “coerced abstinence” for addicts on probation or parole.²⁰ I offer some more detailed remarks on addiction and probation below.

Recently, Manuel Utset gave present bias the extended treatment it deserves.²¹ Utset stresses the problem of procrastination. In the above example, Prudence chooses \$100 today over \$105 tomorrow even though she prefers \$105 in 366 days over \$100 in 365 days. Now let us assume that Prudence has to *take action* to receive the \$105 and that the action costs \$100 one day before she will receive the \$105. The same problem emerges: Prudence may decide it is worthwhile to take an action in 365 days that will then cost her \$100 in order to receive \$105 in 366 days, but when 365 days elapse, she prefers not to engage in the action and does not receive the \$105. She says: “I’ll do it tomorrow,” but makes the same decision the next day. Utset thus defines procrastination as occurring

16. *Id.* at 154.

17. See McAdams & Ulen, *supra* note 9, at 423–24.

18. See Christine Jolls, Cass R. Sunstein & Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1471 (1998). JST place “bounded willpower” alongside “bounded rationality” and “bounded self-interest,” which together comprise the findings of behavioral economics.

19. *Id.* at 1538.

20. *Id.* at 1540.

21. See Manuel A. Utset, *Hyperbolic Criminals and Repeated Time-Inconsistent Misconduct*, 44 HOUS. L. REV. 609 (2007) [hereinafter Utset, *Hyperbolic Criminals*]. Utset has applied the problem of present bias to a variety of legal domains. See Manuel A. Utset, *A Model of Time-Inconsistent Misconduct: The Case of Lawyer Misconduct*, 74 FORDHAM L. REV. 1319 (2005); Manuel A. Utset, *The Temporally Extended Family and Self-Control: An Essay for Lee E. Teitelbaum*, 2006 UTAH L. REV. 107; Manuel A. Utset, *A Theory of Self-Control Problems and Incomplete Contracting: The Case of Shareholder Contracts*, 2003 UTAH L. REV. 1329; see also Manuel A. Utset, *Procrastination and the Law*, in *THE THIEF OF TIME: PHILOSOPHICAL ESSAYS ON PROCRASTINATION* 253 (Chrisoula Andreou & Mark D. White eds., 2010).

when a person concludes at Time 0 (T0) that some costly action is worth doing at Time 1 (T1) to obtain benefits at Time 2 (T2), but at T1 does not do the action only because the immediate costs loom larger when they are immediate.²² He refers to the “short-term multiplier” that makes present costs and benefits look larger than they appear from any other time perspective.²³

Utset demonstrates that time inconsistency can cause both crime *and compliance* that would not otherwise occur. He identifies two situations of procrastination-induced crimes. One is where the law requires some action with immediate costs and future benefits—such as the filing of income tax returns, corporate disclosures, or changes in environmental emissions.²⁴ Thus, at T0 the individual decides that it is worthwhile to incur the costs of compliance at T1 and thereby avoid the expected sanctions at T2, but when T1 arrives, the short-term multiplier causes the costs to loom larger (or, as I would put it, the future benefits are more heavily discounted when being compared to immediate costs) and the individual offends. Thus, the individual procrastinates legal compliance. Perhaps the more standard case is where the crime forbids some action, the benefits of which are immediate while the costs are deferred.²⁵ Thus, at T0 the individual decides that it is not worthwhile to commit a criminal act and receive benefits at T1, given the expected costs to be incurred at T2. But at T1 the short-term multiplier makes the benefits loom larger (or the future costs are more heavily discounted relative to immediate benefits) when compared to the deferred costs and the individual offends.

Counterintuitively, Utset also identifies time-inconsistent obedience.²⁶ Some crimes require an investment in advance of rewards. Imagine a complex embezzlement scheme, or what scam artists call a “long con,” in which the offender requires a costly period of time to gain the trust of the intended victim.²⁷ Or imagine an art theft where no one will pay for the stolen object until some time passes and the authorities are no longer working as hard to find the thieves. In either example, an individual could decide at T0 that the investment in the crime at T1 is worthwhile to achieve the benefits at T2, but when T1 occurs, the immediacy of costs causes extra discounting of future benefits and the individual procrastinates the crime.

From this model, Utset draws a number of implications. First, the conventional model of deterrence is not precisely correct for individuals with inconsistent time preferences. As just explained, present bias may

22. Utset, *Hyperbolic Criminals*, *supra* note 21, at 626–42.

23. *Id.* at 645.

24. *Id.* at 644–45.

25. *Id.* at 644.

26. *Id.* at 665–68.

27. See Richard H. McAdams, *Signaling Discount Rates: Law, Norms, and Economic Methodology*, 110 *YALE L.J.* 625, 661–63 (2001) (reviewing ERIC A. POSNER, *LAW AND SOCIAL NORMS* (2000)).

cause individuals to commit more or less crime.²⁸ Second, to influence present-biased individuals who will otherwise commit more offenses, there are policy implications other than the obvious one of increasing expected sanctions (by increasing the probability of detection or the severity of punishment). It may be preferable in some cases to use the law to reduce the immediate benefits of crime or increase immediate non-sanction costs.²⁹ For example, Utset notes that casinos and banks often keep employees separated from large amounts of cash, thus decreasing the benefits of committing a theft.³⁰ Defensive measures against crime can be inefficient if they merely displace crime to a different victim.³¹ But Utset argues that even though defensive measures might seem inefficient because they seem so unlikely to stop a determined criminal, they may be efficient because a present-biased criminal is not likely to search very long for other opportunities to commit the crime.

Utset also suggests that law can efficiently exploit the present bias in potential offenders. His example is Chicago's Anti-Gang Loitering ordinance, which plausibly increases the costs of drug transactions for both buyers and sellers.³² More generally, conspiracy liability and other forms of inchoate liability might increase the immediate nonsanction costs (costs taken to lower the probability of detection) of preparing for crime, especially for group crime. Utset posits that immediate liability increases search costs for criminals looking for partners who are capable of overcoming the collective action problems involved in joint crimes, i.e., those who are trustworthy, competent, and willing to share an attractive amount of the joint surplus.

In the next Part, I extend the existing literature on present bias and criminal law, in some cases disagreeing with some of the existing theoretical claims, such as this last claim by Utset.

28. Utset, *Hyperbolic Criminals*, *supra* note 21, at 656–65.

29. *Id.*

30. *Id.* at 659.

31. On displacement, see Walter Enders & Todd Sandler, *What Do We Know About the Substitution Effect in Transnational Terrorism?*, in RESEARCH ON TERRORISM: TRENDS, ACHIEVEMENTS AND FAILURES 119, 131–32 (Andrew Silke ed., 2004); Evan Wood et al., *Displacement of Canada's Largest Public Illicit Drug Market in Response to a Police Crackdown*, 170 CAN. MED. ASS'N J. 1551, 1554–55 (2004). On the inefficiency of precautions against crime when they cause displacement, see Omri Ben-Shahar & Alon Harel, *The Economics of the Law of Criminal Attempts: A Victim-Centered Perspective*, 145 U. PA. L. REV. 299, 309–10 (1996); Steven Shavell, *Individual Precautions to Prevent Theft: Private Versus Socially Optimal Behavior*, 11 INT'L REV. L. & ECON. 123, 131–32 (1991). By contrast, if the defensive measures are unobservable, such as a Lojack (a tracking device hidden in a car in order to discover its location after a theft), then they cannot cause displacement and they are more likely to be efficient. See Ian Ayres & Steven D. Levitt, *Measuring Positive Externalities from Unobservable Victim Precaution: An Empirical Analysis of Lojack*, 113 Q.J. ECON. 43, 44 (1998).

32. Utset, *Hyperbolic Criminals*, *supra* note 21, at 660.

II. A FRESH TAKE ON THE IMPLICATIONS OF PRESENT BIAS FOR CRIMINAL LAW

In this Part, I consider anew the relationship between present bias and criminal law. I first address the effect of present bias on the analysis of general deterrence, drawing somewhat different conclusions than Utset regarding the significance of crime definition and emphasizing the role of arrests. Indeed, present bias points to a particular usefulness of undercover operations and victim defensive force. Second, I consider some implications for individual prevention of crime. The existence of present bias gives an additional rationale for frequently observed conditions of probation and parole, as well as an innovative solution—“self-exclusion”—to the problem of addiction.

A. General Deterrence: The Narrow Significance of Crime Definition and the Heightened Importance of Arrests and Undercover Operations

To see the implications of inconsistent time preferences for deterrence, we must first consider a model of crime with fully rational agents who have time-consistent preferences. Only after we identify the relevance of time to a standard model can we isolate the policy significance of a behavioral model. As explained below, some of the points that Utset makes about time-inconsistent misconduct turn out to be equally true in a standard model.

Gary S. Becker first identified two key variables for general deterrence: the probability of detection and the severity of punishment.³³ An obvious third variable is time.³⁴ Even with time-consistent, standard exponential discounting, the longer the delay between the crime and the punishment, the greater the discounting of the punishment, and therefore, the weaker the deterrent (all else equal). The same is true regarding the timing of crime benefits. Even with time-consistent, standard exponential discounting, the longer the delay between the crime and the benefits the crime produces, the greater the discounting of those benefits, and therefore, the greater the deterrent (all else equal). Thus, the state is more likely to deter a crime if it can accelerate the costs and/or delay the benefits of crime. To be more precise, let us simplify greatly and assume that all costs of the crime, including expected punishment, are incurred at Time c (T_c) and all the benefits are accrued at Time b (T_b). When T_b occurs first, we maximize deterrence by *minimizing* the gap between T_b

33. See Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169, 170 (1968).

34. See, e.g., Daniel S. Nagin & Greg Pogarsky, *Integrating Celerity, Impulsivity, and Extralegal Sanction Threats into a Model of General Deterrence: Theory and Evidence*, 39 CRIMINOLOGY 865, 866 (2001).

and T_c . When T_c occurs first, we maximize deterrence by *maximizing* the gap between T_c and T_b . In general, we want to maximize $(T_b - T_c)$.³⁵

What do time-inconsistent preferences add to this point? First, if all the factors are in the immediate present, then the present bias applies equally to costs and benefits and therefore has no net effect.³⁶ Second, if the crime is one where the costs and benefits are both deferred, it is possible there is some effect,³⁷ but there is no “short-term multiplier.” When all the factors are in the future, though separated in time, if the future costs deter the crime at one time period, it will do so at any other time period; the individual will never decide to begin committing the offense and will be deterred, notwithstanding the individual’s present bias. Thus, the present bias has its main effect in the remaining cases: (1) when the benefits of crime are in the immediate present and the costs are deferred, and (2) when the costs of crime are in the immediate present and the benefits are deferred. The former case produces what Utset calls time-inconsistent misconduct, while the latter produces time-inconsistent compliance where the individual procrastinates misconduct.

Thus, to create additional deterrence by exploiting the present bias, as distinguished from exploiting ordinary discounting, the options are limited to changes that occur in the “present.” *One must either make deferred costs immediate or make immediate benefits deferred.* For present bias (as distinguished from high discount rates), it will not help merely to accelerate the timing of costs or delay the timing of benefits if the costs nonetheless remain in the future, still to be incurred after the benefits.

Now consider how the state might manipulate the timing of expected costs and benefits to exploit the present bias so as to deter crime. The timing of punishment may seem more relevant to policy than the timing of benefits because the state obviously has more control over when *it* punishes than when the criminal receives the private benefits of crime. But Utset makes the point that *crime definition* can affect the timing of criminal benefits—his example is conspiracy.³⁸ Suppose there is some crime (e.g., bank robbery) that requires joint action because no

35. The expression assumes that we express time in a numerical continuum where later times have larger numbers.

36. Nonsanction costs of crime are sometimes immediate, such as the risk of a victim retaliating or the danger of falling from a second-story window a burglar aims to enter. But part of the sanction costs is always delayed—e.g., the last day of incarceration for the sentence one gets. Thus, the full costs of a crime are never all immediate. The purpose of the counterfactual statement in the text is merely conceptual clarification.

37. With hyperbolic discounting, the special allure of the present heightens the difference between “now” and “later,” but could thereby diminish the difference between “later” and “much later.” If so, then present bias could actually decrease the degree to which “much later” factors are discounted compared to “later” factors. If the benefits of a crime are incurred “later,” but the expected punishment is incurred “much later,” present bias might increase deterrence.

38. Utset, *Hyperbolic Criminals*, *supra* note 21, at 668–71.

single person can succeed. The fact that it is a crime merely to agree to commit a crime³⁹ (e.g., enter a bank robbery conspiracy)

increases the immediate costs of organizing conspiracies, because potential members may want to limit their interactions with each other until they are sure that they would benefit from joining. This, in turn, increases search and coordination costs and, concomitantly, the potential that one or more co-conspirators may procrastinate following through.⁴⁰

Note that Utset's argument is independent of the severity of sanctions. He is not making the obvious point that conspiracy liability may increase deterrence by increasing the total sanction for the conduct. Utset is instead arguing that conspiracy liability increases the conspirator's private search and coordination costs.

To evaluate the argument, consider first the effect of search costs on those with time *consistent* preferences. Increasing costs may increase deterrence if it delays how long the crime takes to complete. Suppose I start trying to find a bank robbery partner at T0, and without conspiracy law, suppose that I find a partner at T1 and commit the robbery at T2. With conspiracy law, searching is more difficult and I find a partner only at T2 and commit the crime at T3. At T0, I rationally discount the benefits at T3 more than the benefits at T2. Thus, someone with time-consistent preferences is more likely to be deterred from committing bank robbery by the fact that the law prohibits the agreement to commit a bank robbery.

Utset's point, however, is different. It is simply that the higher search costs are incurred immediately and therefore magnified by the present bias (more precisely, the future gains are more heavily discounted when compared to immediate costs). More generally, some crimes naturally have the structure such that some costs are incurred before any benefits. The criminal must invest in the crime. When that is true, anything the government does to increase the immediate costs will exert a magnified deterrent effect due to present bias. In such cases, procrastination will work against crime. And one thing that increases immediate costs is the fact that sanctions for criminal preparation will cause criminals to incur extra costs in making their preparation to avoid detection.

There is, however, a gap in this argument. It is not clear why the threat of delayed sanctions can induce someone with present bias to incur immediate extra costs in preparing to offend. Utset contemplates that offenders seeking crime partners can take high or low precautions.

39. Some jurisdictions require not just an agreement but an "overt act" in furtherance of the agreement. See, e.g., *Commonwealth v. Schoff*, 911 A.2d 147, 160 (Pa. Super. Ct. 2006). But where it is required, the overt act requirement is easily met, as it can be an act that would by itself be innocuous. See, e.g., *United States v. Eucker*, 532 F.2d 249, 254 (2d Cir. 1976) (holding that even silence can be an overt act).

40. Utset, *Hyperbolic Criminals*, *supra* note 21, at 670–71.

High precautions are more costly but are also more likely to screen out incompetent or untrustworthy partners who will raise the probability of detection. Without conspiracy liability, one can always back out of the conspiracy (and avoid criminal sanctions) if one later determines that one's partners are not suitable. So one chooses low and cheap precautions before starting. With the crime of conspiracy, however, one incurs liability immediately and one therefore wishes to assess the suitability of potential partners up front. So one chooses high and costly precautions. Thus, conspiracy law appears to increase the potential offender's immediate costs.

Yet the increased costs are illusory because the formal punishment for conspiracy is delayed rather than immediate. Why would the offender who has a present bias incur precautionary costs early on in order to avoid nondeterring criminal sanctions down the road? If the offender is not deterred from committing a crime by the deferred substantive sanctions, then it is not clear why conspiracy sanctions—also deferred—will do any better at inducing the offender to take immediately costly extra precautions. For example, suppose there is no conspiracy liability and a potential offender with present bias—Dennis—prefers to take low precautions to acquire crime partners at T0 to commit a substantive offense at T1, despite the risk of sanctions that might be imposed at T2. Now the state imposes conspiracy liability. Utset's point is that Dennis will have to incur new costs at T0 in the formation of the conspiracy—taking greater care in the selection of crime partners—to avoid the sanctions at T2.⁴¹ But why bother? If Dennis was originally willing to offend with low levels of precaution, he will still be willing to offend with low level of precautions, despite conspiracy liability, as long as the conspiracy punishment is as delayed as the punishment for the substantive offense (to T2).⁴² If Dennis's present bias is sufficiently strong to prevent the sanctions at T2 from deterring him at T0, then they will also be insufficient to induce him to incur precautionary costs at T0. So conspiracy liability does not raise his immediate costs.

Imagine, however, a different interpretation of Utset's argument: not that conspiracy liability makes the offender *choose* to incur immediate new costs in selecting a crime partner, but that it *forces* the offender to incur higher costs by shrinking his or her opportunity set. For example, suppose that conspiracy liability deters *some* potential offenders with time-consistent preferences. The effect is to leave present-biased offenders with fewer potential partners. On this reading of Utset, conspir-

41. *Id.*

42. As noted above, the analysis assumes that the total sanctions are the same (i.e., that the penalty for the substantive offense before the state creates conspiracy liability is equal to the penalty for the substantive offense plus conspiracy once it is created). Utset is not claiming that conspiracy liability works on present-biased individuals merely because it raises the total sanction. Though conspiracy does have that effect, one cannot uniquely justify conspiracy liability on this basis because the state could produce the same deterrence by instead raising sanctions for the substantive offense.

acy liability deters impulsive offenders by depriving them of nonimpulsive partners. Thus, the search costs they must incur rise and their present bias magnifies the size of those costs, causing them to procrastinate their offense. Of course, this theory seems highly contingent. With enough impulsive offenders, they will always be able to find other offenders willing to enter a conspiracy.

Consider therefore an alternate and more general explanation for the importance of crime definition to impulsive offenders. Moving the trigger for liability back in the course of criminal conduct does not itself address present bias because the actual criminal sentence will never be immediate. *But what is immediate is the threat of arrest.* The arrest imposes significant costs—a loss of liberty, dignity, and possibly property—which may be immediately followed by detention pending trial.⁴³ Arrests vary in how costly they are for the person arrested, but consider the Supreme Court’s description of a “normal” constitutional arrest:

Atwater’s arrest was surely “humiliating,” . . . but it was no more “harmful to . . . privacy or . . . physical interests” than the normal custodial arrest. She was handcuffed, placed in a squad car, and taken to the local police station, where officers asked her to remove her shoes, jewelry, and glasses, and to empty her pockets. They then took her photograph and placed her in a cell, alone, for about an hour, after which she was taken before a magistrate, and released on . . . bond. The arrest and booking were inconvenient and embarrassing to Atwater, but not so extraordinary as to violate the Fourth Amendment.⁴⁴

Malcolm Feeley famously wrote, *The Process Is the Punishment*.⁴⁵ That title is understandably a warning that we thoughtlessly impose a lot of “punishment” on people before we determine that they deserve any. But it also has this implication: present bias always works against the deterrent effect of the state’s formal punishment, which is deferred, but does not work against the deterrent effects of arrest, once the threat of arrest becomes immediate. Instead, when threat of arrest is immediate and the crime’s benefit is deferred, present bias causes heavier discount-

43. That the costs are probabilistic should not matter—there is no reason that the person with present bias will ignore immediate costs just because they are uncertain.

44. *Atwater v. City of Lago Vista*, 532 U.S. 318, 354–55 (2001) (citation omitted); *see also* *United States v. Watson*, 423 U.S. 411, 428 (1976) (Powell, J., concurring) (“An arrest . . . is a serious personal intrusion regardless of whether the person seized is guilty or innocent. Although an arrestee cannot be held for a significant period without some neutral determination that there are grounds to do so, . . . no decision that he should go free can come quickly enough to erase the invasion of his privacy that already will have occurred.” (citations omitted)); *Terry v. Ohio*, 392 U.S. 1, 16–17 (1968) (speaking of a frisk that is *less* intrusive than an arrest: “[I]t is simply fantastic to urge that such a procedure performed in public by a policeman while the citizen stands helpless, perhaps facing a wall with his hands raised, is a ‘petty indignity.’ It is a serious intrusion upon the sanctity of the person, which may inflict great indignity and arouse strong resentment, and it is not to be undertaken lightly.” (footnote omitted)).

45. MALCOLM M. FEELEY, *THE PROCESS IS THE PUNISHMENT: HANDLING CASES IN A LOWER CRIMINAL COURT* (1979).

ing of the future criminal benefits, which magnifies the deterrent threat of arrest. Thus, moving back the line of criminal liability potentially makes some of the expected costs immediate and exploits not just the ordinary discounting of future costs, but the special time-inconsistent discounting of future costs weighed against immediate benefits.

Of course, one assumption here is that the police actually make some arrests for the early crime. This is not necessarily the case. When the police discover evidence of a conspiracy's formation, they might routinely wait for the members of the conspiracy to commit substantive crimes—like completing the crime that is the object of the conspiracy—before making any arrests. Police delay increases the number of crimes committed by the members of the conspiracy and thus the ultimate level of punishment. One policy implication of present bias, however, is that police should sometimes make immediate arrests so that potential conspirators will contemplate immediate costs to their entering a conspiracy. Even though immediate arrests may decrease the ultimate severity of the sanction imposed, they offset this effect by creating an expected cost at or well before the potential offender expects to receive any benefit from the crime.⁴⁶

A second implication is to favor defining the crime of conspiracy so as not to include an “overt act” beyond the criminal agreement, thus pushing back the first moment of possible arrest to the earliest time. There are, of course, important political concerns about defining serious crime at such an early stage because it extends the power of government to punish back to a point when the actor has yet to *do* something significant.⁴⁷ These political concerns may, on balance, still justify the need for an overt act, but my point is that present bias offers one new factor favoring the definition of crime at an earlier point.

The existence of present bias also reveals a special and neglected value of undercover operations.⁴⁸ Note first that Utset discusses undercover operations to raise a special concern with them—i.e., that police will lure people into crime only by exploiting their present biases.⁴⁹ No doubt Utset is right that police can create the appearance of immediate benefits to crime (or a delay in the expected costs), which can induce a person who is present biased to commit an offense (1) that individuals

46. The optimal police strategy also depends on the risks posed by leaving the conspirators at large for a longer period of time. Although the police may keep known conspirators under surveillance, there are always risks to leaving them free, i.e., that they will commit new crimes that cause substantial harm and/or that they will detect the surveillance and flee the jurisdiction. Thus, even if the deterrent effect of delaying arrests and increasing punishment severity outweighs the deterrent effect of immediate arrests magnified by present bias, the latter point may, in combination with the risks of delay, make immediate arrests the efficient police strategy.

47. See, e.g., HERBERT L. PACKER, *THE LIMITS OF THE CRIMINAL SANCTION* 270–77 (1968).

48. See generally Richard H. McAdams, *The Political Economy of Entrapment*, 96 J. CRIM. L. & CRIMINOLOGY 107 (2005) (discussing the advantages of undercover operations and the need for an entrapment defense to curb abuses).

49. See Utset, *Hyperbolic Criminals*, *supra* note 21, at 671–72.

with consistent time preferences would avoid committing, and (2) that the present-biased person would usually avoid committing because that individual uses some self-commitment mechanism the undercover police officer evades. But note that the police, in manipulating time preferences and avoiding self-commitment mechanisms, might merely be mimicking the behavior of private citizens who often lure other private citizens into crime by exploiting their present bias and evading their self-control mechanisms. Yet it is not a defense to crime that one's co-conspirator exploited another's present bias by appealing to the immediate benefits of crime. Thus, it is not obvious why it should be a defense if the police do the same. As in all subjects related to the entrapment defense, the issue is complex.⁵⁰

There is one other factor to consider. Even if present bias creates special concerns about police manipulation, it also reveals a new deterrent advantage of undercover operations. The well-understood benefit of such tactics is that they increase the probability of detection. The novel and neglected point is that undercover operations often move the point of arrest from a time *after* which the offender incurs benefits from the crime to a time *during which* or *before* the offender expects to incur the benefits. Without sting operations and in situations where contemporaneous surveillance is impossible, the offender runs only the risk that police investigation will *eventually* expose the offender to criminal punishment. The perpetrator gains at T1 from committing the crime at T1, but still risks arrest at T2. With sting operations, however, the offender runs the risk that the people with whom the offender is illegally transacting *are* the police and will arrest him or her the moment the crime is complete—after receipt of the money, but before the offender can spend it (or after receipt of the drugs or guns, but before they can be used). The perpetrator faces immediate losses as well as gains from committing a crime at T1.

Advancing the threat of arrest to an earlier point in time enhances the deterrent threat for anyone (because the costs of arrest are subject to less discounting), however, moving up the threat of arrest to the same moment at which the criminal benefits are enjoyed has a particular effect on those with present bias. Facing an immediate gain from crime, a present-biased person may be undeterred by a police investigation posing a high probability of eventual arrest, but would be deterred by the low probability of a sting operation threatening immediate arrest.

We can now extend this point about arrests to explain the argument that Ulen and I,⁵¹ and Cooter,⁵² made about the *ex ante* nature of regulatory crimes. Consider the problem of negligently caused physical injury and death. A manufacturer or distributor of food or drugs needs to take

50. See McAdams, *supra* note 48, at 116.

51. See McAdams & Ulen, *supra* note 9.

52. See Cooter, *supra* note 14, at 154.

various precautions, such as those to ensure sanitary conditions and the proper labeling of the product. Suppose that the state decides that the tort system is not fully adequate to deter negligence in this context and therefore adds criminal sanctions. There are two approaches. One is to wait until the harm occurs and then impose a penalty on those who negligently caused the harm. The second is to identify acts that create the risk of physical harm and impose liability on them. The latter might include making it a crime to hold food in warehouses infested with vermin or to transport drugs with inaccurate expiration labels, whether or not anyone is harmed as a result. These regulations are, respectively, *ex post* and *ex ante*.

Ex ante regulation obviously has some deterrence advantages for people with time-consistent preferences—moving up the period of time when one incurs costs means that those costs will be less heavily discounted. But the *ex ante* regulation exploits present bias only if the criminal act risks costs contemporaneous with benefits. If a manager gains immediately from not spending money on controlling vermin in the warehouse or from allowing labeling inaccuracies, then the law could prevent the manager from overvaluing those benefits relative to the costs by making the costs equally immediate. What is perhaps surprising is how limited this possibility is. Again, mere formal liability does not impose immediate costs; only the immediate threat of arrest does. But quite likely, there is no threat of immediate arrest because the police are not immediately present at the scene of a regulatory offense. Instead, the police must investigate, and the prosecutor typically seeks a grand jury indictment prior to arrest. Undercover operations or surreptitious surveillance could create a threat of immediate arrest, but my observation is that such tactics are rare or nonexistent for regulatory offenses (other than for selling alcohol to minors). The implication is that police might generate some significant deterrent gains by occasionally running undercover operations or using confidential informants to target regulatory offenses, thereby creating the threat of an arrest immediately after the offense occurs.

Finally, let us reconsider private defensive measures against crime—such as safes, burglar alarms, security guards, and guard dogs. I noted Utset's analysis above, explaining how present bias can increase the efficiency of private precautions against crime.⁵³ If some individuals offend only because they encounter a criminal opportunity for immediate gain, then defensive measures that remove that opportunity may deter rather than displace crime. I agree with this observation, but I want to also note the divergent effects of different types of defensive measures. Some defensive measures merely increase the probability the offender will eventually be apprehended and punished—such as security cameras or dye

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

packets the bank places in stolen money. These measures increase the probability of formal sanctions, but those sanctions remain deferred. By contrast, some defensive measures create a risk of harm to the offender at the same time the offender hopes to experience criminal gains—security guards might make private arrests; guard dogs or barbed wire might injure the offender. For anyone, but especially for potential offenders with present biases, defensive measures that impose costs prior to or contemporaneous with the benefits of crime, are the most likely to deter crime.⁵⁴

An important example is the risk that the victim will use defensive force. The law presumptively permits an individual to use otherwise unlawful force to defend against a crime, including, in some cases, deadly force.⁵⁵ The defensive resistance the robber contemplates includes being punched or shot, at or before the moment when the robber expects to gain the victim's money. Of course, defensive force also affects rational offenders with entirely consistent time preferences because it both raises the expected costs of crime and decreases the expected benefits (given that defensive force may succeed in stopping the robbery). The point is simply that, for individuals with present bias, these effects are stronger because they are immediate. Moments away from the robbery, the robber may hyperbolically discount the deferred sanctions, but not the immediate risk of defensive force.⁵⁶

B. Individual Prevention: Probation and Parole Conditions, Addiction, and Self-Exclusion

1. Conditions for Probation and Parole

Legal scholars have not examined perhaps the most obvious way the government attempts to correct willpower problems to prevent crime: by the conditions judges place on probation and parole. For instance, judges sometimes sentence offenders to probation instead of incarceration, and the prison sentence hangs “suspended” over the offender, ready to be imposed if the offender is caught committing some other crime (as well as sanctions for the new offense). Those who are sentenced to prison may be released early on parole, with the same threat of being returned to prison to complete their sentence if they commit another crime (again, in addition to sanctions for the new offense). In these situations,

54. I make no claim about overall efficiency.

55. See, e.g., WAYNE R. LAFAVE, *CRIMINAL LAW* 539–50 (4th ed. 2003) (§ 10.4 on “self-defense”).

56. Besides supporting the doctrine of self-defense, a policy implication might be to support right-to-carry laws on the theory that arming citizens will deter crime, as famously claimed in JOHN R. LOTT, JR., *MORE GUNS, LESS CRIME: UNDERSTANDING CRIME AND GUN-CONTROL LAWS* 94–96 (1998). But there is substantial evidence against this hypothesis. See, e.g., Ian Ayres & John J. Donohue III, *Shooting Down the “More Guns, Less Crime” Hypothesis*, 55 *STAN. L. REV.* 1193 (2003); Mark Duggan, *More Guns, More Crime*, 109 *J. POL. ECON.* 1086 (2001).

judges are authorized to place additional conditions on probation or parole other than the requirement of not committing new crimes.⁵⁷ To some extent, the same is true of bail—the judge can release an individual pending trial but impose conditions on release.⁵⁸

Common conditions include that one stays in school or maintains employment, avoids the vicinity of the victim, does not associate with persons with a criminal record, does not possess a firearm (even one that would otherwise be lawful to possess), and does not use alcohol or enter a drinking establishment.⁵⁹ Special conditions are provided for those who

57. Federal law, for example, authorizes courts to set, as a condition of probation, the requirement that the probationer:

- (4) work conscientiously at suitable employment or pursue conscientiously a course of study or vocational training that will equip him for suitable employment;
- (5) refrain, in the case of an individual, from engaging in a specified occupation, business, or profession bearing a reasonably direct relationship to the conduct constituting the offense, or engage in such a specified occupation, business, or profession only to a stated degree or under stated circumstances;
- (6) refrain from frequenting specified kinds of places or from associating unnecessarily with specified persons;
- (7) refrain from excessive use of alcohol . . . ;
- (8) refrain from possessing a firearm, destructive device, or other dangerous weapon;
- (9) undergo available medical, psychiatric, or psychological treatment, including treatment for drug or alcohol dependency, as specified by the court, and remain in a specified institution if required for that purpose; . . . [or]
- (13) reside in a specified place or area, or refrain from residing in a specified place or area

18 U.S.C. § 3563(b) (2006). The law also authorizes federal courts to set conditions other than those specified, and the courts have used this discretion. *See* *United States v. A-Abras Inc.*, 185 F.3d 26, 31 (2d Cir. 1999) (stating that “the conditions of supervised release imposed by trial courts have run the gamut” and listing examples); *see also* *The Legality of Innovative Alternative Sanctions for Nonviolent Crimes*, 111 HARV. L. REV. 1944, 1949 (1998) (“[A] growing number of judges across the country have been imposing innovative conditions on nonviolent offenders.”).

58. In the federal system, the Bail Reform Act of 1984 authorizes the trial judge to impose conditions on release, in addition to noncommission of additional crimes, in order to ensure appearance at trial and protect “the safety of any other person [and] the community.” 18 U.S.C. § 3142(c) (2006). Such conditions include that the person . . .

- (ii) maintain employment, or, if unemployed, actively seek employment;
- (iii) maintain or commence an educational program;
- (iv) abide by specified restrictions on personal associations, place of abode, or travel;
- (v) avoid all contact with an alleged victim of the crime and with a potential witness who may testify concerning the offense; . . .
- (vii) comply with a specified curfew;
- (viii) refrain from possessing a firearm, destructive device, or other dangerous weapon;
- (ix) refrain from excessive use of alcohol; . . .
- (x) undergo available medical, psychological, or psychiatric treatment, including treatment for drug or alcohol dependency

§ 3142(c)(1)(B).

59. *See, e.g., Standard Conditions of Parole*, W. VA. DIV. CORR., <http://www.wvdoc.com/wvdoc/ParoleServicesResources/StandardConditionsofParole/tabid/143/Default.aspx> (last visited July 18, 2011).

commit specific offenses or have behavioral problems. Those who have embezzled may be forbidden from taking jobs that require handling money or credit cards.⁶⁰ Those who are addicted to drugs or alcohol may be required to attend Alcoholics or Narcotics Anonymous meetings or to enroll in some other counseling or treatment program. Those who commit crimes at night may be required to comply with a curfew.⁶¹ Others may be required to stay in “home detention.”

In some cases, probationers or parolees challenge conditions that explicitly limit their exercise of constitutional rights. Because courts see sufficient value in these conditions, the challenges usually fail. Courts have upheld prohibitions on access to the Internet for those convicted of sex offenses facilitated by the Internet,⁶² participation in lawful Ku Klux Klan activities or mere presence in a Hispanic neighborhood for one convicted of inciting race riots,⁶³ and participation in lawful abortion protests for those convicted of unlawfully protesting by harassment and intimidation.⁶⁴ In the last case, the court upheld the condition “[i]n order to help insure [the convict] does not repeat her criminal conduct” because “her deeply held convictions regarding abortion” suggest “that if she were permitted to protest at abortion clinics, she might not be able to restrict her activities within lawful parameters.”⁶⁵

One way to understand many of these conditions is that they try to prevent a situation where the offender has an *immediate* option of reoffending. If an offender has embezzled from his or her employer, being employed in another job with access to cash or credit cards offers the immediate option of embezzling. If an offender associates with persons with a criminal record, the offender may face an immediate opportunity to enter a criminal conspiracy. If an offender assaults an individual the offender hates, returning to the victim’s presence may offer the immediate temptation of assaulting the victim again. If an offender strongly opposes abortion, then participation in a protest at an abortion clinic may offer him or her the immediate opportunity for damaging clinic property or threatening individuals seeking abortions.

In these cases, the condition of probation or parole removes an immediate temptation to reoffend. The question is why the threat of criminal sanctions would work to deter the individual from violating these conditions if it would not also work directly to deter the subsequent crime. If the threat of revocation deters embezzlement, then why forbid the offender from taking a job handling cash or credit? If the threat of

60. See, e.g., *Conditions of Probation*, CLACKAMAS CNTY., OR., <http://www.co.clackamas.or.us/corrections/info.htm> (last visited July 18, 2011).

61. See *United States v. Asalati*, 615 F.3d 1001, 1004, 1008–09 (8th Cir. 2010).

62. See *United States v. Alvarez*, 478 F.3d 864, 865–68 (8th Cir. 2007); *United States v. Locke*, 482 F.3d 764, 768–69 (5th Cir. 2007).

63. See *Land v. State*, 426 S.E.2d 370, 374 (Ga. 1993).

64. See *United States v. Turner*, 44 F.3d 900, 903 (10th Cir. 1995).

65. *Id.*

revocation of parole or probation is a sufficient threat to stop the offender from assaulting a previous victim (or someone of the same race), then why is it necessary to bar the offender from being in the presence of the victim (or others of the victim's race)? On the other hand, if the threat of revocation is *not* sufficient to deter the subsequent assault or embezzlement, then why would it be sufficient to deter a violation of the condition of probation or parole?

One answer is that the individuals may have time-inconsistent preferences, which cause them to give in to immediate temptation to commit crime but not to give in to more distant temptations. For example, assume an offender motivated to reassault a prior victim decides at T0 whether to be, or avoid being, in the victim's vicinity at T1. If the offender is in the victim's vicinity at T1, the offender then decides at T1 whether to reassault the victim, knowing that punishment will result with some probability at T2. Suppose initially that there is no condition of probation or parole and assume that, at T0, when both the costs and benefits of the crime are in the future, the offender is deterred and decides not to offend.

Having decided to refrain from another assault, but without a condition, will the offender avoid the victim? According to the present-bias literature, the answer depends on whether the offender is *naïve* or *sophisticated* about his or her present bias.⁶⁶ A sophisticated individual with present bias anticipates its effects, but a naïve individual does not. To illustrate, assume that Delores is present biased and sophisticated. She knows at T0 that if she has the immediate opportunity to offend at T1, she will take it. Because at T0 she also knows that she does not want to offend at T1, given the expected costs at T2, the present-bias literature predicts that Delores will seek some *self-commitment device* to deny herself the opportunity to act contrary to her T0 preferences.⁶⁷ For a sophisticated present-biased offender like Delores, who faces the temptation of reassaulting a prior victim, self-commitment might mean keeping a distance from the victim, thus preserving a time span between the offender's situation and the opportunity for another assault. Delores would therefore not oppose a probation condition that she avoid the victim's location. The condition might not be necessary because sophisticated offenders will try to avoid the victim even without a condition. That said,

66. See, e.g., Ted O'Donoghue & Matthew Rabin, *Self-Awareness and Self-Control*, in TIME AND DECISION: ECONOMIC AND PSYCHOLOGICAL PERSPECTIVES ON INTERTEMPORAL CHOICE 217, 217–21 (George Loewenstein et al. eds., 2003).

67. An example of self-commitment is the alcoholic who takes the drug disulfiram (with the brand name "antabuse"), which causes very unpleasant effects when someone taking the drug consumes even a small amount of alcohol. See Nat'l Ctr. for Biotechnology Info., *Disulfiram*, PUBMED HEALTH (Sept. 1, 2008), <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0000726> (indicating that the drug may have this effect for up to two weeks after the patient stops taking it). Thus, the drug forces the issue of drinking into the future: one can quit the drug today to drink two weeks from today, but without the possibility of drinking immediately, the alcoholic's present bias does not operate. I return to the subject of addiction below.

such sophisticated offenders would prefer the condition if it makes it even slightly less likely that they will commit a crime which, at T₀, they do not want to commit. In this case, the probation condition works as a self-commitment device.

By contrast, let us suppose that Dennis is a naïve present-biased offender. Being naïve in this context means that Dennis is either unaware of his present bias or is aware of it, but erroneously thinks he can overcome the bias “next time.” If Dennis is deterred at T₀ by the expected punishment at T₂, he would erroneously predict that he will also be deterred at T₁ when faced with an immediate opportunity to gain the benefits from offending. Being naïve, Dennis will see no benefit from keeping temptation at bay—he has no reason to avoid the presence of a previous victim (or a job where he can embezzle cash or an abortion protest where he can damage clinic property) because Dennis believes the costs of offending will deter him even when he encounters an immediate opportunity. If Dennis feels unsusceptible to future opportunities to offend, then he will not expect any punishment to result from his being placed in a situation where he can immediately offend. In the assault scenario, the problem is that Dennis might benefit from being in the victim’s presence even without assaulting him or her (as by making the victim anxious or visiting their shared children). So Dennis travels to the victim’s location for a purpose other than assault but then is surprised when this results in his giving into temptation and committing a new assault. The naïve offender opposes the condition of probation, feeling that it is unnecessary and costly.

Does the condition of probation or parole change the calculus and deter the naïve present-biased offender from traveling to the location of the victim? Plausibly, yes—as long as obeying the condition keeps the opportunity to commit the offense sufficiently in the future, temporally removed from the offender’s situation at any given moment. Thus, assume that, at T₀, Dennis cannot actually commit a new assault because the victim is not present and he cannot arrive at the victim’s location until T₁.⁶⁸ When that is true, at T₀, the benefits (as well as costs) of the offense are in the future and are therefore not subject to the present bias. If so, and if Dennis is deterred from deciding at T₀ to offend at T₁ because of the sanctions at T₂, then the condition of probation or parole will also deter him at T₀ from deciding to travel to the victim’s location at T₁ because of the sanctions at T₂. The condition renders Dennis’s naivety irrelevant—it no longer matters if the offender erroneously predicts that he will not commit another assault at T₁ because the condition

68. To illustrate, suppose that Dennis lives and works several miles from the victim and has no incentive to visit the victim’s location other than to engage the victim in a face-to-face interaction (for criminal or noncriminal reasons). By contrast, if Dennis is an immediate neighbor of the victim, the condition of staying out of the victim’s yard does not create any real temporal gap between the decision to offend and the offense.

punishes the offender's presence in the victim's location regardless of whether he commits a new assault. By deterring the offender from taking a necessary step towards the commission of a new assault, the condition deters the assault. Dennis will never put himself in a position to be tempted to commit an impulsive crime.⁶⁹

The condition potentially has a second effect: it can move up the timing of the punishment because the offender can now be incarcerated merely for going to the victim's location at T1. Thus, there are expected costs now at T1, which means that costs are less discounted than before. This effect could explain the advantage of imposing a condition even for someone with time-consistent preferences, which may render the present-biased explanation unnecessary. But note how contingent this explanation is: it depends on there being a realistic probability that the police will show up to arrest the offender at T1, right as the offender appears on the scene with the victim. If, as is more realistic, the police wait until T2 to detect a violation at T1, then the condition's potential second effect does not occur. Thus, present bias is a good explanation for many conditions of probation or parole.

Finally, we can offer a similar account of these conditions with Cooter's "akrasia" lapse model. Recall that Cooter imagines that a person's discount rate fluctuates from moment to moment (but at each moment is consistent across time).⁷⁰ Thus, a person might ordinarily be deterred at T0 from later offending at T1 because of sanctions at T2. Because the individual has consistent time preferences, expected sanctions at T2 *also* deter the individual from offending at T1. Sometimes, however, the individual draws an unusually high discount rate. If that occurs at T0, the individual might, for example, go to the victim's presence with the intent of assaulting him or her at T1. Of course, in the interval of time it takes to travel to the victim's location, the individual might draw a more average time preference and decide at T1 not to offend. Another possibility is that the offender draws an average discount rate at T0 (under which it is not rational to offend at T1), yet if the offender is in the victim's presence at T1 (for some other reason), the offender may draw a high discount rate and lapse into crime.

Again, an offender's behavior choice depends on whether the individual is naïve or sophisticated. A sophisticated offender does not know if going to the victim's location *will* lead to an offense. The sophisticated offender knows there is a *risk* of offending, where the probability is determined by the probability that the offender will draw a high enough discount rate to diminish the present value of expected sanctions to a

69. The analysis is simpler for one technologically inspired condition—the wearing of an electronic ankle during home arrest. The technology radically decreases the time required for police to show up and make an arrest if the offender leaves home (or in other cases goes too near a restricted location). If the police arrive soon enough, the costs of violating the condition are effectively immediate.

70. See *supra* notes 14–15 and accompanying text.

nondeterrent level. A naïve offender, in contrast, can be someone who merely underestimates the probability of drawing such a discount rate.

In Cooter's model, the condition of probation or parole also works primarily to explain deterrence for naïve offenders. A sophisticated offender will reoffend only if the offender draws a high discount rate in two consecutive time periods—for example, in T0, when deciding to travel to the victim's location, and T1, when deciding whether to assault the victim. Yet given these two draws, the condition will have no deterrent effect; the offender's discount rates are too high for the T2 sanctions to deter at either stage. The naïve offender, on the other hand, might reoffend only because the offender draws a high discount rate at T1 while in the presence of the victim. The naïve offender might decide at T0 to travel to the victim's location (or not to avoid it) because of an underestimation of the likelihood of drawing the kind of discount rate that would cause the individual to offend. With the imposition of the condition, however, when the individual draws a low or average discount rate at T0, the individual will avoid the victim's location at T1.

In sum, the concept of present bias offers a useful understanding of many conditions that courts routinely impose on probation, parole, and bail. A closer look might support my conjecture that courts use such conditions most commonly when the facts of the crime suggest that the offender is subject to present bias.

2. *Addiction*

Various theorists have used present bias to provide an intuitive theory of addiction,⁷¹ in contrast to the Becker-Murphy theory of “rational” addiction.⁷² Addiction plausibly involves time inconsistency: a person decides at T0 that the benefit of alcohol, tobacco, or heroin consumption at T1 is not worth the cost at T2. At T1, however, the present bias causes the individual to discount more heavily the deferred costs, as compared to the immediate benefits, and the individual succumbs to temptation. For this reason an individual at T0 might decide to engage in some form of self-commitment that denies himself or herself the opportunity to consume alcohol, tobacco, or heroin at T1.⁷³ Such individuals

71. See George Ainslie, *A Research-Based Theory of Addictive Motivation*, 19 L. & PHIL. 77, 81–85 (2000); Chrisoula Andreou, *Making a Clean Break: Addiction and Ulysses Contracts*, 22 BIOETHICS 25, 28–31 (2008); Warren K. Bickel & Lisa A. Marsch, *Conceptualizing Addiction, Toward a Behavioral Economic Understanding of Drug Dependence: Delay Discounting Processes*, 96 ADDICTION 73, 76–81 (2001); Michael Louis Corrado, *Addiction and the Theory of Action*, 25 QUINNIPIAC L. REV. 117, 119–20 (2006); Jonathan Gruber & Botond Köszegi, *Is Addiction “Rational”? Theory and Evidence*, 116 Q.J. ECON. 1261, 1277 (2001); Faruk Gul & Wolfgang Pesendorfer, *Harmful Addiction*, 74 REV. ECON. STUD. 147, 150 (2007); Fernando S. Machado & Rajiv K. Sinha, *Smoking Cessation: A Model of Planned vs. Actual Behavior for Time-Inconsistent Consumers*, 26 MARKETING SCI. 834, 847–49 (2007).

72. See Gary S. Becker & Kevin M. Murphy, *A Theory of Rational Addiction*, 96 J. POL. ECON. 675 (1988).

73. See *supra* text accompanying note 67.

seek what is variously called a “Ulysses contract”⁷⁴ or “self-exclusion,”⁷⁵ which I discuss below.

Yet addiction is arguably something *more than* this simple inconsistency as we do not tend to use the term addiction to describe every tempting behavior we later regret engaging in. Imagine that Ulysses repeatedly gives in to the temptation to watch a half-hour of bad television instead of reading a good novel. He regrets his decision and seeks ways to commit to novel reading, such as canceling his cable subscription. Nonetheless, it seems odd or hyperbolic to say that Ulysses is literally “addicted” to television. To explain the distinction in these cases, economists Faruk Gul and Wolfgang Pesendorfer introduce another variable.⁷⁶ Gul and Pesendorfer use the term “compulsive” to refer to the simple time inconsistency noted above: “[a]n individual is compulsive if his choice differs from what he would have chosen had commitment been possible.”⁷⁷ What makes behavior *addictive* is that engaging in the compulsive behavior *increases* how compulsive the behavior is. Cocaine use is addictive not merely because a person might at T0 choose against its consumption at T1, yet still consume at T1 (absent a self-commitment mechanism), but because the more one ingests, the *more* one will consume it absent self-commitment. “Hence, a harmful addiction is defined as a widening of the gap between the individual’s choice and what [that individual] would have chosen before experiencing temptation.”⁷⁸

Thus, present bias helps to explain how people acquire and seek to subsequently “break” addictions. One might try to justify criminal prohibitions of addictive behaviors—the use of cocaine and heroin or, in an earlier day, alcohol and gambling—as self-commitment mechanisms, but there are serious objections. First, the prohibitions apply even to those individuals who do not seek to refrain from engaging in these behaviors. Second, the law is not a very reliable commitment device, given that present bias undermines the threat of deferred criminal punishment.

More promising on both counts, however, may be individualized self-imposed mechanisms of commitment. For instance, Ian Ayres explores the possibility of commitment contracts by which individuals put large amounts of money at risk in the event that they fail to lose weight or quit smoking.⁷⁹ Jim Leitzel explores the broad concept of “self-

74. See Andreou, *supra* note 71, at 25 (emphasis omitted).

75. Jim A. Leitzel, Self-Exclusion 2–3 (Apr. 6, 2011) (unpublished manuscript), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1126317.

76. See Gul & Pesendorfer, *supra* note 71, at 147.

77. *Id.* (emphasis omitted).

78. *Id.*

79. See IAN AYRES, CARROTS AND STICKS: UNLOCK THE POWER OF INCENTIVES TO GET THINGS DONE 57–61 (2010); see also Ted O’Donoghue & Matthew Rabin, *Studying Optimal Paternalism, Illustrated by a Model of Sin Taxes*, 93 AM. ECON. REV. 186, 190 (2003); Michael Abramowicz & Ian Ayres, *Compensating Commitments: The Law and Economics of Commitment Bonds That Compensate for the Possibility of Forfeiture* (May 20, 2010) (unpublished manuscript), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1612396.

exclusion,” which is now used in some places as a solution to problem gambling.⁸⁰ Some casinos allow individuals to give their names to the casino, the effect of which is to exclude them from claiming large winnings.⁸¹ The exclusion is reasonably enforceable because winnings over a certain size require, at the time of cashing in one’s chips, that the winner submit identification. If compulsive gamblers know that, despite being optimistic, they cannot win big because the casino can lawfully refuse to pay, the gamblers may be able to resist the temptation to gamble. Of course, self-exclusion works better if it is more fail-safe—Leitzel reports that casinos in some nations check identification at the door, excluding anyone who has signed up to be excluded.⁸² Of course, the individuals who choose these self-commitment mechanisms must be sophisticated about their own present biases, anticipating at T0 that, absent commitment, they will succumb to temptation at T1 and regret it at T2. But individuals who are naïve about their present bias will not choose self-exclusion (except with an incentive, as discussed below).

We can apply what Ayres and Leitzel say about self-commitment to the conditions of probation and parole discussed above. Alcoholics or drug addicts might *prefer* that the judge hold the threat of prison over their head as a means of inducing them to attend Alcoholics or Narcotics Anonymous meetings or other drug treatment. Individuals who know they cannot control themselves when faced with the immediate prospect of stealing cash or punching an old high school rival might also prefer the condition that they abstain from employment offering easy access to cash or steer clear of a rival’s residence. The physical and temporal space maintained between the individual and the cash or enemy is a commitment device. The same is potentially true of the racist told to stay out of Hispanic neighborhoods, the pro-life activist told to avoid abortion clinics, or the sex offender told to stay off the Internet. Of course, the naïve, present-biased offenders do not prefer conditions because they believe they do not need them, so it is desirable that courts do not require consent to impose conditions.

Nonetheless, the possibility that some would consent to these conditions might imply that stronger self-exclusion options could be offered to individuals, by letting them opt into criminal penalties even if they have committed no crime. Instead of waiting until the individual commits a crime and has a no drinking or no gambling requirement imposed as a condition of probation or parole, the state might give the individual who has not committed a crime the option of submitting to such a requirement—no drinking or no gambling—as a condition of avoiding some punishment (e.g., a night in jail). The sophisticated, present-biased per-

80. See Jim Leitzel, *Big Ideas: Self-Denial As Policy*, MILKEN INST. REV., First Quarter 2008, at 76.

81. *Id.* at 78.

82. *Id.*

son would welcome the opportunity for commitment, but of course the naïve present-biased person would not. This is unfortunate because the sophisticated person is precisely the one who might find alternative commitment mechanisms without the government's assistance. One solution would be for the government to pay individuals to submit to such conditions.⁸³ Naïve individuals, who believe they will never be successfully tempted, would be happy to accept payment to subject themselves to conditional punishment. Yet once they have entered the contract, they have brought about the conditions that may produce successful self-commitment.

There are serious ethical concerns with a policy of paying people to take risks they are known to underestimate, especially for criminal sanctions. When the condition fails to deter some individuals, as it inevitably will, the government will punish them to maintain the credibility of its commitments (moreover, the proposal might dilute the ability of criminal punishments to express condemnation for wrongful and culpable acts, if the same punishments were given to people who committed no such acts). But as unseemly as this is, one must compare it to the paternalistic status quo where the state punishes individuals for drug use despite their never having opted into a regime of punishment. Laws even punish individuals who rationally have no reason to avoid the drugs they are using because they seem able to avoid becoming addicted to them. Thus, as much as I hesitate to recommend the policy, it is not obviously worse than the status quo.

III. CONCLUSION

Most of the policy discussion of present bias (or weakness of will or bounded self-control) addresses the regulation of credit and savings. But the inconsistency of time preferences has wider implications, especially for criminal law. Present bias changes the optimal definition of crime, but only through its possible effect on the timing of arrest, which has more effect on deterrence than has been acknowledged. Present bias reveals overlooked benefits from undercover operations and defensive precautions against crime, including the victim's use of defensive force, and it helps to explain otherwise puzzling conditions of probation and parole, addiction, and the self-control mechanisms for dealing with addictive behavior. The criminal law seems to treat some offenders as if they suffered from present bias, though there is room for a more systematic application of these policy insights.

83. Here, I follow O'Donoghue & Rabin, *supra* note 79, who propose paying people to opt into "sin" taxes, as on fatty foods like potato chips. The naïve underestimate their time-inconsistent, future consumption of potato chips and therefore will take the payment. Once they opt into the taxes, they will consume fewer potato chips.

