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The Case for Imperfect Enforcement of Property Rights

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ARTICLE

THE CASE FOR IMPERFECT ENFORCEMENT OF PROPERTY RIGHTS

ABRAHAM BELL[†] & GIDEON PARCHOMOVSKY^{††}

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INTRODUCTION

There is nothing so uncontestable as the incentive of an owner to safeguard her belongings. Yet property law contains various rules and doctrines that force owners to adopt measures to protect their assets. For instance, a number of regulations and administrative procedures require owners of gas stations to use “prepay pumps” to eliminate the

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threat of customers pumping gas and then fleeing before paying.¹ Pre-1976 copyright law provides another example: historically, authors of copyrightable works lost ownership rights if they published the works without affixing proper notice to all copies of the work, and thereby notifying potential users of the copyright claim.² The law of trade

¹ See, e.g., TWIN FALLS, IDAHO, CITY CODE tit. 6, ch. 12, § 6-12-2(A) (2011), available at http://sterlingcodifiers.com/codebook/index.php?book_id=379§ion_id=100400 (“All business establishments with gasoline and/or diesel fuel pumps located thereon must require full payment in advance for any quantity of self-service gasoline or diesel fuel sold at any time”); BOWLING GREEN, KY., CODE OF ORDINANCES ch. XV, § 15-2.01 (2009), available at [http://www.amlegal.com/nxt/gateway.dll/Kentucky/bgky/chapterxvbusinessandgeneralregulations?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:bowlinggreen_ky\\$anc=JD_15-2.01](http://www.amlegal.com/nxt/gateway.dll/Kentucky/bgky/chapterxvbusinessandgeneralregulations?f=templates$fn=default.htm$3.0$vid=amlegal:bowlinggreen_ky$anc=JD_15-2.01) (“All businesses that sell gasoline or diesel fuel shall require payment in advance of sales of fuel prior to activation or authorization of any fuel dispensing unit or fuel pumping device.”); MT. PLEASANT, S.C., CODE OF ORDINANCES tit. XIII, ch. 137, § 137.04 (2004), available at [http://www.amlegal.com/nxt/gateway.dll/South%20Carolina/pleasant/titlexiiigeneraloffenses/chapter137gasolineandordieselfueldriveof?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:mtpleasant_sc\\$anc=JD_137.04](http://www.amlegal.com/nxt/gateway.dll/South%20Carolina/pleasant/titlexiiigeneraloffenses/chapter137gasolineandordieselfueldriveof?f=templates$fn=default.htm$3.0$vid=amlegal:mtpleasant_sc$anc=JD_137.04) (“All business establishments with gasoline and/or diesel fuel pumps located thereon must require full payment in advance for any quantity of gasoline or diesel fuel sold at any time.”); MYRTLE BEACH, S.C., CODE OF ORDINANCES ch. 14, art. IX § 14-152 (2005), available at http://library.municode.com/HTML/10726/level3/COOR_CH14OFMIPR_ARTIXGADIFUDROF.html#COOR_CH14OFMIPR_ARTIXGADIFUDROF_S14-152PAADRE (using similar language); LEWISVILLE, TEX., CODE OF ORDINANCES ch. 7, art. I, § 7.1(b) (2007), available at http://library.municode.com/HTML/19957/level3/PTIICOOR_CH7LIBURE_ARTIINGE.html#PTIICOOR_CH7LIBURE_ARTIINGE_S71PRGADIFUREFUBU (“It shall be an offense for a retail fuel business owner, manager/supervisor, or employee to . . . [a]ctivate any gasoline or diesel fuel pumping device prior to receiving payment in full for the gasoline or diesel fuel.”); Occupational Health and Safety Regulation, B.C. Reg. 296/97, § 4.22.2 (2007) (Can.), available at http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/296_97_25 (follow “Part 4” hyperlink) (“An employer must require that customers pre-pay for fuel sold in gas stations and other retail fueling outlets.”).

² See Copyright Act of 1909, Pub. L. No. 60-349, §§ 9–10, 19, 35 Stat. 1075, 1077-79 (prescribing the process of obtaining registration for a copyright, which included applying a “required” “notice of copyright”); see also *Nat’l Comics Publ’ns, Inc. v. Fawcett Publ’ns, Inc.*, 191 F.2d 594, 600 (2d Cir. 1951) (“Section 10 provides that the first publication of a ‘work’ with the ‘required’ notice secures the copyright; [and] it implies that a failure to affix the notice upon each copy, later published ‘by authority of the copyright proprietor,’ will ‘forfeit’ it; and such is the law.”); *Moger v. WHDH, Inc.*, 194 F. Supp. 605, 606-07 (D. Mass. 1961) (applying the notice requirement to a set of newspaper cartoons). This was also the law prior to the Copyright Act of 1909. See, e.g., *Mifflin v. R.H. White Co.*, 190 U.S. 260, 264 (1903) (“It is incorrect to say that any form of notice is good which calls attention to the person of whom inquiry can be made and information obtained, since the right being purely statutory, the public may justly demand that the person claiming a monopoly of publication shall pursue, in substance, at least, the statutory method of securing it.”); *Thompson v. Hubbard*, 131 U.S. 123, 150 (1889) (summarizing the statutory scheme of the time as prohibiting “an action for the infringement of [an owner’s] copyright, unless he shall give notice thereof. . . failure to give such notice debars him from maintaining an action for the infringement of *his* copyright.”).

secrets supplies a third example: the Economic Espionage Act explicitly requires “reasonable measures to keep . . . information secret” as a condition of enjoying legal protection for the information as a trade secret.³

These and similar state-imposed demands on property owners seem puzzling and counterintuitive. After all, property owners have their own incentives to voluntarily adopt measures to secure their entitlements in their belongings. So why do lawmakers deem it necessary to enact rules to induce behavior that would happen in any event?

In this Article, we argue that one solution to the puzzle lies in an important and underappreciated countereffect emanating from state enforcement of property rights. The accepted lore among property theorists is that state enforcement of private property rights is both desirable and efficient due to economies of scale and scope that can be realized via this centralized enforcement.⁴ Going against the conventional wisdom, we argue in this Article that state enforcement also has a downside: it may give rise to a moral hazard problem that distorts owners’ investment incentives, causing them to take suboptimal precautions to protect their property and externalize those costs onto the state instead. After all, it is easy to think of some cases where owners can protect their property rights more cost-effectively than can the state, and of other cases where a combination of private and state provision of enforcement is optimal. For instance, in many cases, mandatory registration requirements provide a far cheaper and more effective means of protecting many kinds of property rights than any action the state may take alone.

The idea of moral hazard is not generally thought to be central to property law. Rather, the moral hazard problem is most widely recognized in the insurance context. For our purposes, moral hazard is best defined as the extraneous risk taken on by parties as a result of insur-

³ 18 U.S.C. § 1839(3)(A) (2006).

⁴ See, e.g., DOUGLASS C. NORTH, *STRUCTURE AND CHANGE IN ECONOMIC HISTORY* 20-32 (1981) (discussing economies of scale that might guide the protection and enforcement of property rights); Abraham Bell & Gideon Parchomovsky, *A Theory of Property*, 90 CORNELL L. REV. 531, 561 (2005) (“Property definition and enforcement may also benefit from economies of scale.”); Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 YALE L.J. 1, 51 (2000) (discussing “economies of scale and scope” and suggesting that “enforcing and defining basic forms of property rights are likely to be complementary activities”); Henry E. Smith, *Property and Property Rules*, 79 N.Y.U. L. REV. 1719, 1788 (2004) (suggesting that “significant economies of scale in the enforcement of property rights” make “government provision more attractive”).

ance insulating that party from loss from the risk.⁵ When a person buys full insurance for her losses, she no longer has an incentive to invest in private precautions to prevent the relevant harm from materializing.⁶ For example, an automobile owner who has full insurance against theft may not bother to install a car alarm because it would be cheaper to collect on the insurance policy than it would be to install the alarm. To combat moral hazard, the insurance industry must protect itself by denying coverage to policy owners who do not adopt such precautionary measures,⁷ denying payment to policyholders who fail to undertake required precautions,⁸ or requiring the insured to maintain some financial exposure to risk.⁹

Although best known in insurance settings, problems of moral hazard may arise in other contexts as well. For property scholars, the most familiar context is takings compensation. Under the Takings Clause of the Fifth Amendment,¹⁰ the government must pay just compensation to private property owners from whom it has taken property.¹¹ The just compensation mandate has sparked a lively scholarly debate about the optimal compensation measure.¹² It is easy to justify—on an

⁵ See generally Kenneth J. Arrow, *Uncertainty and the Welfare Economics of Medical Care*, 53 AM. ECON. REV. 941, 961-62 (1963).

⁶ See George L. Priest, *The Current Insurance Crisis and Modern Tort Law*, 96 YALE L.J. 1521, 1547 (1987) (“Moral hazard refers to the effect of the existence of insurance itself on the level of insurance claims made by the insured.”).

⁷ See Robert Cooter, *Unity in Tort, Contract, and Property: The Model of Precaution*, 73 CALIF. L. REV. 1, 39 (1985) (describing “the practice of increasing insurance rates when claims on the policy have been made” as a method of combatting moral hazard).

⁸ See *id.* (“Some insurance contract clauses operate like negligence rules to bar recovery when the insured’s precaution is at fault.”).

⁹ See Mark V. Pauly, *The Economics of Moral Hazard: Comment*, 58 AM. ECON. REV. 531, 535 (1968) (“However, various devices are written into insurance, in part to reduce the moral hazard, of which the most important are deductibles and coinsurance”). See generally Steven Shavell, *On Moral Hazard and Insurance*, 93 Q.J. ECON. 541 (1979) (developing a model to posit that incomplete insurance coverage may help combat the problem of moral hazard).

¹⁰ U.S. CONST. amend. V (providing in part that the federal government shall not take “private property . . . for public use, without just compensation”).

¹¹ See *e.g.*, *Chicago, Burlington & Quincy R.R. Co. v. Chicago*, 166 U.S. 226, 241 (1897) (“[A] judgment of a state court, even if it be authorized by statute, whereby private property is taken for the State or under its direction for public use, without compensation made or secured to the owner, is . . . wanting in the due process of law required by the Fourteenth Amendment . . .”); see also U.S. CONST. amend. XIV, § 1 (providing that individual states shall not “deprive any person of . . . property, without due process of law”).

¹² For a sample of this lively debate, see generally Abraham Bell & Gideon Parchomovsky, *The Hidden Function of Takings Compensation*, 96 VA. L. REV. 1673, 1692-1714 (2010); Abraham Bell & Gideon Parchomovsky, *Taking Compensation Private*, 59 STAN. L.

intuitive level—that a government must make condemnees whole by paying them for the loss they have suffered as a result of the government taking. Yet economists Lawrence Blume, Dan Rubinfeld, and Perry Shapiro take issue with this intuition.¹³ They point out that payment of full compensation to aggrieved property owners can distort the owners' primary behavior by creating moral hazard problems, thereby inducing them to *overinvest* in assets.¹⁴ In other words, asset owners who know that they will receive full compensation from the government are prone to making suboptimal decisions concerning the location of their properties and how much to invest in them. For instance, where buildings are likely to be taken and destroyed to make way for a public project, it would be best for society if owners were to refrain from overinvesting in the buildings' development; however, takings compensation may induce the owners to invest anyway, secure in the knowledge that the developments will be paid for in the event of a taking. Blume, Rubinfeld, and Shapiro's insight has been accepted and expanded upon by many takings scholars.¹⁵

The takings context is not unique. As we show in this Article, a similar problem pervades the entire law of property. State enforce-

REV. 871, 890-905 (2007); Lawrence Blume & Daniel L. Rubinfeld, *Compensation for Takings: An Economic Analysis*, 72 CALIF. L. REV. 569, 582-618 (1984); William Fischel & Perry Shapiro, *A Constitutional Choice Model of Compensation for Takings*, 9 INT'L REV. L. & ECON. 115, 118-24 (1989); William A. Fischel & Perry Shapiro, *Takings Insurance and Michelman: Comments on Economic Interpretations of "Just Compensation" Law*, 17 J. LEGAL STUD. 269, 286-91 (1988); Glynn S. Lunney, Jr., *Compensation for Takings: How Much Is Just?*, 42 CATH. U. L. REV. 721 (1993); Thomas J. Miceli, *Compensation for the Taking of Land Under Eminent Domain*, 147 J. INSTITUTIONAL & THEORETICAL ECON. 354, 359-61 (1991); Frank I. Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law*, 80 HARV. L. REV. 1165, 1214-24 (1967); Joseph L. Sax, *Takings, Private Property and Public Rights*, 81 YALE L.J. 149, 161-76 (1971); and Christopher Serkin, *The Meaning of Value: Assessing Just Compensation for Regulatory Takings*, 99 NW. U. L. REV. 677 (2005).

¹³ See Lawrence Blume, Daniel L. Rubinfeld & Perry Shapiro, *The Taking of Land: When Should Compensation Be Paid?*, 99 Q.J. ECON. 71, 90 (1984) ("When moral hazard is present, compensation is required to induce the correct inframarginal decision. But this compensation must be paid in a manner that does not create a marginal distortion.").

¹⁴ See *id.* at 81-86 (determining that if the "social optimum requires the taking of land," then "compensation at full-market value is . . . inefficient").

¹⁵ See generally Steve P. Calandrillo, *Eminent Domain Economics: Should "Just Compensation" Be Abolished, and Would "Takings Insurance" Work Instead?*, 64 OHIO ST. L.J. 451, 513-16 (2003); Robert Innes, *Coming to the Nuisance: Revisiting Spur in a Model of Location Choice*, 25 J.L. ECON. & ORG. 286, 301-02 (2009); Robert Innes, *Takings, Compensation, and Equal Treatment for Owners of Developed and Undeveloped Property*, 40 J.L. & ECON. 403, 404-06 (1997); Amnon Lehavi, *Intergovernmental Liability Rules*, 92 VA. L. REV. 929, 942-48 (2006).

ment of property rights resembles a form of insurance policy for property owners in several important respects. Like insurance, state-sponsored enforcement of private property rights can distort investment decisions and lead owners to invest excessively in assets or to underinvest in preventing harm. Thus, as with insurance, the state should combat this moral hazard in certain instances by requiring owner-sponsored protections or by making owners bear part of the losses.

Imagine a legal regime under which the government undertakes to make whole every aggrieved property owner for harm she suffers from violations of her property rights. It is easy to see that under this regime, property owners would have little incentive to protect their belongings. Since compensation would be completely independent from the level of precautions taken by the owner, rational owners would find it in their best interest to invest as little as possible in precautions. A gas station owner who knows that police will stop gasoline thieves attempting to pump gas without paying will feel no need to take her own measures to prevent theft, even if police enforcement is more expensive than the measures that she herself could take.

To be sure, state enforcement in the real world falls short of providing full insurance to property owners. First, state enforcement is largely deterrence-based, as opposed to compensation-based. The state does not guarantee that it will pay property owners the value of their property if it is compromised, converted, or destroyed by others. For example, if Alice converts Beatrice's laptop, uses it, then burns it, Beatrice will not be able to collect compensation from the state even if Alice is apprehended. Of course, Beatrice may be able to recover the value of the laptop from Alice by bringing a conversion action against her. If Alice is judgment proof, however, Beatrice will not be made whole. Thus, where the state fails to achieve absolute deterrence, owners cannot view state enforcement as the perfect equivalent of insurance.

A second difference between insurance and state enforcement in the real world concerns the rate of wrongdoer apprehension. Unlike insurance arrangements that guarantee compensation to policy holders, the state enforcement system can only operate if the wrongdoer is first apprehended, and the rate of such apprehension is far from perfect.¹⁶

¹⁶ According to Federal Bureau of Investigation statistics, in 2010, "18.3 percent of property crimes in the Nation were cleared by arrest or exceptional means." See FBI, *UNIFORM CRIME REPORT: CRIME IN THE UNITED STATES, 2010: OFFENSES CLEARED*, at 2 (2011), available at <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/clearancetopic.pdf>. Clearance by "exceptional means" applies to con-

Thus, even where full compensation is theoretically available to the owner—for instance, where the thief is not judgment proof and a civil action is available—the owner may not receive full compensation because the thief cannot be identified.

Contrary to conventional wisdom, we argue that this *lack* of perfect enforcement could actually be a good thing.¹⁷ As we will show, in a world with perfect enforcement, property owners will refrain from taking any measures to protect their property, even if those measures are as effective as state protection and could be implemented at a lower cost.

We do not mean to claim that the current level of protection is optimal. Rather, we posit that the optimal level of enforcement—whatever it may be—falls short of perfect enforcement. Perfect enforcement is liable to distort owners' investment incentives and create a moral hazard problem. By contrast, imperfections of state enforcement of property rights may sometimes mitigate this problem by giving owners an incentive to invest in private protection measures. Hence, perfect state enforcement of private property rights is not universally desirable, as it may lead owners to *overinvest* in their assets or *underinvest* in protecting their assets.

Relatedly, our analysis suggests that policymakers should be especially concerned about the moral hazard problem in the following two scenarios. The first scenario occurs when existing state enforcement of property rights is nearly perfect, such that the probability of apprehending offenders is almost absolute. The second scenario occurs when the law provides property owners with supercompensatory remedies that give aggrieved owners compensation above and beyond their loss. In these cases, it makes sense for lawmakers to adopt the same measures that private insurers use to combat moral hazard problems. Such

texts in which “elements beyond law enforcement’s control prevent the agency from arresting and formally charging the offender” despite the fact that law enforcement authorities have identified the offender and gathered sufficient evidence to arrest, press charges, and prosecute the offender. *Id.* at 1. For more information, see also *Crime in the United States 2010: Offenses Cleared*, FBI, <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/clearances> (last visited April 15, 2012), and tables available therein.

¹⁷ Cf. Omri Ben-Shahar & Alon Harel, *Blaming the Victim: Optimal Incentives for Private Precautions Against Crime*, 11 J.L. ECON. & ORG. 434, 439 (1995) (analyzing the potential for victim overinvestment in precautions due to a failure to take into account private benefits to criminals, as well as the displacement effects of protections). Ben-Shahar and Harel note possible substitutive effects between private and public enforcement and endorse a contributory fault rule that denies or reduces sanctions for criminal behavior where the victim failed to take optimal precautions. *See id.* at 453.

strategies include reducing the expected recovery amounts (a measure akin to the use of deductibles in the insurance context), forcing property owners to take certain affirmative steps to protect their property (a measure akin to insurance companies' denial of coverage to policyholders who fail to undertake required precautions), and requiring property owners to reimburse the state for certain kinds of enforcement activity undertaken to protect their private property.

Finally, our analysis offers an important refinement to property theory. There is broad consensus among property rights economists that state enforcement of private property rights incentivizes owners to invest optimally in assets.¹⁸ Economists explain that many assets can yield optimal outputs only if the assets are consistently developed over a sufficiently long period.¹⁹ Absent certainty over the future enforceability of their property rights, owners will not realize the full economic potential of their assets.²⁰ This conventional analysis, while not wrong, is clearly incomplete. Our analysis demonstrates that state enforcement can distort owners' behavior, thereby prompting them to engage in socially suboptimal behavior. Hence, any property system that relies on state enforcement—and nearly all legal systems fall into this category—must incorporate rules that mitigate owners' proclivities to rely excessively on state protection at the expense of the owners' own protection of their properties.

¹⁸ See, e.g., F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 721 (2001) (“[W]e typically look to clear and enforceable boundaries in property rights to provide incentives for investment while at the same time giving clearance to non-infringing activities.”); Paul G. Mahoney & Chris W. Sanchirico, *Competing Norms and Social Evolution: Is the Fittest Norm Efficient?*, 149 U. PA. L. REV. 2027, 2054 (2001) (“The central justification for enforceable property rights is to encourage investment.”); Stewart E. Sterk, *Intellectualizing Property: The Tenuous Connections Between Land and Copyright*, 83 WASH. U. L.Q. 417, 442 (2005) (noting that “it has become a commonplace to justify private property as a mechanism for optimizing use and development of land. One important aspect of this optimization is the incentive property creates for an owner to invest in a resource. Self-interested actors will underinvest in a resource that is not propertized because the investor will not reap the benefits of her investment”). The classic justification for private property is found in Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347 (1967), in which Demsetz argues that private property internalizes externalities in an owner and thereby creates incentives for more efficient management of resources.

¹⁹ See, e.g., STEVEN SHAVELL, *FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW* 11-19 (2004) (discussing the way in which property rights create incentives to work and improve “things”).

²⁰ See, e.g., Stephen Knack & Philip Keefer, *Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures*, 7 ECON. & POL. 207, 223 (1995) (concluding that “institutions that protect property rights are crucial to economic growth and to investment”).

The remainder of this Article proceeds in three parts. In Part I, we imagine a world of perfect property enforcement in order to isolate the conditions under which moral hazard might endanger a state-enforced property rights system. In Part II, we examine several instances in which state laws presume that property owners will be insufficiently incentivized to protect their own assets and thus require property owners to take certain protective measures. In Part III, we explore the tension between moral hazard and property theorists' general preference for perfect enforcement of property rights. We conclude by suggesting that in some cases, it is best for the state to offer only imperfect enforcement of property rights.

I. AN IMAGINARY WORLD OF PERFECT ENFORCEMENT

We begin with a thought experiment that imagines a world in which the State's ability to enforce property law is perfect. Our aim is to imitate the strategy of Ronald Coase's famous article, *The Problem of Social Cost*.²¹ Just as Coase imagined an impossible world without transaction costs in order to illustrate the flaws in analyzing the problems of socially problematic behavior as questions regarding control of externalities,²² we imagine an impossible world of perfect property enforcement in order to illustrate the potential undesirable side effects of state property rights enforcement.

In this imaginary world, on the occasion of every theft or vandalism, police would instantly know of the problem, and they would instantaneously and unerringly apprehend the thief or vandal. Furthermore, all stolen goods would be expeditiously returned in pristine condition to their rightful owners, and vandals would fix or pay to fix the damage. Trials would be immediate, and justice would be infallible such that thieves and vandals would be convicted by an errorless justice system and punished enough to deter all deterrable thieves and vandals. In this imaginary world, theft and vandalism would be vanishingly rare.²³ Security of possession would be maintained by the perfect state property-enforcement system.

²¹ R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

²² *Id.* at 15-16.

²³ For economic analyses of deterrence in criminal law, see generally, SHAVELL, *supra* note 19, at 471-528; Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968); Isaac Ehrlich, *On the Usefulness of Controlling Individuals: An Economic Analysis of Rehabilitation, Incapacitation, and Deterrence*, 71 AM. ECON. REV. 307 (1981); and Steven S. Kan, *Corporal Punishments and Optimal Incapacitation*, 25 J.

For our purposes, the important result of this system would be that no owner would ever take any precautionary measures to protect her property. Owners would have no need to worry about theft if every theft resulted in the instantaneous return of the property as if the theft had never occurred. No owner would place bars on the windows to her house or lock her automobile. There would be no car alarms. No bicycle locks would ever be seen. Similarly, no owner would need to worry about establishing businesses in areas where potential thieves or vandals lurked.

While this may sound ideal, the property owner's lack of worry would be highly regrettable from a societal point of view. Using a bicycle lock is a more cost-effective way of reducing the risk of bicycle theft than the equivalent expenditure in police protection. Keeping art in a secure museum is likely cheaper than leaving the works in the open and posting separate police guards at each location.

Our thought experiment confirms the well-known observation that state property enforcement can potentially replace private enforcement of property rights.²⁴ The better the state property-enforcement system, the more likely it is that private enforcement will disappear. In the real world, enforcement is costly, and the efficacy of different enforcement measures should be weighed against their costs. Once cost is taken into account, it is obvious that in some cases state enforcement should not replace private enforcement. Assume that public enforcement measures and private precautionary measures are equally effective in protecting private property rights and that the two kinds of enforcement are perfectly substitutive but vary in their costs. When state enforcement is less costly than private precautions, the former should be the preferred mode of protection. Conversely, when private protection measures cost less than state enforcement, efficiency dictates that those private measures be implemented. Additionally, since in reality, state and private protective measures are not equally effective in all circumstances, we must conclude that, in some cases, it is best for private measures to partially or even completely supplant state enforcement.

Often, real-world state enforcement is highly imperfect, giving private owners cause to protect their property. Thus, most real-world

LEGAL STUD. 121 (1996). For a discussion on undeterrable offenders, see Christopher Slobogin, *A Jurisprudence of Dangerousness*, 98 NW. U. L. REV. 1, 40-48 (2003).

²⁴ See THOMAS HOBBS, *LEVIATHAN* 115-19 (A.R. Waller ed., Cambridge Univ. Press 1904) (1651) (attributing the emergence of civil society to, among other things, the need for centralized protection of property rights).

property owners adopt protective measures to safeguard their possessions. However, theory suggests that there may be cases in which state enforcement is so close to perfect as to crowd out private enforcement of property. In those cases, state enforcement—though imperfect—is sufficiently effective to discourage individual owners from adopting socially desirable precautions to protect their property.

In such situations, state enforcement creates an incentive structure similar to that which engenders the moral hazard problem. As we noted,²⁵ moral hazard has been identified and discussed extensively in the insurance literature, where it refers to a perverse incentive inadvertently created by insurance coverage.²⁶ Insurance coverage tries to ameliorate a client's losses from risk aversion by promising sufficient payment in the event of loss to make the insured indifferent to the risk. And therein lies the rub: once the insured is indifferent to risk, the insured feels no need to take precautions to avoid that risk. For instance, when insurance coverage fully compensates a car theft, the owner need not worry about exposing the vehicle to risk of theft.²⁷

State protection of property rights may create a similar, though not identical, dynamic. In some cases, state enforcement can be so effective as to leave owners insufficiently motivated to defend their possessions themselves. Comparing the real world with an imagined world of perfect enforcement enables us to isolate the conditions under which a system of state-enforced property rights might discourage socially desirable private enforcement measures. Specifically, we expect this socially adverse outcome to arise under two conditions: first, when the likelihood of apprehension is very high and the criminal penalties are severe; and, second, when the law provides aggrieved victims supracompensatory remedies. Note that these conditions are important to us only when they discourage private enforcement measures that would be more cost-effective than equivalent amounts of state protection.

²⁵ See *supra* notes 7-9 and accompanying text.

²⁶ See generally David M. Cutler & Richard J. Zeckhauser, *The Anatomy of Health Insurance* (discussing moral hazard in the context of health insurance), in 1 HANDBOOK OF HEALTH ECONOMICS 565, 576-87 (A.J. Culyer & J.P. Newhouse eds., 2000); Tom Baker, *On the Genealogy of Moral Hazard*, 75 TEX. L. REV. 237, 244-67 (1996) (reviewing the development of the moral hazard concept as related to insurance).

²⁷ See Priest, *supra* note 6, at 1547 (defining *ex ante* moral hazard as "the reduction in precautions taken by the insured to prevent the loss, because of the existence of insurance").

Insurance theory suggests that the moral hazard problem can be addressed in one of two ways,²⁸ and property law can adapt these solutions to the analogous moral hazard problem it faces. First, insurance policies may require the insured to bear some of the risk of loss. Typically this involves requiring the insured to pay an out-of-pocket deductible of a set amount before the insured can recover under the policy.²⁹ This forces the insured to view the insured event as one that entails financial loss in the amount of the deductible. Consequently, the deductible induces the insured to invest in precautions when the cost of the precautions is lower than that of the deductible multiplied by the probability that the event will occur. This more closely aligns the interests of the insured and the insurer. Alternatively, the insurance company may reduce payments on the policy if the insured's behavior is analogous to contributory negligence.³⁰ For instance, homeowners may be barred from recovering from a fire insurance policy if the homeowners contributed to the fire by creating combustible conditions in the house.

A second way of dealing with moral hazard requires the insured to take specific steps to ameliorate the risk. For example, car insurance policies may require owners to install a car alarm and an ignition lock.³¹ The strategy behind such a demand differs from the strategy

²⁸ See Pauly, *supra* note 9, at 535-36 (discussing deductibles and coinsurance as tools that can alleviate moral hazard problems in health insurance); Shavell, *supra* note 9, at 541 (noting the "two partial solutions to the problem of moral hazard: (i) incomplete coverage against loss and (ii) 'observation' by the insurer of the care taken to prevent loss").

²⁹ See, e.g., Milton Harris & Artur Raviv, *Some Results on Incentive Contracts with Applications to Education and Employment, Health Insurance, and Law Enforcement*, 68 AM. ECON. REV. 20, 27 (1978) ("One way to mitigate the inefficiency [of the incentive for the insured to overspend] is to impose some of the cost of medical care on the insured."); Bengt Hölmstrom, *Moral Hazard and Observability*, 10 BELL J. ECON. 74, 80 (1979) (arguing that "optimal accident insurance policies necessarily entail deductibles in the presence of moral hazard"). For a skeptical view of the utility of deductibles in insurance contracts, see Richard F. Schmidt, *Does a Deductible Curb Moral Hazard?*, 28 J. INS. 89, 92 (1961), which analyzes the rationale for deductibles in insurance scholarship and suggests that deductibles are only effective in preventing "overzealous pursuit of legitimate small claims." But see Pauly, *supra* note 9, at 536 (stating that a deductible combats moral hazard because it "either (a) has no effect on an individual's usage or (b) induces him to consume that amount of care he would have purchased if he had no insurance").

³⁰ See PETER CANE, *ATYIAH'S ACCIDENTS, COMPENSATION AND THE LAW* 237 (7th ed. 2006) (explaining that insurance policies may require the insured to take reasonable precautions).

³¹ Cf. N.Y. INS. LAW § 2337(a) (McKinney 2006) ("The superintendent shall direct that insurers appropriately modify the premium attributable to fire, theft and compre-

behind deductibles. The latter seeks to create a pricing mechanism that incentivizes the insured to invest in precautionary behavior. In contrast, insurance companies that direct specific actions make no attempt to incentivize behavior but rather dictate the precautions that the company finds proper. Direct dictation of precautions avoids the distortions in the insured's cost-benefit analysis that occur when risks are partially subsidized. However, it also sacrifices the flexibility of permitting the insured to adjust their behavior according to their individual circumstances.

In Part II, we show that the property situations we examine may be analogized to the conditions giving rise to moral hazard. Similarly, we show that the law's response to these situations is similar to that of insurance companies because the law can either expose property owners to some of the risk of loss or the law can require specific precautionary measures.

Admittedly, state enforcement of property rights is not identical to insurance for two important reasons. First, the state does not respond whenever a property right is violated. In many situations the owner does not call upon the state for protection; even if notified, the state often does little more than register that a property offense has occurred. For instance, in the event of car theft, law enforcement authorities may conclude that there is insufficient evidence to engage in a search for the thief or the stolen car, even if the car owners make full and timely reports of thefts to the police. By contrast, insurance companies are expected to make payment in all cases of covered risk. For example, an insured car owner expects to receive payments in the case of a theft, except in the rarest of circumstances.

Second, state enforcement does not guarantee that an owner will be made whole—either by returning her undamaged property or by compensating her for damaged or unrecovered property. Underpinning this difference is the state's bias toward apprehension and punishment, rather than compensation. Stolen property is rarely returned. The state does not pay property owners the value of their property if it is compromised, converted, or destroyed by others. Even if the thief is found, the state does not guarantee that property will be returned to its owner. And many thieves are never caught. Given that the state generally fails to effect absolute deterrence, owners cannot view state enforcement as the perfect equivalent of insurance. The

hensive coverages for automobiles equipped with such [anti-theft] devices, to reflect reduced exposure to loss.”).

combined effect of these imperfections in state enforcement of property rights may actually be welcome since it mitigates the moral hazard problem by giving owners an incentive to invest in private protection measures.

Notwithstanding these differences between state enforcement of property and insurance, there are cases where state enforcement of property rights can distort owners' incentives to protect their properties, causing them to "outsource" this task to the state even when doing so is manifestly inefficient. In such cases, lawmakers may take cues from private insurance companies to reduce moral hazard problems. Lawmakers may embrace mechanisms akin to insurance deductibles that require property owners to bear some of the risk of loss or cost of enforcement. Alternatively, lawmakers create mechanisms that serve as mandatory measures of protection that force property owners to adopt certain procedures in order to avail themselves of state protection.

II. THE DISTORTIVE EFFECT OF STATE ENFORCEMENT

Having established the theoretical possibility that state enforcement of property rights may be excessive and may lead to moral hazard, we now explore specific cases in which the law may view property enforcement as creating such moral hazard. A careful perusal of property law reveals numerous provisions that require exactly the kinds of measures for self-protection of property that one would expect property owners to take on their own in the absence of moral hazard. These provisions demand that owners take affirmative steps to enforce their rights, both physically against potential takers, and technically by complying with legal formalities as a condition of future legal enforcement.

In this Part, we explore these examples and show that they illustrate the phenomenon explored in Part I: in a variety of cases, it is rational for owners to refrain from taking steps to protect their rights to valuable assets as a result of the very structure of legal property protection. Each of the cases has its own internal logic, and it is not our contention that moral hazard is the only reason that the state has required owners to adopt measures of protection. We do claim, however, that moral hazard plays a key role in understanding the dynamic giving rise to the legal demands for protection.

We also examine the efficacy of the ameliorative measures taken by the state and offer some additional measures that the state might adopt. Specifically, we explain how state actions emulate the behavior of private insurance companies by mandating that property owners

embrace certain measures, and we suggest other analogous approaches that the state could take.

A. *Prepay Pumps*

We begin with the example of prepay pumps at gas stations. Several jurisdictions have adopted regulations or laws mandating that gas station owners purchase and install equipment requiring customers to prepay for gas.³² In gas stations without such “prepay equipment,” customers drive their vehicle to the pump and can fill up their gas tank without supervision. At the end of the procedure, customers are expected to approach the clerk and pay for the gas. Prepay pumps thus prevent gas station owners from relying on an “honor system.”³³ In stations using prepay pumps, meanwhile, customers must present payment in order to unlock the pumps and fill their gas tanks.

Obviously, it is much more difficult for gasoline thieves to avoid paying at stations with prepay pumps. One would therefore expect all gas station owners to engage in a simple cost-benefit calculus. On the one hand, they must consider the cost of replacing their old equipment with prepay pumps. On the other hand, they have to weigh the likelihood of gas theft and the resulting economic loss to the gas station. The rational gas station owner would purchase prepay pumps on her own unless the frequency and magnitude of thefts were quite low.

Why, then, do so many jurisdictions feel the need to force gas station owners to purchase equipment we would expect them to buy in any event? The likely answer is that a large number of gas station owners do not consider it worth their while to protect themselves from gas thieves. This is because gas station owners do not include the full cost associated with gas theft in their cost-benefit analyses. When gas thieves “pump and run,” gas station owners absorb only the cost of the stolen gasoline. The state criminal justice system is responsible for the expense of pursuing thieves, apprehending them, and potentially bringing them to trial. The public bears other costs as well. For example, police chases of thieves can cause traffic accidents and violent responses by gas station owners can harm innocent third parties. As with most negative externality-producing activities, the optimal

³² See *supra* note 1.

³³ See Maria Elena Baca, *Prepay May Become Only Way at Pump*, STAR TRIBUNE (Minneapolis), Oct. 27, 2011, at 1A (“Paying on the honor system may be part of the state’s social fabric, but in Coon Rapids and elsewhere it’s a privilege that’s abused regularly.”).

amount of theft is higher from the vantage point of the owner than it is for society. Consequently, lawmakers do not leave the decision as to whether to install pay-first equipment exclusively to gas station owners.

The probability of apprehending gasoline thieves need not be very high for moral hazard to be present. Even with low apprehension rates, the threat of police action can deter some thieves, even if the cost of enforcing the law against thieves is prohibitive. As the Alberta Association of Police Chiefs reportedly opined, with a “spike in prices . . . creating more gasoline thefts[, the] police have better things to do than chase gas-and-dashers.”³⁴ Meanwhile, because gas station owners need not concern themselves with the costs to police, they can limit their focus to the marginal effect on revenue when customers must bear occasional inconvenience due to prepay pumps.³⁵ Consequently, lawmakers must sometimes step in and legally mandate the installation of prepay pumps in gas stations. This solution may be analogized to insurance companies demanding specific ameliorative measures from the insured.

B. *Copyright Formalities*

For years, copyright law imposed strict formal requirements on authors wishing to obtain protection. In order to enjoy the benefits of copyright protection, an author had to comply with precise registration and notice requirements.³⁶ The penalties for failure to comply could be quite severe. For instance, under the Copyright Act of 1909, if an author published her work without attaching a proper notice of copyright ownership, the law would treat her publication as a “dedication to the public”³⁷ that stripped away all legal protection for her copyright.³⁸

³⁴ *Drivers Should Pre-Pay At Pumps: Police*, HUFFINGTON POST CANADA (May 31, 2011, 1:04 PM), http://www.huffingtonpost.ca/2011/05/31/prepay-gas-pumps_n_869132.html.

³⁵ *Id.*

³⁶ See Copyright Act of 1909, Pub. L. No. 60-349, §§ 9–10, 19, 35 Stat. 1075, 1077-79 (providing the notice and registration requirements for copyrighted works).

³⁷ See *Universal Film Mfg. Co. v. Copperman*, 212 F. 301, 302 (S.D.N.Y.) (“[P]ublication without [notice of copyright] amounts to a dedication to the public sufficient to defeat all subsequent efforts at copyright protection.”), *aff’d on other grounds*, 218 F. 577 (2d Cir. 1914).

³⁸ See Copyright Act of 1909, § 20 (stating that an “innocent infringer” who is unaware of the copyright claim because the “prescribed notice” has not been attached to the work is not liable for damages and will not be permanently enjoined from using the work “unless the copyright proprietor shall reimburse to the innocent infringer his reasonable outlay innocently incurred” if the court so orders).

Copyright formalities have been greatly reduced in recent decades, beginning with the Copyright Act of 1976.³⁹ General publication without notice no longer leads to forfeiture of the copyright.⁴⁰ Nonetheless, we will focus here on the notice requirement as it existed under the old Act. It provides a useful example of the property law system demanding that owners take actions that would seem to be elementary steps of self-preservation.

Copyright notice, as defined by the 1909 and 1976 Acts, consisted of little more than attaching a copyright symbol, the name of the owner, and the year of publication.⁴¹ This action may be viewed as the copyright equivalent of writing one's name in the lapel of a jacket. Owners seeking to enjoy a financial benefit from the work had an incentive to post this information even without the formal requirements. What explained the law's insistence that owners undertake an action most of them would have undertaken anyway?

The surprising answer can be found in the law itself. Copyright law often provides for statutory damages in the event of copyright violation.⁴² This means that illicit copying may turn out to be more valuable to owners than sale. Beginning in the late eighteenth century, copyright owners were allowed to collect damages at a predetermined

³⁹ Pub. L. No. 94-553, 90 Stat. 2541 (codified as amended in scattered sections of 17 U.S.C.). Sections 402–406 provide a more lenient and flexible framework for affixing copyright notice, such as more flexible form provisions, curing provisions for defective notices, and incentives to affix a proper notice. The law also sets out circumstances in which the omission of a copyright notice does not invalidate the copyright. See 17 U.S.C. § 405(a) (2006). For an overview of the changes to the notice requirements, see U.S. COPYRIGHT OFFICE, CIRCULAR 3: COPYRIGHT NOTICE (2011), available at <http://www.copyright.gov/circs/circ03.pdf>.

⁴⁰ Section 7 of the Berne Convention Implementation Act of 1988 amended 17 U.S.C. § 401(a) by substituting the language that a notice of copyright “may be placed on” for the language that a notice of copyright “shall be placed on all” copies. Pub. L. No. 100-568, sec. 7(a), § 401(a), 102 Stat. 2853, 2857 (codified at 17 U.S.C. § 401(a)). While under this amendment a copyright notice was no longer required to secure a copyright, section 401(d) was nevertheless added to further incentivize authors to place a proper notice. See § 401(d), 102 Stat. at 2857 (codified at 17 U.S.C. § 401(d)) (“If a notice of copyright . . . appears on the published copy . . . to which a defendant in a copyright infringement suit had access, then no weight shall be given to such a defendant's interposition of a defense based on innocent infringement . . .”).

⁴¹ Copyright Act of 1909 § 18; 17 U.S.C. § 401(b).

⁴² See, e.g., Copyright Act of 1909 § 25(b) (establishing statutory recovery limits for different copyrighted materials); 17 U.S.C. § 101(b) (using similar language); see also *id.* § 504(c)(2) (stating that statutory damages for willful infringement may equal \$150,000, but providing for statutory damages of only \$200 for an innocent infringer). For a review of statutory damages provisions in copyright law, see Pamela Samuelson & Tara Wheatland, *Statutory Damages in Copyright Law: A Remedy in Need of Reform*, 51 WM. & MARY L. REV. 439, 446-63 (2009).

rate of fifty cents per sheet.⁴³ The amount was subsequently raised to one dollar per sheet.⁴⁴ Following copyright owners' expressions of great dissatisfaction with this arrangement, the 1909 Congress recognized a broader power in copyright owners to collect statutory damages, ranging from \$250 to \$5000 per infringement, instead of actual damages.⁴⁵ The result is that in some cases, owners may wish to induce infringement of their copyright in order to collect payment for the use of a work they otherwise might find difficult or prohibitive to sell. Indeed, in several instances in the recent past, owners of copyrights have displayed no interest whatsoever in copyrighted works other than the ability to sue for copyright infringement.⁴⁶

Legally requiring copyright owners to comply with certain formalities ameliorates this problem by putting unsuspecting third parties on notice that the works are copyright-protected. The notice requirement is not a perfect solution to this problem because even with notice, it is possible to induce infringement in order to collect statutory damages.⁴⁷ Conversely, the absence of notice does not always indicate intent on the part of the owner to induce infringement. The omission is sometimes attributable to a party other than the owner. For example, the omission may be due to a printer's error. One can surmise that these flaws in the notice system were responsible in part for Congress's repudiation of the strict notice requirement. That said, the threat of strategic inducement on the part of copyright owners is still valid. Hence, even today, the Copyright Act requires compliance with certain formalities as a precondition for certain enforcement actions.⁴⁸

⁴³ Samuelson & Wheatland, *supra* note 42, at 447.

⁴⁴ *Id.*

⁴⁵ *See id.* at 447-48.

⁴⁶ *See, e.g.,* Jeffrey Pietsch, *Copyright Troll Loses on Fair Use Claim*, IPLAW BLOG (May 20, 2011), <http://www.theiplawblog.com/archives/-copyright-law-copyright-troll-loses-on-fair-use-claim.html> (describing the business model of Righthaven, LLC as focused on acquiring copyrighted works simply in order to sue for infringement).

⁴⁷ An example of such strategic behavior can be found in the recent case of *Field v. Google Inc.*, 412 F. Supp. 2d 1106 (D. Nev. 2006). The plaintiff, a poet and a lawyer, posted one of his poems on his website and intentionally omitted the "no-archive" meta-tag. *Id.* at 1114. The plaintiff was fully aware that his omissions would lead Google automatically to index his webpage and create a "cache page" containing his copyrighted poem. *Id.* In fact, this was his plan. The plaintiff registered copyrights for his poems and filed an infringement suit against Google. He alleged both direct and indirect liability and requested statutory damages and injunctive relief. *Id.* at 1110.

⁴⁸ *See, e.g.,* 17 U.S.C. § 411(a) (2006) (requiring that, with certain exceptions, "no action for infringement of the copyright in any United States work shall be instituted until preregistration or registration of the copyright claim has been made in accordance with this title").

Stated differently, statutory damages may overcompensate for potential losses of property rights and thereby create moral hazard. Statutory damages may be understood as the equivalent of insurance, and the state requirement of notice can be seen as the equivalent of insurance companies' imposition of required standards of behavior.

C. *Policing Land Boundaries*

There are several examples of the law explicitly conditioning a property owner's right to exclude on her adoption of certain precautionary measures. In such cases, nonowners have presumptive rights to use assets they do not own unless the true owner implements specified defensive measures. Fencing-out laws provide the best known example. These laws grant cattle owners license to let their cattle wander freely over land owned by others without fear of being liable in trespass, unless the landowner constructs a fence to keep the cattle out.⁴⁹ Laws granting hunters license to enter nonenclosed land with no signs posted provide another example of this phenomenon.⁵⁰ In both cases, lawmakers deny landowners the full right to exclude others from their land unless the property owners take the required defensive measure.

Doubtless, part of the reason for such rules is to facilitate Coasean bargaining. Fences and posted signs may serve as valuable signals to third parties informing them about the preferences of the property

⁴⁹ For example, under Colorado law,

Any person maintaining in good repair a lawful fence . . . may recover damages for trespass and injury to [agricultural property] from the owner of any livestock which break through such fence. No person shall recover damages for such a trespass or injury unless at the time thereof such [property was] protected by such a lawful fence.

COLO. REV. STAT. § 35-46-102 (1995).

Similarly, under Wyoming law,

Any person owning or having in his possession or charge any livestock . . . which breaches into any lawful enclosure belonging to someone other than the owner of the animal, is liable to the party sustaining the injury for all damages sustained by reason of such breaching [but if] it appears upon trial that the plaintiff's enclosure is not a lawful fence . . . judgment shall be rendered against the plaintiff for costs of suit and damages sustained by defendant.

WYO. STAT. ANN. § 11-28-108(a), (d) (2009).

⁵⁰ See, e.g., OR. REV. STAT. § 498.120 (2007) ("No person shall hunt upon the cultivated or enclosed land of another without first obtaining permission from the owner or lawful occupant thereof, or the agent of such owner or occupant."); W. VA. CODE § 20-2-7(a) (2008) ("It is unlawful for any person to shoot, hunt, fish or trap upon the fenced, enclosed or posted lands of another person . . . without written permission . . .").

owner and indicating whether the third parties need to bargain with the owner to secure entry.⁵¹ But upon further reflection, the signaling explanation is not completely satisfying. Whether the lawmaker grants the license to nonowners or not, an owner may still signal her preference to third parties. For instance, in a jurisdiction without a mandatory hunting license, a landowner can post notices stating that hunters are welcome to enter the land. Creating a mandatory license does not create new signals, it simply changes the default rules: an owner must signal her desire to exclude rather than her willingness to license entry. The law could have taken the position that all use of others' land is prohibited unless the owner affirmatively consents to the use. Given the low cost of the signals, one would expect similar results whether owners publically deny a license granted by lawmakers (by fencing out or posting "no trespass" signs) or owners publically grant a license denied by lawmakers (by not fencing or posting "all welcome" signs).

A more complete explanation is that lawmakers are interested not only in signaling, but also in substance. Such rules aim to promote bargaining as well as to induce owners to take affirmative steps to defend their property. At least in part, the law requires fencing out cattle in order to prompt owners to build fences, rather than merely to help cattle ranchers know what landowners think. Fencing-out laws force landowners to make small investments to protect their possessions. As noted previously, one would expect landowners to adopt those measures independently and without need for additional legal incentive. Why force them?

The reason, we posit, is that landowners might strategically decide *not* to adopt the protective measures despite their low cost. Under a legal regime that does not require landowners to adopt defensive measures, they could instead rely on state enforcement to combat trespass by cattle. Even if local law enforcement authorities cannot handle cattle invasions perfectly, owners may feel that state protection is effective enough. The probability of detection is sufficiently high, and identifying the culprit is easy enough to convince landowners to abstain from voluntarily policing their own boundaries. Additionally, in many states, punitive damages are available to plaintiffs in trespass

⁵¹ See Coase, *supra* note 21, at 4 (describing the possibility of parties bargaining to a mutually profitable agreement where transaction costs are sufficiently low).

actions.⁵² The state law-enforcement and adjudication mechanisms, of which an aggrieved owner can take advantage, may be seen as a state-provided subsidy. Given this subsidy, owners may refrain from taking action to protect their property, low cost notwithstanding.

In terms of moral hazard, the fence-out rule can be described as combating excessive incentives on landowners to rely on reporting and public enforcement of their rights to exclude cattle. A fence-out rule is the equivalent of required ameliorative measures dictated by the insurance company.

D. *Trade Secrets*

The law of trade secrecy provides perhaps the clearest example of the state requiring ameliorative measures to combat moral hazard. Trade secrets law protects informational assets that confer upon the holder a commercial advantage.⁵³ Accordingly, trade secrets law covers both patentable information—such as inventions and other technological developments—and unpatentable information—such as consumer lists, marketing strategies, and “know how.”⁵⁴ Critically, trade secrets protection has always been conditioned on the owner making reasonable efforts to protect the secrecy of the information.⁵⁵ An owner who

⁵² See, e.g., *Jacque v. Steenberg Homes, Inc.*, 563 N.W.2d 154, 166 (Wis. 1997) (upholding a punitive damages award even where plaintiff suffered no actual damages from trespass).

⁵³ See 18 U.S.C. § 1839(3) (2006) (defining a “trade secret”).

⁵⁴ Under the Uniform Trade Secrets Act, the term “trade secret” is defined as “information, including a formula, pattern, compilation, program, device, method, technique, or process, that: (i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use” UNIF. TRADE SECRETS ACT § 1(4) (amended 1985), 14 U.L.A. 538 (2005). The Third Restatement of Unfair Competition employs a similarly broad definition that includes “any information that can be used in the operation of a business or other enterprise and that is sufficiently valuable and secret to afford an actual or potential economic advantage over others.” RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 (1995); see also 18 U.S.C. § 1839(3) (“[T]he term ‘trade secret’ means all forms and types of financial, business, scientific, technical, economic, or engineering information, including patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques . . . whether tangible or intangible . . .”).

⁵⁵ See 18 U.S.C. § 1839(3)(A) (stating that a statutory trade secret occurs when “the owner thereof has taken reasonable measures to keep such information secret”); UNIF. TRADE SECRETS ACT § 1(4)(ii), 14 U.L.A. 538 (2005) (defining a trade secret as information that “is the subject of efforts that are reasonable under the circumstances to maintain its secrecy”); see also Patrick P. Phillips, *The Concept of Reasonableness in the Protection of Trade Secrets*, 42 BUS. LAW 1045, 1046-50 (1987) (discussing reasonable measures one might take to keep information secret in order to maintain statutory

fails to adopt the requisite measures cannot turn to the legal system if the information is improperly appropriated.

The law's insistence that the owner adopt protective measures may appear puzzling. Logic would suggest that owners of commercially valuable information would adopt measures on their own to keep their information secret. In *Rockwell Graphic Systems, Inc. v. DEV Industries, Inc.*,⁵⁶ Judge Posner suggested—albeit indirectly—that the secrecy requirement may serve the state's desire to reduce the risk of moral hazard.

While discussing the secrecy requirement for trade secrets, Judge Posner highlighted the state expenditures required to protect informational property rights and the need to take such expenditures into account when defining these informational property rights. As he explained:

If Rockwell expended only paltry resources on preventing its piece part drawings from falling into the hands of competitors such as DEV, why should the law, whose machinery is far from costless, bother to provide Rockwell with a remedy? The information contained in the drawings cannot have been worth much if Rockwell did not think it worthwhile to make serious efforts to keep the information secret.⁵⁷

To be sure, Judge Posner's aim here is to show that precautionary measures should be used as a device for signaling to courts the value of information. But by focusing on husbanding public resources for serious cases and by using owners' defensive measures as the standard for determining whether a case is serious, Judge Posner obliquely indicates that trade secret law requires owners of proprietary information to refrain from using the law as a crutch. Owners must protect their information as if the law did not protect it; only then will the courts also act to protect the information. While acknowledging inconsistency in the case law, Elizabeth Rowe summarizes Judge Posner's (and the

protection); Elizabeth A. Rowe, Rethinking "Reasonable Efforts" to Protect Trade Secrets in a Digital World 10-15 (Sept. 2008) (unpublished manuscript), available at http://works.bepress.com/elizabeth_rowe/2 (providing an overview of how courts have interpreted "reasonable efforts" to maintain secrecy).

⁵⁶ 925 F.2d 174 (7th Cir. 1991). Judge Posner's main argument explains that the secrecy requirement is aimed at distinguishing the cases in which the owner truly wants and deserves legal protection for her secrets from those cases in which the owner is simply attempting to harass or obstruct competitors. See *id.* at 178-79. Judge Posner offers several reasons for the secrecy requirement, including preventing wealth transfers among competitors, providing evidence as to whether the information is proprietary or in the public domain, and preventing the entrapment of innocent competitors. *Id.*

⁵⁷ *Id.* at 179.

case law's) approach as denying legal protection that is of "higher" quality than the protection extended to the information by the owner.⁵⁸

Judge Posner's analysis also suggests an answer to the question of why trade secrecy law offers no protection to information where the owner unambiguously signals a desire to maintain secrecy but nevertheless fails to take precautions to keep the information secret. In such cases, the owner clearly signals that the information is valuable, but the law declines to offer protection. The reason for this is that the machinery of the law is costly. Where owners have the ability to take defensive measures that are more cost-effective than the state's enforcement measures, owners are expected to do so.

Trade secrets present an example of the third type of moral hazard. Trade secret law does not provide for extraordinary statutory damages, and it does not promise perfect enforcement. However, trade secret law potentially provides owners with the opportunity to give up easy and cost-effective preventive measures. If trade secret law did not require owners to take precautionary measures, owners could simply label all relevant information "secret" and thereafter rely on trade secret law as the basis for suing competitors after the fact. Litigation is costly, but litigation and enforcement costs are partially subsidized by the state-provided legal system. This creates a disincentive for the owner to take anticipatory measures to protect secrets. The state thus responds, like an insurance company, by requiring the owner to take required ameliorative measures: here, by protecting the secret.

E. *Deductibles*

In all the examples cited thus far, the state's response to potential moral hazard has been to require ameliorative measures. Although none of these examples involves state behavior analogous to an insurance deductible, the regular state of property enforcement is quite similar to insurance coverage with a deductible. This is because state property enforcement does not guarantee the return of stolen items to property owners, and enforcement is often imperfect. As a result, property owners in ordinary cases are aware that they have to bear at least some of the risk of loss where their property rights are violated. Thus understood, the imperfections of state property enforcement can

⁵⁸ See Rowe, *supra* note 55, at 12 ("The courts have made clear that a trade secret owner who itself is lax about taking precautions to prevent the secret from escaping cannot expect to hold others to a higher obligation to preserve the secret.").

be seen as a widespread adoption of the deductible strategy against moral hazard.

III. IMPLICATIONS FOR PROPERTY THEORY

Having explored the various conditions in which state property protection may give rise to moral hazard, we now draw some more general lessons for property theory. A central theme in property literature is that state protection of property rights is necessary in order to encourage optimal investment in the maintenance and improvement of assets.⁵⁹ It should be noted that this theme conflates two more complex ideas. The first idea is that the state is the optimal enforcer of property rights.⁶⁰ The second is that economically successful societies are characterized by heightened state protection of private property.⁶¹ The result of these concepts, economists explain, is that many assets can yield optimal outputs only if consistently developed over a sufficiently long period.⁶² Absent certainty over the future enforceability of their property rights, owners will not realize the full economic potential of their assets.⁶³ State enforcement therefore not only guarantees long-term stability, but is also characterized by economies of scale and scope that, so the standard argument goes, make it superior to private enforcement.⁶⁴

Curiously, it is only in a handful of isolated instances, most notably takings, that scholars have seriously considered the countervailing moral hazard created by state protection. This moral hazard is the danger that owners will be incentivized to overdevelop and underprotect their property.⁶⁵ As we will see, the lopsided treatment of state

⁵⁹ See *supra* note 18 and accompanying text.

⁶⁰ The idea that the state should enforce property rights can be traced back at least to John Locke. Locke argued that although in the state of nature individuals were supposed to enforce their rights on their own, once the state is formed, all enforcement powers are consolidated in the hands of the state. See JOHN LOCKE, *THE SECOND TREATISE OF GOVERNMENT* ch. 9 (J.W. Gough ed., Basil Blackwell 1948) (1690).

⁶¹ See DOUGLASS C. NORTH, *UNDERSTANDING THE PROCESS OF ECONOMIC CHANGE* 155-65 (2005) (noting that developed nations create "effective third party enforcement with all that it entails in terms of institutions and organizations").

⁶² See *supra* note 19 and accompanying text.

⁶³ See *supra* note 20 and accompanying text.

⁶⁴ See *supra* note 4 and accompanying text.

⁶⁵ See, e.g., Louis Kaplow, *An Economic Analysis of Legal Transitions*, 99 HARV. L. REV. 509, 602 (1986) ("The basic economic framework suggests that, as a matter of economic efficiency, [takings] compensation is unwise."); Kyle D. Logue, *Tax Transitions, Opportunistic Retroactivity, and the Benefits of Government Precommitment*, 94 MICH. L. REV. 1129, 1179 n.152 (1996) (describing the moral hazard problem that occurs "when word gets

protection in the literature is not surprising. Yet there are important reasons to recognize the countervailing effect of this protection in order to explain the anomalous phenomena discussed in Part I.

We begin with the traditional understanding of property. As Steven Shavell notes, a justification for property rights is that they properly incentivize people to work and develop resources.⁶⁶ In so arguing, Shavell is not necessarily referring to state-defined and state-protected property rights. But others *do* make this connection. For example, Lee Alston and Bernardo Mueller write, in an account typical of the economics literature:

One of the critical roles of the state is to enforce property rights. Enforcement by the state . . . lowers self-enforcement costs which raises the value of the asset directly but also via the incentive for increased investment. A further impact of state enforcement is that asset holders can relocate their labor from defending their asset to household or market production.⁶⁷

These effects on property rights are generally seen as optimizing the market by providing “[w]ell defined, secure and properly enforced property rights [that] ensure that economic agents have security in their ownership of property,” thereby encouraging the correct amount of investment by property owners.⁶⁸ With a handful of isolated exceptions, theorists have failed to notice—let alone systematically explore—the moral hazard problem that state enforcement of private property rights engenders. The prime exceptions are Blume, Rubinfeld, and Shapiro’s analysis of the economic effects of takings compensation and Louis Kaplow’s work on legal transitions, discussed below.

In *The Taking of Land: When Should Compensation Be Paid?*, Blume, Rubinfeld, and Shapiro highlighted the concern that takings compensation will make owners indifferent to the risk that the government will

out that a state government is planning to exercise its power of eminent domain . . . [and] landowners . . . have an increased incentive to build structures on their property because of the prospect of increasing the price the government must pay for their property”).

⁶⁶ See SHAVELL, *supra* note 19, at 11 (“It is often said that property rights provide individuals with incentives to work . . .”).

⁶⁷ Lee J. Alston & Bernardo Mueller, *Property Rights and the State*, in HANDBOOK OF NEW INSTITUTIONAL ECONOMICS 573, 574 (Claude Menard & Mary M. Shirley eds., 2005).

⁶⁸ Lewis Evans & Neil Quigley with Kevin Counsell, Protection of Private Property Rights and Just Compensation: An Economic Analysis of the Most Fundamental Human Right Not Provided in New Zealand 4 (Feb. 2009), *available at* http://www.iscr.org.nz/f493,14385/14385_Property_rights_as_human_rights_final_27_09_2_Edited_ExWS_KM.pdf.

take their property by eminent domain after they spend money improving and developing it.⁶⁹ In his influential article, *An Economic Analysis of Legal Transitions*, Kaplow constructed a more general argument against compensation for changes in legal regimes.⁷⁰ He concluded that such changes, which he called “legal transitions,” are foreseeable dangers, and that owners should be forced to deal with those dangers just as they would any other risk.⁷¹ Analogizing state compensation to insurance, Kaplow cautioned that fully compensating owners would create moral hazard.⁷² In the face of a changing legal code, owners might nevertheless invest in developing their property as if the legal background were static.⁷³

Our analysis suggests that the risk of moral hazard is not limited to takings compensation or legal transitions more generally. It is instead a pervasive risk to our entire property system. As we demonstrated in Part II, moral hazard problems arise even when the legal regime remains constant, and the problems are not limited to cases of takings. The moral hazard problem arises because state enforcement enhances the value of private property, but owners do not pay for the state enforcement. As we outlined, the legal guarantee of state enforcement can distort owners’ incentives to adequately protect their property, causing them to underinvest in protective measures and, potentially, to overinvest in their property. The problem would be most acute if there were perfect enforcement: if state enforcement resulted in apprehension and punishment of all property offenders and full restoration of goods to their rightful owners, the latter would never invest in protective measures, even if it were socially desirable to do so. The imperfections of legal enforcement mitigate—but do not eliminate—the moral hazard problem in property. Under the conditions we explored in Part II, concerns for moral hazard persist. Hence, our first theoretical contribution was to highlight the prevalence of the moral hazard problem in property law and to identify the conditions under which it is most likely to arise.

⁶⁹ See generally Blume, Rubinfeld & Shapiro, *supra* note 13.

⁷⁰ See Kaplow, *supra* note 65, at 522-36 (arguing that market forces are more efficient than government-led mitigation of policy changes).

⁷¹ *Id.* at 533-36 (“[F]rom an economic perspective, there is nothing particularly unique about risk concerning future government policy that would justify departing from a society’s more general approach toward risk bearing.”).

⁷² See *id.* at 537-41 (“To the extent that insurance covers losses, actors have less incentive to avoid them, either by taking actions that diminish the probability of loss or by behaving in a manner that reduces the amount of loss.”).

⁷³ See *id.* at 568 n.168, 569 n.174 (citing Blume, Rubinfeld & Shapiro, *supra* note 13).

Our second contribution is more prescriptive in nature. We argued that the solution to the moral hazard problem may be found in the same legal domain where the problem was born, namely insurance law. Therein, one can find two principal remedial measures that are used to combat moral hazard problems: deductibles and mandatory measures that the insured must adopt. Both of these may be used in the property context to force property owners to take account of the costs of state protection of private property. These measures thus better align owners' self-interest in protecting their property and the public interest in conserving enforcement resources. The idea of using deductibles to provide less than full compensation has been made in the past by legal scholars—one of us among them⁷⁴—who explored the distortionary effect of takings compensation.⁷⁵ The second solution, mandatory ameliorative measures, has not received sustained attention from takings scholars. Yet, in some cases it can outperform deductibles. For example, the behavior of owners who overestimate the enforcement capabilities of the state—and thus believe that their property will be restored to them—are unlikely to be affected by measures akin to insurance deductibles. Mandatory measures will work better in those cases.

CONCLUSION

In this Article, we have confronted one of the most powerful intuitions in the realm of property: the idea that the best state of the world is one in which the government provides perfect protection for private property rights. Our analysis demonstrates that this intuition does not withstand scrutiny. Perfect government protection of property rights may give rise to the problem of moral hazard on the part of property owners. This may, in turn, lead owners to underinvest in the protection of their property rights, even when it is desirable for them to do so from a societal perspective, and overinvest in the improvement of their property, even when it is clear that such investment is socially suboptimal.

Our analysis of the moral hazard problem created by state protection of rights explains various property rules and doctrines that otherwise appear anomalous. Rules and doctrines mandating that

⁷⁴ See Abraham Bell, *Not Just Compensation*, 13 J. CONTEMP. LEGAL ISSUES 29, 58-62 (2003) (describing the potential for a system of takings compensation based on a model of strict liability plus contributory negligence).

⁷⁵ See *supra* note 9.

property owners take self-interested actions should be understood as attempts by the state to alleviate or mitigate the moral hazard problem arising from state protection. We also showed that such measures are especially desirable when the probability of apprehension of property offenders and the return of stolen goods to their rightful owners is especially high, and when the law provides aggrieved property owners with supracompetitive remedies for property losses.

Our analysis is not meant to facially challenge the conventional wisdom among property scholars that government protection of property rights is desirable. Rather, we aim to refine that wisdom. On the whole, state enforcement is desirable. However, government protection of private property rights also has a downside. Appreciating this downside not only leads to a better understanding of property law and theory, but also alerts us to complementary measures that lawmakers ought to take in order to more closely align the interests of private property owners and society.