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## UNBUNDLING RISK

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### ABSTRACT

*Scholars have explored many ways to rearrange risk outside of traditional insurance markets. An interesting literature addresses a range of innovative alternatives, including the sale of unmatured tort claims or chances at windfalls, “anti-insurance,” or “reverse insurance,” and index-based derivatives that address routine (but life-altering) risks, such as those to home values or livelihoods. Because most of this work grows out of a conviction that specific risk allocations embedded in law could be improved upon, the merits of the newly proposed risk arrangements have taken center stage. This Article, in contrast, examines questions surrounding risk customization itself, such as the optimal amount of stickiness in society’s default risk allocations, the effects of heterogeneity in risk arrangements, and the implications (cognitive and otherwise) of*

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*starting from one risk baseline rather than another. My analysis focuses on risks faced by individuals and households, where gaps and asymmetries in risk-customization opportunities are most pronounced, and where cognitive considerations loom large. The Article develops a taxonomy of risk-shifting moves that illuminates inconsistencies in existing patterns of blocked and missing risk markets, and directs attention to untapped policy design alternatives.*

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## INTRODUCTION

Derek regards himself as an excellent driver, but he lives in a jurisdiction where automobile operators are legally required to carry liability insurance. While trudging to his local insurer to obtain the hated insurance, he notices the offices of a new company called “At Your Own Risk” (AYOR). Intrigued, Derek goes inside and learns about the following “reverse insurance” offer: AYOR will cover Derek’s annual automobile insurance premiums, but if Derek’s insurer has to pay out any claims against him that year, Derek will pay AYOR an equivalent amount, plus an administrative increment.<sup>1</sup> While filling out paperwork, Derek falls into conversation with Carla, who is in the process of selling AYOR her right to recover tort

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1. A number of scholars have examined various forms of reverse insurance or anti-insurance. *See, e.g.*, GUIDO CALABRESI, *THE COSTS OF ACCIDENTS* 219–20 (1970) (describing “reverse insurance”); Robert Cooter & Ariel Porat, *Anti-Insurance*, 31 J. LEGAL STUD. 203 (2002) (proposing “anti-insurance” in contract and tort contexts); Steven P. Croley & Jon D. Hanson, *The Nonpecuniary Costs of Accidents: Pain-and-Suffering Damages in Tort Law*, 108 HARV. L. REV. 1786, 1821, 1883–84, 1893–95 (1995) (discussing “disinsurance”); Eric Kades, *Windfalls*, 108 YALE L.J. 1489, 1496–1500 (1999) (proposing “reverse insurance” for offloading the upside risk of windfalls); George L. Priest, *The Current Insurance Crisis and Modern Tort Law*, 96 YALE L.J. 1521, 1546 (1987) (noting a potential role for “reverse or anti-insurance”). As the textual example illustrates, there may be both practical and legal obstacles to such transactions. *See infra* Part III.

damages from anyone who may injure her in the future.<sup>2</sup> Two windows down, Finn, who fancies himself a financial wizard, is signing over his rights to all forms of social insurance in exchange for a lump sum; if Finn later qualifies for any of these benefits, AYOR will be entitled to claim them in Finn's place.<sup>3</sup>

As Derek, Carla, and Finn leave AYOR, pleasantly unburdened by unwanted insurance, they pass by AYOR's sister establishment "Not At Your Own Risk" (NAYOR). Opal, a veterinarian who specializes in canine ophthalmology, has just emerged from NAYOR with "livelihood insurance" that will protect her against falling returns in her chosen profession.<sup>4</sup> Nina, whom prediction markets give a 28 percent chance to win the Nobel Prize in chemistry this year, has assigned her potential winnings to NAYOR in exchange for a lump sum equal to a fraction of the prize amount.<sup>5</sup> And Rick, who hates crowds, has purchased a policy that will compensate him for higher-than-expected population increases over the next twenty years in the relatively isolated rural county where he spends his summers.<sup>6</sup>

AYOR and NAYOR are fictitious enterprises, but the core idea they embody—delinking risk or insurance from the products, services, or endeavors with which they usually come bundled—has attracted longstanding scholarly attention<sup>7</sup> and carries important real-world

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2. A robust literature examines the possibility of transacting over such "unmatured" tort claims—that is, claims based on injuries that have not yet occurred. *E.g.*, Robert Cooter, *Towards a Market in Unmatured Tort Claims*, 75 VA. L. REV. 383, 383–87 (1989); Marc J. Shukaitis, *A Market in Personal Injury Tort Claims*, 16 J. LEGAL STUD. 329, 334 (1987); Stephen D. Sugarman, *Doing Away with Tort Law*, 73 CALIF. L. REV. 555, 642–64 (1985); *see also* ROBERT NOZICK, *ANARCHY, STATE, AND UTOPIA* 77 (1974) (explaining how a victim's right to payment upon death could compensate him for risk impositions if "[w]hile alive, he can sell the right to this [postmortem compensation] payment, should it have to be made, to a company that purchases many such rights"); Madeline Morris, *The Structure of Entitlements*, 78 CORNELL L. REV. 822, 867 (1993) (illustrating the "[t]ransferred [c]laim rule" with an example in which "Arlene purchases from Gladys any future claims to monetary compensation for injury by Sheldon"); *infra* Part II.B.1.

3. For a discussion of the potential for, and impediments to, sales of social insurance, see *infra* Part II.D.3.

4. *See* ROBERT J. SHILLER, *THE NEW FINANCIAL ORDER: RISK IN THE 21ST CENTURY* 107–10 (2003) (describing one version of livelihood insurance); *see also infra* Part II.D.

5. *See infra* note 143 and accompanying text.

6. *See infra* note 178 and accompanying text.

7. In 1963, Kenneth Arrow posited the possibility of complete markets in risk, which would allow anyone "to bet, at fixed odds, any amount he wishes on the occurrence of any event which will affect his welfare in any way." KENNETH J. ARROW, *Insurance, Risk and Resource Allocation*, in *ESSAYS IN THE THEORY OF RISK-BEARING* 134, 138 (1971) (publishing a lecture originally delivered in the Yrjö Jahnsson lecture series in Helsinki in December 1963). The

implications.<sup>8</sup> Despite significant academic and entrepreneurial interest in expanding risk markets, however, the stakes that individuals hold in the outcomes of a wide range of activities and enterprises continue to follow deeply entrenched patterns. People are often unable to modify the risk positions specified by background legal and social arrangements, whether those positions produce unwanted coverage or unwanted exposure.<sup>9</sup> These rigidities, however, are not uniformly distributed. Not only are there striking differences between the risk-customization opportunities available to sophisticated financial actors and to individuals,<sup>10</sup> but the suite of risk-management tools to which ordinary households have access is marked by unexplained asymmetries and puzzling gaps. Examples are plentiful: it is routine to buy fire insurance but difficult to insure against the risk of fluctuations in the local housing market;<sup>11</sup> it is common to forgo life insurance on one's minor children but

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Arrow-Debreu general equilibrium model, developed in prior work by Arrow and by Gerard Debreu, contemplates complete markets in contingent claims. *E.g.*, DAVID A. MOSS, WHEN ALL ELSE FAILS: GOVERNMENT AS THE ULTIMATE RISK MANAGER 35, 345 n.36 (2002) (citing Kenneth J. Arrow, *The Role of Securities in the Optimal Allocation of Risk-Bearing*, 31 REV. ECON. STUD. 91 (1964), translated from the original 1953 French version; GERARD DEBREU, THEORY OF VALUE: AN AXIOMATIC ANALYSIS OF GENERAL EQUILIBRIUM, ch. 7 (1959)); *see also* Robert Hockett, *What Kinds of Stock Ownership Plans Should There Be? Of ESOPS, Other SOPS, and "Ownership Societies,"* 92 CORNELL L. REV. 865, 945–46 & n.332 (2007) (discussing the intellectual history of "Arrow securities," which pay out based on various states of the world and facilitate trading in risk).

8. For examples of actual and proposed mechanisms for rearranging risk, see *infra* Part II.

9. If people could shed risk and insurance with equal and perfect ease, law's initial allocations would not stand in the way of efficient reallocations. *See* R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960); *see also* ARROW, *supra* note 7, at 134–43 (discussing and analyzing incompleteness in insurance markets).

10. Derivatives are used by business entities to transfer risk in innumerable ways. PHELIM BOYLE & FEIDLIM BOYLE, DERIVATIVES: THE TOOLS THAT CHANGED FINANCE, at xi (2001). Indeed, former Chairman of the Federal Reserve Alan Greenspan explicitly described them as adding value by "unbundling risks." Alan Greenspan, Chairman, Fed. Reserve Bd., Remarks Before the Futures Industry Association: Financial Derivatives (Mar. 19, 1999), available at <http://www.federalreserve.gov/boarddocs/speeches/1999/19990319.htm>. To allude to such risk-shifting mechanisms in the current economic climate invites the reaction that risk-rearrangement innovations should be more tightly curtailed rather than made more broadly available. A discussion of the causes of the financial crisis is beyond the scope of this Article, but the difficulties have been broadly associated with the mispricing of risk. For a recent overview, see generally Susan M. Wachter, *The Ongoing Financial Upheaval: Understanding the Sources and Way Out*, 13 INT'L REAL EST. REV. 218 (2010). It is true that trading in risk is a condition precedent to mispricing it, but pricing flaws can be addressed without dismantling risk markets altogether.

11. Some explicit mechanisms do exist for hedging or insuring against housing-market risks, but these are not in widespread use and are unavailable as a practical matter to the great majority of households. *See infra* Part II.C.1.

impossible to shed the implicit insurance against their deaths that comes bundled with the tort system;<sup>12</sup> it is unremarkable to retain an entitlement to risky future income streams but unusual to explicitly sell off the right to receive them—and virtually unheard of to place bets that would double one’s return from them.<sup>13</sup>

The absence of explicit risk markets in a given domain does not mean that people are utterly unable to adjust their exposure to variance. The point, rather, is that they often can do so only by selecting or refusing a package that also contains some other good, service, activity, or endeavor. For example, a person who does not want to risk a loss in home value can rent instead.<sup>14</sup> An individual who does not want the high variance in income that characterizes a life as an artist can sell her labor to an employer pursuant to a long-term contract. Within limits, one can work at a riskier job in exchange for higher pay or consume cheaper products that come with greater health and safety risks. But outside of a few varieties of insurance, individuals have few opportunities to engage in free-standing or unbundled risk adjustments.

The distinction between bundled and unbundled risk transactions is not trivial. If risk levels cannot be independently adjusted, heterogeneous risk preferences can distort other consumption and activity choices, reduce welfare, or both. Certain kinds of private bargains capable of improving incentive structures are also precluded if risk cannot be traded separately.<sup>15</sup> More broadly, society’s policy menu is impoverished if individuals cannot undo risk allocations that are packaged within particular societal arrangements, or if they can only reduce exposure from a given baseline but not increase it.

Risk innovation always attempts a finer-grained unbundling of risk from the products, services, conditions, or activities in which it is

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12. For discussion of why people might be interested in shedding this coverage, see *infra* text accompanying notes 34–35 and *infra* text accompanying notes 100–02102.

13. The conceptual case for such a bet is set out in Cooter & Porat, *supra* note 1, at 218–21.

14. Similarly, one can hedge against future price increases in a given local housing market by actually buying a house in that market or in a correlated market. See Todd Sinai & Nicholas S. Souleles, *Owner-Occupied Housing as a Hedge Against Rent Risk*, 120 Q.J. ECON. 763 (2005).

15. For example, “anti-insurance” contracts that place the risk of loss on both parties to an interaction require the participation of a third party that can enter into transactions over risk. See Cooter & Porat, *supra* note 1, at 204–05 (describing these contracts, which would “requir[e] the promisor to pay damages to a third party, instead of the promisee, in the event of nonperformance”); *infra* Part I.C.

embedded.<sup>16</sup> Once unmoored, risk can be shifted in virtually unlimited ways, allowing parties to move freely from risk to coverage (insurance) and from coverage to risk (reverse insurance). Most of the existing work in this area has focused on the merits of revised risk allocations within particular contexts.<sup>17</sup> This Article takes a different tack by examining questions surrounding risk unbundling itself—the costs and benefits of allowing people to reverse default risk arrangements selectively.<sup>18</sup> My analysis focuses primarily on risks routinely encountered by individuals and households—contexts where stand-alone risk-reallocation opportunities are often absent or constrained, and cognitive and social considerations loom large.<sup>19</sup> As both a regulator and an important direct provider of risk-pooling services, government has an interest in fostering the set of risk-modification tools that will most cost-effectively achieve its policy ends. But it is not obvious whether this means prohibiting unbundled risk transactions, allowing market-based moves away from default risk allocations (with or without additional hurdles built in), subsidizing the development of new markets in risk, or directly providing risk-customization opportunities. As scholarly and entrepreneurial interest in risk innovations continues to intensify, these questions will become increasingly pressing. This Article provides a framework for answering them.

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16. Risk innovation is not always framed in these terms, but the unbundling characterization has been explicitly used by, for example, Greenspan, *supra* note 10.

17. See *infra* sources cited Part II.B.1, on the sale of unmatured tort claims, *infra* Part II.C, on the rearrangement of housing-market risk, and *infra* Part II.D.2, on risk shifting for income and careers.

18. Perhaps the best-developed body of literature addressing the ability to undo background arrangements is in the area of contract default rules. See Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 *YALE L.J.* 87 (1989); Omri Ben-Shahar & John A.E. Pottow, *On the Stickiness of Default Rules*, 33 *FLA. ST. U. L. REV.* 651 (2006); Russell Korobkin, *The Status Quo Bias and Contract Default Rules*, 83 *CORNELL L. REV.* 608 (1998). Although relevant to the present discussion—contracts do allocate risk, among other things—a gap remains between this literature and broader questions of risk reversibility among parties who are not otherwise in contractual relationships with each other.

19. The possibility that people may act irrationally in making insurance decisions, and that framing and defaults might play a role, has received significant attention. See, e.g., Eric J. Johnson, John Hershey, Jacqueline Meszaros & Howard Kunreuther, *Framing, Probability Distortions, and Insurance Decisions*, 7 *J. RISK & UNCERTAINTY* 35 (1993); Howard Kunreuther & Mark Pauly, *Insurance Decision-Making and Market Behavior*, 1 *FOUND. & TRENDS IN MICROECON.* 63, 88–97 (2005); Daniel Schwarcz, *Regulating Consumer Demand in Insurance Markets*, 3 *ERASMUS L. REV.* 23, 25–30 (2010); Cass R. Sunstein, *Switching the Default Rule*, 77 *N.Y.U. L. REV.* 106, 114–15 (2002).

I do not make a normative case here for giving people vastly expanded access to risk-rearrangement opportunities, nor do I advocate for particular additions to the risk menu. Instead, the project is an analytic one that classifies possible risk moves and probes their logical and practical similarities and differences. Part of the inquiry involves examining risk-bearing patterns and asking whether the lines that currently separate the available from the unavailable, the permissible from the forbidden, and the routine from the rare track meaningful normative distinctions, or whether they are instead artifacts of tradition or framing. For example, reverse-insurance schemes sound quite exotic, but they do nothing more than reproduce the risk allocation that would have prevailed in the absence of some insurance mechanism, whether explicit or embedded in law or policy.<sup>20</sup>

Thinking about risk customization as a distinct issue also allows us to sharpen, refine, and differentiate among objections and obstacles. Arguments about the merits or sustainability of a particular risk-allocation endstate, for instance, carry different implications than do arguments about the ease with which customization can be accomplished or the desirability of preserving homogeneity in risk arrangements. Likewise, some concerns about risk markets center on features of risk reallocation that are not essential to the reallocation itself and that are therefore amenable to design-arounds. For example, the worry that people will sell unmatured tort claims out of a myopic desire for an immediate lump of cash could be addressed by restructuring the time and manner in which the expected value equivalent of a potential tort claim is delivered.<sup>21</sup> Here, the real objection pertains not to the unbundling of risk from underlying tort arrangements but rather to the failure to also unbundle risk from certain malleable payment features.

Beyond identifying functional equivalences and spurious connections, viewing risk as a potentially segregable element opens the door to untapped design innovations. For example, because reverse-insurance mechanisms are virtually unknown, it is typical to compare mandatory insurance regimes with voluntary, opt-in regimes while ignoring the possibility of an opt-out regime—despite the

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20. For an overview of implicit insurance provided through various laws and benefit programs, see MOSS, *supra* note 7, at 314–15 & tbl.10.2.

21. *See infra* Part IV.B.1.



potential advantages of the latter alternative.<sup>22</sup> Although I will leave to others whether such redesigns would ultimately prove normatively attractive, I raise them here because they offer underexplored approaches that appear to be broadly consistent with some of the policy goals that have been articulated in discussions of risk and insurance.

This Article proceeds in four Parts. After briefly reviewing why people might want to take on or shed risk, Part I presents a taxonomy of risk-reallocating transactions. I refer to these moves collectively as risk/expected value exchanges (REVEs). Part II surveys REVEs that presently exist outside traditional insurance markets, as well as gaps where new REVEs might emerge. Part III examines some of the reasons that risk-reallocation opportunities are currently blocked or missing and considers whether greater risk customization would advance efficiency. Part IV synthesizes and builds on the analysis in the previous Parts. After suggesting that existing gaps and asymmetries in opportunities to alter risk positions do not map well onto plausible normative distinctions, I show how minor design tweaks might counter identified problems with certain kinds of REVEs. I close by examining new policy alternatives that emerge from a focus on society's dual tasks of setting default risk allocations and deciding how sticky those risk allocations will be.<sup>23</sup>

## I. REARRANGING RISK: WHY AND HOW

### A. *Why Insure or Uninsure?*

To frame the analysis that follows, it is first helpful to ask why rearranging risk might be worthwhile from either a societal or private perspective. The standard economic account emphasizes two considerations. First, if risk is shifted to a party who is in a better position to reduce the odds of a negative occurrence or to increase the odds of a positive occurrence, the shift can improve the mix of

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22. For a discussion of the significance of default selections, see *infra* Part IV.C.

23. For a discussion of the stickiness inherent in default selections, see *infra* Part IV.C.1. For ways to adjust the level of stickiness, see *infra* Part IV.D. Cf. Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089, 1090–92 (1972) (noting that society must make two decisions about entitlements—who will be granted the entitlement and how it will be protected).

bad and good events.<sup>24</sup> A corollary of this point is that removing risk from a party who is in a good position to control events can lead to losses due to moral hazard.<sup>25</sup> This line of analysis emphasizes the beneficial incentive effects of exposure or the detrimental incentive effects of nonexposure.<sup>26</sup>

Second, efficiency gains can be achieved if risk-averse individuals transfer risk to parties who have a greater ability to diversify, spread, or pool it, or who are simply less averse to risk.<sup>27</sup> Risk aversion, in turn, is typically explained by reference to the diminishing marginal utility of money,<sup>28</sup> which would cause people to prefer small but certain monetary gains and losses over larger but less likely gains and losses that have the same expected values.<sup>29</sup> Scholars have characterized insurance as a device for moving money from states of the world in which it produces lower marginal utility to ones in which

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24. This point is associated with Guido Calabresi's notion of the "cheapest cost avoider." See CALABRESI, *supra* note 1, at 136–38; see also MOSS, *supra* note 7, at 232–34 (discussing "efficient risk shifting").

25. See *infra* Part III.A.1.

26. Significantly, this set of considerations comes into play only when it is impossible to fully disaggregate risk from factors under the control of a particular party. See *infra* note 186 and accompanying text.

27. See MOSS, *supra* note 7, at 33–35 (discussing reasons that trades in risk could produce gains); see also Johnson et al., *supra* note 19, at 36 (recounting the "standard story" of insurance as risk shifting, in which "risk-averse individuals confronted with sizable hazards will pay a more diversified insurer to bear the risk").

28. The diminishing marginal utility of money captures the intuition that an additional dollar means more to a person with a small stock of wealth than it does to a wealthy person. RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 11 (7th ed. 2007).

29. An expected value is the number one gets by multiplying the probability of each outcome by its magnitude and adding the results. People who are risk averse care about the variance in outcomes associated with a given gamble, not just its expected value. See, e.g., JONATHAN BARON, *THINKING AND DECIDING* 508 (3d ed. 2000) ("Your disutility for losing \$100,000 is, probably, more than 100 times your disutility of losing \$1,000."); Croley & Hanson, *supra* note 1, at 1793–95 (explaining risk aversion in terms of the diminishing marginal utility of money). Work pioneered by Daniel Kahneman and Amos Tversky raises important challenges to this account by finding that people show aversion to losses (from a given reference point), rather than to risk as such, and that they are disproportionately sensitive to small losses from that reference point. Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 *ECONOMETRICA* 263, 268–69 (1979); Amos Tversky & Daniel Kahneman, *The Framing of Decisions and the Psychology of Choice*, 211 *SCIENCE* 453, 457–58 (1981); see also Paul Slovic, Baruch Fischhoff, Sarah Lichtenstein, Bernard Corrigan & Barbara Combs, *Preference for Insuring Against Probable Small Losses: Insurance Implications*, in PAUL SLOVIC, *THE PERCEPTION OF RISK* 51, 67–70 (Ragnar E. Löfstedt ed., 2000) (discussing the insurance implications of Kahneman and Tversky's findings).

it produces greater marginal utility.<sup>30</sup> A utility-maximizing person would continue this process until—and only until—the marginal utilities are equalized across her various possible futures.<sup>31</sup> The intuition mirrors that for savings decisions. Setting aside funds makes sense if one expects to have greater needs or lower income in the future, but beyond a certain point, additional savings would harm one’s current self more than they would help one’s future self. Likewise, insurance makes sense when one will have greater needs or lower income if an injury or loss occurs, but at some point that added value will be outweighed by the sacrifice one’s uninjured self would have to bear to pay the insurance premium. In Richard Zeckhauser’s words, “The rule comes down to spending your money where it does the most good.”<sup>32</sup>

A focus on the diminishing marginal utility of money thus reveals not only why people might buy insurance but also why they might want to refrain from doing so. Money produces greater marginal utility after an event has happened than it did before only if the event either directly reduces one’s monetary resources, such as one’s earning capacity, or otherwise changes one’s need for or utility from money.<sup>33</sup> Some of the most devastating losses that people experience—the death of a minor child, or severe pain and suffering—typically do not produce monetary losses and are not usually thought to increase the marginal utility of money; in fact, they may do the opposite.<sup>34</sup> In these cases, moving money from the pre-loss state of the world to the post-loss state would reduce utility. The same reasoning explains why people might at times wish to “sell” existing

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30. *E.g.*, Richard J. Zeckhauser, *Coverage for Catastrophic Illness*, 21 PUB. POL’Y 149, 156–57 (1973).

31. *See, e.g.*, Croley & Hanson, *supra* note 1, at 1795 & diagram 2; Priest, *supra* note 1, at 1546; Zeckhauser, *supra* note 30, at 156.

32. Zeckhauser, *supra* note 30, at 155.

33. Cooter, *supra* note 2, at 388–92; David Friedman, *What Is ‘Fair Compensation’ for Death or Injury?*, 2 INT’L REV. L. & ECON. 81, 85–87 (1982); *see also* Croley & Hanson, *supra* note 1, at 1797–1802 (providing an overview of the conventional view on this issue).

34. An extensive literature has emphasized these basic points. *E.g.*, Cooter, *supra* note 2, at 389; Croley & Hanson, *supra* note 1, at 1797–1802; Priest, *supra* note 1, at 1546–47; Alan Schwartz, *Proposals for Products Liability Reform: A Theoretical Synthesis*, 97 YALE L.J. 353, 362–64 (1988); W. Kip Viscusi & William N. Evans, *Utility Functions That Depend on Health Status: Estimates and Economic Implications*, 80 AM. ECON. REV. 353, 371–72 (1990). “Pain and suffering” is used here to refer to those sources of physical disutility that cannot be remediated by additional medical care or medications; to the extent such remediation can be purchased with money, the point in the text would not hold.

insurance (say, from a baseline of tort coverage) by accepting exposure to risk in exchange for a payment.<sup>35</sup>

These points, which have been marshaled in support of various tort reform proposals,<sup>36</sup> are open to a number of caveats and qualifications. Perhaps most foundationally, it is no more self-evident that individuals should wish to maximize utility over an entire lifetime and across all possible states of the world than it is that societies should want to maximize utility across their populations.<sup>37</sup> Societies might wish to ensure that all their members achieve some baseline of well-being, even if it means that total society-wide utility falls; likewise, individuals might care more about not sinking below a particular absolute level of utility at any point in time than about maximizing lifetime utility.<sup>38</sup> Hence, even if money would not bring nearly as much marginal utility in the state of the world in which a given loss has occurred, insurance might still be valued for its ability to help bring utility up to some minimum absolute level.

Even if lifetime utility maximization is the goal, it is possible that changes in total utility levels affect the marginal utility of money, independent of wealth.<sup>39</sup> For example, the possibility that people derive “consolation” utility from the fact of being compensated after a loss, quite apart from the utility that the money itself will produce,

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35. See, e.g., Friedman, *supra* note 33, at 84; Priest, *supra* note 1, at 1547; see also Croley & Hanson, *supra* note 1, at 1799–1802 & n.47 (discussing the conventional wisdom on this point).

36. For a survey of reforms premised on this analysis, see Croley & Hanson, *supra* note 1, at 1804–12.

37. See *id.* at 1832.

38. See *id.* (“[J]ust as egalitarian considerations may justify curbing utilitarian goals in the interpersonal world—entitling noneconomically disadvantaged citizens to redistribution even though such transfers reduce the sum of society’s utility, wealth, or resources because such transfers may go to those with a below-average marginal utility of resources—so too may equalizing considerations curb maximizing goals in the intrapersonal world.”); see also Schwarcz, *supra* note 19, at 38 (discussing the possibility that people may insure against nonpecuniary losses to equalize utility across states of the world). As Steven Croley and Jon Hanson point out, the analogy between the intrapersonal and interpersonal case is especially apt given that the circumstances that people might occupy in certain insurable states of the world (such as having a severe disability) are precisely those that are often raised in philosophical challenges to utilitarianism. Croley & Hanson, *supra* note 1, at 1825 n.125; see also Amartya Sen, *Equality of What?*, in 1 THE TANNER LECTURES ON HUMAN VALUES 195, 203–04 (Sterling M. McMurrin ed., 1980) (discussing an example in which a “pleasure-wizard” gets much more utility out of money than a person with a disability); David A. Weisbach, *Toward a New Approach to Disability Law*, 2009 U. CHI. LEGAL F. 47, 71–73 (summarizing literature on welfarism and explaining how disabilities would factor into the analysis).

39. See Croley & Hanson, *supra* note 1, at 1813–22; Kunreuther & Pauly, *supra* note 19, at 83–84.

adds an interesting wrinkle.<sup>40</sup> Moreover, the marginal utility of money may not always smoothly decline across all wealth ranges; there may be discontinuities or even wealth ranges in which the marginal utility of money is increasing.<sup>41</sup> For example, a person who feels her life would utterly change if only she could purchase some indivisible good (a new Ferrari, for example) might be risk seeking as to a bet that would finance that purchase.<sup>42</sup> Individual differences along these and other dimensions are sources of heterogeneity that may prove policy relevant.<sup>43</sup>

As this discussion suggests, there are a variety of reasons that people might desire more coverage or, alternatively, more exposure in particular contexts. To get a sense of what is at stake, it is helpful to note three broad sets of reasons why risk customization might be valuable. First, it can enhance welfare by making available new combinations of activities, incentives, and risk.<sup>44</sup> A second set of benefits flows from the idea that individuals, as autonomous agents, should be empowered to select the risk arrangements they prefer—as

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40. See Christopher K. Hsee & Howard C. Kunreuther, *The Affection Effect in Insurance Decisions*, 20 J. RISK & UNCERTAINTY 141, 145–46 (2000) (presenting the “consolation hypothesis” to explain experimental results in which people were willing to devote more time to obtain a fixed amount of compensation for a damaged object when asked to imagine that they loved the object); see also Kunreuther & Pauly, *supra* note 19, at 84, 93 (discussing consolation’s role in insurance claims behavior and its relationship to the notion of purchasing insurance “for peace of mind” (emphasis omitted)); Schwarcz, *supra* note 19, at 38 (discussing the consolation rationale for insurance against nonpecuniary losses).

41. The Friedman-Savage utility curve, which was developed to explain apparent anomalies in risk-related behavior, embodies the hypothesis that there are intervals within which the marginal utility of money is increasing. See Milton Friedman & L.J. Savage, *The Utility Analysis of Choices Involving Risk*, 56 J. POL. ECON. 279, 298–99 (1948); see also CALABRESI, *supra* note 1, at 39–40; CHARLES KARELIS, *THE PERSISTENCE OF POVERTY* 67–81, 127–29 (2007).

42. For a discussion of similar explanations for lottery play, see *infra* note 180. Milton Friedman and L.J. Savage likewise suggested one “possible interpretation” of seemingly anomalous risk behavior: that people experience diminishing marginal utility when money merely elevates them within their present social class but increasing marginal utility when money moves them to a new social level. Friedman & Savage, *supra* note 41, at 298–99. For related arguments, see, for example, CALABRESI, *supra* note 1, at 39–40, and KARELIS, *supra* note 41, at 67–81, 127–29.

43. For example, studies suggest that people seem to simply vary in their tolerance and taste for risk. See *infra* note 289. Moreover, people’s attitudes toward risk and insurance may be heavily dependent on social norms and past experiences, as well as on framing and other cognitive factors. See *infra* Part III.A.3–4.

44. For examples of the forms these new combinations might take, as well as a number of existing models that illustrate the range of possibilities, see *infra* Part II.

long as doing so does not impose costs on others.<sup>45</sup> Third, unbundling risk could produce wider societal benefits by enhancing policy flexibility or simply by making alternative arrangements more salient.<sup>46</sup> That greater risk customization *could* bring these benefits, however, is no guarantee that such benefits would actually be realized. Moreover, there are important reasons why society cares about the risk arrangements people choose—including the possibility that those arrangements could visit harm on other people or on individuals' own future selves.<sup>47</sup> Yet the potential gains are large enough to warrant a careful examination of existing and missing opportunities for risk rearrangement.

### B. REVEs: A Taxonomy

Now that we have some idea why people might want to engage in transactions to reallocate risk, we can begin to categorize those transactions. Helpful in this regard is the generic, umbrella concept of a risk/expected value exchange (REVE), which encompasses not only insurance but many other kinds of risk transactions, including reverse insurance. REVEs are a theoretical possibility whenever there is variance in future states of the world<sup>48</sup> and enough information about the distribution of those states to calculate an expected value.<sup>49</sup> In the simplest REVE, one party receives or pays the expected value of a set of possible future states of the world,<sup>50</sup> while the other party accepts

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45. See, e.g., Cooter, *supra* note 2, at 387 (“A market for [unmatured tort claims] can be defended solely because it gives people more options.”). Robert Cooter takes this idea of enhanced choice only so far, however, as his proposal would require those selling their claims to obtain first-party insurance. *Id.* Concerns about externalities (as well as internalities) may play a role in limiting choice in this context. See *infra* Part III.B.

46. See *infra* Part IV. In some cases, allowing new risk transactions might facilitate societal learning by revealing the degree to which existing default risk arrangements diverge from (or, alternatively, track) people's preferred arrangements. The result might be a new default or perhaps even a new (or restored) mandatory arrangement.

47. See *infra* Part III.B.

48. Although risk is colloquially associated primarily with negative events, its economic meaning refers to variance, whether positive or negative. See, e.g., Kades, *supra* note 1, at 1496 & n.17.

49. An important complication inheres in the possibility that the transaction itself, by altering who bears the risk, may also alter the expected value. This point relates to moral hazard, taken up below. See *infra* Part III.A.1. I thank Nadia Nasser-Ghodsi for comments on this point. There are also some practical limits on the availability of REVEs. For example, insurance will not be a realistic possibility if the event in question will produce widespread correlated losses, as in the case of a nuclear war. Priest, *supra* note 1, at 1540.

50. The most familiar approach would be for the first party to pay or receive the expected value upfront, regardless of what state of the world will actually obtain, as with ordinary

the loss or gain, if any, associated with the state of the world that actually obtains (or reconveys the bundle to someone else who will do so). Of course, real-world REVEs involve an amount added to (or deducted from) the expected value for administrative costs and profits, but that factor can be safely omitted from this stage of the analysis.<sup>51</sup>

A more foundational wrinkle is that even the most basic and familiar REVE, insurance, often does not involve literally offloading potential losses (which may be nonpecuniary in nature); instead, parties contract for a set of monetary payouts that will be triggered by particular losses.<sup>52</sup> To keep the analysis simple, imagine that a single event, *R*, will occur with some known probability—the cosmic equivalent of drawing a red ball from an urn.<sup>53</sup> *R* may already generate consequences for an individual, Ida. These consequences could be given by nature (as where *R* is Ida's broken arm), the product of embedded legal arrangements (as where *R* is someone else's broken arm for which tort law makes Ida liable), or both (as where *R* delivers Ida both a broken arm and some amount of compensation).<sup>54</sup> Or *R* might be some event that currently carries no consequences for Ida, such as the outcome of a horse race on which Ida has not yet placed any bets. In any of these situations, Ida might prefer not to passively accept the consequences (or lack thereof) that *R* produces for her in the baseline situation. She might wish to buy or

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insurance. Variations would be possible in which an expected value is paid or received only in those states of the world in which a given event does not occur. *See, e.g.,* Friedman, *supra* note 33, at 84. This alternative would fit with an approach in which the expected value payment is transferred ex post, after the risk in question has been resolved; because such an ex post payment will not be paid in the state of the world in which the risky event occurs, the expected value payment will be correspondingly higher. *See* Michael B. Abramowicz & Ian Ayres, *Compensating Commitments: The Law and Economics of Commitment Bonds that Compensate for the Possibility of Forfeiture* 8 (May 20, 2010) (unpublished manuscript), available at <http://ssrn.com/abstract=1612396> (describing an “ex post implementation” approach that would work in this way). *See also* Part IV.B.1, *infra*, on payment timing.

51. These costs may, however, bear on the choice of a default risk allocation. *See infra* Part IV.C.1.

52. As scholars have noted, insurers can only pay claims using money. *E.g.,* Croley & Hanson, *supra* note 1, at 1797; Priest, *supra* note 1, at 1546. An intriguing question is whether this must inevitably be the case. In this connection, consider families and religious groups, which not only pool financial risk but presumably often make in-kind payments of care and concern in response to losses. I thank Alison Morantz for raising this issue.

53. Similar hypotheticals involving draws from urns have been given to participants in research on risk and insurance. *See* Slovic et al., *supra* note 29, at 54–55.

54. *R* could also be an event that will carry in-kind consequences that are positive for Ida, such as favorable weather.

sell “tickets” that attach new consequences to, or remove existing consequences from, *R*’s occurrence.<sup>55</sup>

If Ida would like to attach a positive consequence, such as a payout of money, to *R*’s occurrence, or would like to detach a negative consequence, such as liability to pay someone else money, from *R*’s occurrence, she must pay the expected value of that consequence.<sup>56</sup> If, on the other hand, Ida would like to detach a positive consequence from *R*’s occurrence, such as money that would ordinarily come to her when *R* happens, or attach a negative consequence to *R*’s occurrence, such as liability to pay someone else, she will be entitled to receive the expected value equivalent of the consequence.<sup>57</sup> Either way, she is engaging in a REVE—an exchange of expected value for risk.

From Ida’s perspective, then, there are “event-enhancing REVEs” that cost her a fixed amount of money but improve the consequences tied to a probabilistic event like *R* (whether by adding a positive consequence or detaching a negative one) and “event-detracting REVEs” that deliver a sum certain but worsen the consequences for her of a risky event like *R* (whether by tying her future liability to *R* or removing some positive consequence that was previously bundled with *R*). Of course, the party on the other side of the monetary transaction experiences a converse change in the consequences of event *R*. Thus, the terms “event-enhancing” and “event-detracting” refer to two sides of the same transaction, not to distinct transaction types.<sup>58</sup>

1. *Enhancements and Detractions.* It is easy to tell whether Ida is paying out dollars or receiving dollars, and hence transparent whether

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55. HOWARD KUNREUTHER, RALPH GINSBERG, LOUIS MILLER, PHILIP SAGI, PAUL SLOVIC, BRADLEY BORKAN & NORMAN KATZ, *DISASTER INSURANCE PROTECTION: PUBLIC POLICY LESSONS* 47 (1978) (describing insurance and similar devices as “tickets that can be cashed in for money if certain states of nature occur”).

56. Suppose there is a 10 percent chance of *R*. Under conditions of perfect competition and zero administrative costs, Ida could pay \$100 for a ticket that pays out \$1,000 if *R* happens (and \$0 if it does not happen), or that, alternatively, relieves her of \$1,000 of liability associated with the occurrence of *R*.

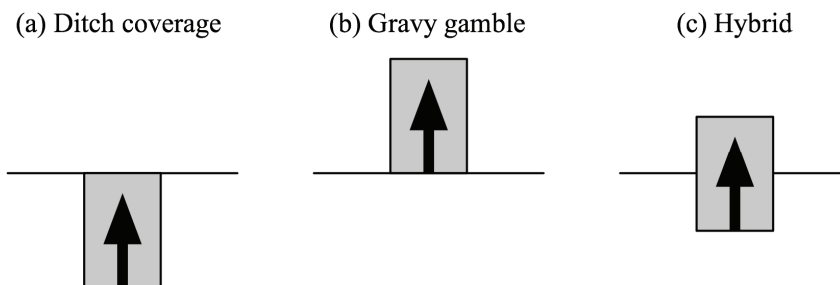
57. Continuing with the example in *supra* note 56, Ida might receive \$100 in exchange for issuing a ticket that entitles its bearer to receive \$1,000 (from Ida, or from whoever would have previously had to pay Ida) upon the occurrence of *R*.

58. It is also important to clarify that the terms “event-enhancing” and “event-detracting” (and the associated figures in this Section) refer only to the alteration in consequences associated with event *R*, not to the expected value payment that was paid or received to bring it about.



the REVE is (from Ida's perspective) event-enhancing or event-detracting. But the direction in which the REVE payment flows is not the only important dimension along which transactions can be classified. Suppose Ida makes an expected value payment to improve the consequences attaching to event *R*. Depending on what *R* represents, that improvement might take any of the forms schematically shown in Figure 1.<sup>59</sup>

Figure 1. Event Enhancements



First, as shown in Figure 1(a), Ida might be purchasing protection against the risk of loss from her current baseline, as with fire insurance. Her expected value payment gives her the right to receive a sum that will offset a loss delivered up by nature; the payoff will fill in a ditch that this event will leave in her wealth.<sup>60</sup> Second, as shown in Figure 1(b), Ida might make an expected value payment to buy a chance at an upside gain, as with a lottery ticket.<sup>61</sup> Third, as shown in Figure 1(c), Ida might purchase a blended product with her expected value payment, as implicitly occurs under a products liability regime featuring punitive damages. As commentators have noted, punitive damage multipliers effectively force consumers to purchase lottery tickets along with their products or services.<sup>62</sup> In such cases,

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59. The possibilities depicted in the figures in this Section are not exhaustive. In addition to many intermediate cases between those shown, REVEs might intensify rather than offset above- or below-baseline impacts already associated with *R*. See Cooter & Porat, *supra* note 1, at 218–21 (explaining how anti-insurance contracts could allow two parties to a joint endeavor to raise the stakes they collectively hold in it); *infra* note 153 and accompanying text.

60. What constitutes a “ditch” in this context is not always straightforward. See *infra* text accompanying notes 68–70.

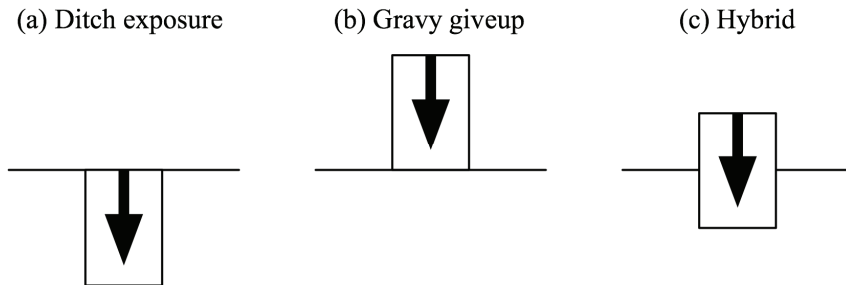
61. Such a pure gamble falls somewhat outside the core concerns of this Article, but it offers an intuitive image of an above-baseline REVE.

62. See Richard Craswell, *Deterrence and Damages: The Multiplier Principle and Its Alternatives*, 97 MICH. L. REV. 2185, 2230 (1999) (“In effect, the introduction of a multiplier

the expected value payment made as part of a consumer's purchase entitles her both to payments that will "backfill" her injuries and to a chance at additional "gravy."

A similar range of possibilities exists when Ida receives an expected value payment in exchange for accepting unfavorable consequences if  $R$  occurs. As shown in Figure 2, this trade may leave her vulnerable to an unfilled ditch, as shown in 2(a), may merely expose her to the loss of a possible gain, as in 2(b), or may do a bit of both, as shown in 2(c).

Figure 2. *Event Detractions*



Given the conceptual symmetry between the event-enhancing and event-detracting sides of REVEs, it is noteworthy that individual consumers and households have limited opportunities to engage in explicit event-detracting REVEs,<sup>63</sup> even though explicit event-enhancing REVEs (insurance and lotteries) are familiar features of the economic landscape. The explanation cannot be that society is simply unwilling to allow people to be exposed to ditches. People are allowed to remain uninsured against many risks that could dramatically reduce their well-being. Indeed, they are routinely

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turns the liability component of the price into a lottery ticket, with a bigger price up front supporting the chance of a bigger payoff at the end.”); see also RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 211–12 (2008) (“[P]atients are effectively forced to buy a kind of lottery ticket, one that might be worth anything from millions of dollars to nothing . . .”). Thaler and Sunstein’s use of the lottery metaphor includes a focus on erratic jury verdicts and variability in awards and hence has been criticized for suggesting the adjudication process is a random one. Tom Baker & Timothy D. Lytton, *Essay, Allowing Patients to Waive the Right to Sue for Medical Malpractice: A Response to Thaler and Sunstein*, 104 *NW. U. L. REV.* 233, 248–49 (2010). But the metaphor, as I use it here, would apply to punitive damages even if the tort system operated with perfect accuracy and consistency; such awards would still attach a positive outcome to a stochastic event—the injury itself—in a manner akin to tacking a lottery payout onto event  $R$ .

63. For some exceptions, see *infra* Part II.

allowed to engage in transactions that contain event-detracting REVEs embedded within them.<sup>64</sup> As Figure 2 illustrates, moreover, event-detracting REVEs can involve selling chances at lucky gains, as well as selling coverage of unlucky losses.<sup>65</sup> This last point is taxonomically crucial and points to a second way of dividing REVEs.

2. *Upside and Downside Risk.* As Figures 1 and 2 illustrate, knowing the direction in which the expected value payment flows reveals only whether a given REVE is event-enhancing or event-detracting from a given individual's perspective; it does not indicate whether that REVE moves the individual above or below a given baseline. For the same reason, event-detracting REVEs do not necessarily increase risk. One event-detracting REVE may increase the variance in possible outcomes by letting a ditch stand unfilled in one state of the world, but another may instead reduce the variance in possible outcomes by eliminating the chance of a lucky gain. Similarly, event-enhancing REVEs may either increase variance by boosting consequences from a baseline state of the world or decrease variance by delivering a payment that offsets a potential loss.

Of course, the baselines depicted in Figures 1 and 2 are malleable, and the question of whether some event leaves one with a ditch or merely fails to generate gravy is open to interpretation and sensitive to framing.<sup>66</sup> For example, suppose a worker purchases wage-replacement insurance that will pay out at an escalating annual rate designed to match her anticipated future wage trajectory in the event that she loses her capacity to continue in her present job. Has this worker insured against a loss or gambled for a gain? The answer depends on whether the relevant baseline features no future salary payments at all, salary payments that continue indefinitely at present

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64. This occurs, for example, whenever an individual accepts a less safe product or service at a lower price, takes a less safe job at a higher wage, or gives up a variable future income stream in exchange for a more certain one through an employment contract.

65. See Kades, *supra* note 1, at 1496–1501 (examining the potential for the ex ante transfer of chances at windfalls through reverse insurance or a societal equivalent). Governmental mandates can produce the same risk endstate as a voluntary transaction to cede upside chances. See, e.g., RICHARD A. EPSTEIN, *CASES AND MATERIALS ON TORTS* 915 (9th ed. 2008) (describing “split-award” statutes that require some fraction of punitive-damages awards to be paid to the state); Christine Hurt, *The Windfall Myth*, 8 *GEO. J.L. & PUB. POL’Y* 339, 342 n.12 (2010) (discussing Georgia’s statutory provision reassigning 75 percent of punitive-damage awards to the state).

66. For a classic exploration of framing, see Tversky & Kahneman, *supra* note 29.

levels, salary payments that escalate over time in accordance with the worker's projected earning profile, or some other earnings pattern.<sup>67</sup>

Another ambiguity is whether baseline states (and moves from them) should be defined in terms of utility or wealth. Not all losses that negatively affect utility negatively affect wealth.<sup>68</sup> Choosing the right metric requires deciding why the distinction between upside and downside risk matters. As discussed below, low wealth levels may lead to claims on societal resources, making unremediated "money ditches" a matter of particular concern.<sup>69</sup> Conversely, because standard economic theory dictates that it is irrational to insure against utility drops that do not increase the marginal utility of money,<sup>70</sup> society may justifiably pay less attention to utility ditches. As a descriptive matter, however, even utility ditches that do not increase the marginal utility of money may be framed as losses against which protection is sought by risk-averse individuals, whether for consolation reasons or otherwise.<sup>71</sup>

Despite these complications, it remains helpful to add a second distinction that crosscuts the event-enhancing/event-detracting dichotomy outlined above. Some REVEs deal in downside or ditch risk, like those shown in Figures 1(a) and 2(a), and other REVEs deal in upside or gravy risk, like those shown in Figures 1(b) and 2(b). Putting the two distinctions together as shown in Figure 3 reveals that an individual can use REVEs to engage in four basic moves.<sup>72</sup>

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67. One complicating factor is the likelihood that earning the projected income in the uninjured state requires work that is time consuming and potentially aversive, as well as other expenditures to support the working lifestyle.

68. See, e.g., Cooter, *supra* note 2, at 388–89 (distinguishing "wealth impacting" from "wealth neutral" losses); *supra* text accompanying notes 33–35.

69. See *infra* Part III.B.1.

70. See, e.g., Zeckhauser, *supra* note 30, at 157 (stating that insuring against situations in which utility is low "is desirable only if the marginal utility of money is higher in the low-utility situation"); sources cited *supra* notes 33–35.

71. For discussion of such motivations, see *supra* text accompanying notes 37–40. The relevance of cognitive framing to decisionmaking is explored in, for example, Tversky & Kahneman, *supra* note 29.

72. The examples provided in the cells of Figure 3 are tailored to fit an individual's perspective, but parties taking the other sides of these REVEs (insurers, reverse insurers, manufacturers, and so on) also engage in these same basic moves.

Figure 3. Four Basic Moves (Individual's Perspective)

Risk Type Expected Value (EV) Payment	Downside “Ditch” Risk	Upside “Gravy” Risk
<b>Individual Pays EV</b>  <b>Event-Enhancing</b>	<b>I. Ditch Coverage</b>  Buying a Claim to Coverage of Losses (e.g., Insurance)  Reduces Downside Risk	<b>III. Gravy Gamble</b>  Buying a Chance at a Gain (e.g., Lottery Ticket)  Increases Upside Risk
<b>Individual Receives EV</b>  <b>Event-Detracting</b>	<b>II. Ditch Exposure</b>  Selling One's Claim to Coverage of Losses (e.g., Unmatured Tort Claim)  Increases Downside Risk	<b>IV. Gravy Giveup</b>  Selling One's Chance at a Gain (e.g., Nobel Prize Winnings)  Reduces Upside Risk

The four intuitive moves shown in Figure 3 map onto the buying and writing of call and put options<sup>73</sup>—transactions that are routinely and symmetrically used by business entities to rearrange risk.<sup>74</sup> Although these same four logical possibilities are theoretically open to individuals, actual risk-trading opportunities are far more limited. Individuals regularly shed downside risk by purchasing ditch coverage like insurance (cell I), and take on upside risk by engaging in gravy gambles like buying lottery tickets (cell III).<sup>75</sup> Less familiarly, an individual who is already covered by insurance or by societal arrangements that spread risk might engage in a ditch-exposure transaction (cell II)—receiving money in exchange for accepting exposure to those risks.<sup>76</sup> Likewise, an individual might engage in a

73. Specifically, cell I equates to buying a put option, cell III equates to buying a call option, cell II equates to writing a put option, and cell IV equates to writing a call option. A similar four-square depiction of calls and puts (with layout differences) appears in ROBERT TOMPKINS, *OPTIONS EXPLAINED* 14 tbl.1.2 (1991). I thank Michael Knoll and other participants at Columbia's law and economics workshop for discussions on these parallels.

74. I do not mean to suggest that calls and puts enable entities to perfectly hedge all risks in all contexts, only that they offer useful and ubiquitous platforms for attempting to do so.

75. See KENNETH J. ARROW, *Alternative Approaches to the Theory of Choice in Risk-Taking Situations*, in *ESSAYS IN THE THEORY OF RISK-BEARING*, *supra* note 7, at 1, 4-6 (discussing the examples of gambling and insurance, as well as other phenomena that involve uncertainty less directly or obviously).

76. This move is well captured by the phrase “reverse insurance,” but that moniker has also been applied to cell IV (gravy-giveup) transactions. See Kades, *supra* note 1, at 1492 (using “reverse insurance” to designate a “private market mechanism for redistributing windfalls”).

gravy-giveup transaction (cell IV)—selling off her claim to a chance at a gain that might be delivered by law, policy, effort, or nature. Although chances at true “windfalls” represent one incarnation of these claims,<sup>77</sup> cell IV transactions might also involve claims to positive outcomes that are the product of merit or effort (selling one’s chance at winning the Nobel Prize, or a share of one’s future earnings in some creative or athletic pursuit).<sup>78</sup>

Hybrid transactions that draw from both of the columns in Figure 3 are also possible. As illustrated by Figures 1(c) and 2(c), people often hold rights to payments that are triggered by losses, but that do more than cover those losses. For example, if one were to sell one’s unmatured tort claim in its entirety, this would involve both a shedding of upside risk and an acceptance of downside risk—although the ditch and gravy components of such transactions might be disaggregated.<sup>79</sup> Hybrid transactions can also combine ditch coverage with a gravy giveup, as where an individual sells rights to the future appreciation of her home, using part of the proceeds to purchase protection against downside home-value risk.<sup>80</sup> Similarly, ditch exposure might be combined with a gravy gamble in a transaction that amplifies both upside and downside risk. Consider, for example, an employee who accepts a higher risk of job loss in exchange for a higher salary (ditch exposure) but who funnels that additional money into options in the company that will enable her to share in its upside returns (gravy gamble). In this case, the expected value payment that the individual receives for taking on more exposure would help fund the upside claim she purchases.

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Similarly, the term “anti-insurance” has been applied to both ditch-exposure and gravy-gamble transactions. *See generally* Cooter & Porat, *supra* note 1 (discussing anti-insurance for losses and for gains). Because many kinds of transactions can be viewed as constituting the opposite of insurance along some dimension, Figure 3’s taxonomic labels will be employed throughout the Article to add precision.

77. *See* Kades, *supra* note 1, at 1491 (defining “windfalls as economic gains independent of work, planning, or other productive activities that society wishes to reward” (emphasis omitted)); *see also* Hurt, *supra* note 65, at 349–77 (providing a taxonomy of windfalls and analyzing the use of the word).

78. *See infra* Part II.D.

79. For example, it would be possible for parties to selectively sell portions of their unmatured tort claims, or selectively replace portions of the alienated coverage with first-party insurance. *E.g.*, Cooter, *supra* note 2, at 384–85, 387.

80. *See infra* Part II.C.1. Financial “collars” that combine a call and a put to narrow the possible range of returns are a familiar example of a hybrid transaction combining cells I and IV.

### C. *Triangular Risk Configurations*

So far, I have examined REVEs from the perspective of an individual without considering the identity of the counterparty. REVEs can pass risk back and forth between two parties to a risky interaction, such as a potential victim and a potential injurer. But as the AYOR and NAYOR examples in the Introduction suggest, a previously uninvolved third party could also transfer risk in either direction. The involvement of such an insurer or reverse insurer facilitates additional arrangements in which both original parties to a given transaction are effectively insured against, or exposed to, risk.<sup>81</sup>

To reach the “both-insured” state, the party that the law has left exposed to the risk must procure insurance. If losses are left to fall on the injurer, the injurer can obtain third-party insurance to cover those losses. If losses are left to fall on the victim, the victim can obtain first-party insurance. The potential advantages of the “both-insured” endstate are fairly intuitive: both parties to an interaction may be risk averse or may have other reasons for wishing to carry insurance.<sup>82</sup>

To reach the “both-exposed” state, the party that the law has effectively insured against the risk must engage in a ditch-exposure transaction.<sup>83</sup> Thus, if the law places losses on injurers, prospective victims could sell their potential claims and accept exposure to any actual losses they may suffer.<sup>84</sup> Likewise, if the law leaves the loss on victims, potential injurers could agree to pay a third-party reverse insurer amounts keyed to the losses actually suffered by the victims in exchange for an expected value payment from the reverse insurer. By making side bets with one of the parties, the reverse insurer brings about an endstate in which losses effectively fall both on victims and on injurers.<sup>85</sup> That such a both-exposed regime can enhance efficiency

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81. I will focus here on third parties who enter the picture as insurers or reverse insurers. Another possibility, which I do not discuss, would be for the law to place liability on unrelated third parties as a default matter, thus inducing them to initiate deals with the parties who are in a better position to control accidents. See CALABRESI, *supra* note 1, at 136 (considering the implications of assigning the loss of car-pedestrian accidents to “an arbitrary third party, e.g., television manufacturers”).

82. For a recent discussion of why risk-neutral corporations nonetheless buy insurance, see generally Victor P. Goldberg, *The Devil Made Me Do It: The Corporate Purchase of Insurance*, 5 REV. L. & ECON. 541 (2009).

83. See *supra* Figure 2(a) and accompanying text.

84. See *infra* Part II.B.1.

85. The textual discussion assumes that victims and injurers are not able to collude with each other. An incentive for collusion exists because third-party reverse insurance makes the victim and the injurer collectively responsible for twice the loss, whereas their collective

has been intriguingly analyzed by Robert Cooter and Ariel Porat,<sup>86</sup> and follows from Cooter's earlier explorations of "double responsibility at the margin."<sup>87</sup> By driving a wedge between what the injurer pays and what the victim receives, reverse insurance restores incentives that might otherwise be dulled by a legal system that assigns the loss to only one of the parties.<sup>88</sup>

Such triangular arrangements are important to a discussion of risk unbundling for at least three reasons. First, risk must be disaggregated from underlying consumption and activity choices before it can be transacted over with a third party. Thus, triangular arrangements—and the advantages they uniquely produce—depend upon unbundling. Second, triangular risk configurations can help address some concerns associated with REVEs.<sup>89</sup> The counterintuitive implication is that objections to risk transactions can sometimes be met by expanding, rather than contracting, opportunities to transact over risks. Third, contemplating the possibility of triangular arrangements sharply raises important supply-side questions. On one hand, there are practical and legal impediments that could limit the interest and participation of third-party risk merchants.<sup>90</sup> On the other, certain regulatory constraints may be required for novel risk-management products offered by third parties.<sup>91</sup>

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exposure to the loss in the absence of the reverse insurer is half that amount. For example, suppose victim A is injured after assigning her claim to reverse insurer C in a world in which B would ordinarily be liable to A. If A and B can keep C from learning about the injury, B can pay A some positive amount that is less than what he would ordinarily have to pay on the claim, and both will be better off. *See* Cooter & Porat, *supra* note 1, at 215–16 (discussing this and other collusion risks associated with anti-insurance).

86. Although Cooter and Porat focus primarily on the contract context, they briefly explore how their ideas might apply to torts. *Id.* at 225–26.

87. Robert Cooter, *Unity in Tort, Contract, and Property: The Model of Precaution*, 73 CALIF. L. REV. 1, 3–4 (1985) (describing an efficiency condition in which both parties capable of taking precautions against a given harm are made fully responsible for that harm); *see also* Coase, *supra* note 9, at 41 (suggesting a "double tax system" that would impose charges on both parties to a land-use dispute).

88. The law could, of course, delink collections from injurers and payments to victims, whether to reach a "both exposed" state or for other reasons. *See* CALABRESI, *supra* note 1, at 22–23 (arguing against the notion "that there is any necessary financial link between injurers and victims").

89. *See infra* Part IV.B.2.

90. For a discussion of some of these considerations, *see* Kunreuther & Pauly, *supra* note 19, at 98–110, and *see also infra* Part III.

91. Among other things, it would be possible to place limits on the ability of those accepting certain risks to further unbundle and resell those risks where this is deemed necessary to preserve the right risk assessment and pricing incentives. Cutting against this regulatory impulse is the need for thick markets in risk, which free alienability would help to foster. Other



## II. REVES, REAL AND IMAGINED

The basic moves identified above can be combined in numerous ways to form REVEs that range from the ubiquitous to the exotic. Insurance and lotteries are familiar REVEs and, at least when offered explicitly, are easy to identify. But many REVEs occur, or might occur, outside of these contexts. Risks are of course pervasively shifted through the stock market.<sup>92</sup> Contractual arrangements also inevitably allocate risk, whether through default rules or through shifts from them.<sup>93</sup> Examples of less familiar REVEs for modifying personal and household risks—some of which have been implemented or proposed—follow. The list is not comprehensive but merely suggestive of the range of possibilities. Because this Part focuses on illustrating risk rearrangements rather than on evaluating them, the brief descriptions here do not attempt to catalogue—much less address—the many considerations that would bear on the normative desirability or feasibility of these instruments.

### A. *Matters of Life and Death*

Life insurance and annuities, transactions that might be viewed from the individual's perspective as constituting either ditch coverage or gravy gambles,<sup>94</sup> are the most familiar ways to address life-and-death risk. But other possibilities exist. For example, viatical and life settlements permit a terminally ill or elderly holder of a life insurance policy<sup>95</sup> to sell the right to receive the proceeds of that policy for an

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restrictions might serve to counter cognitive biases, reduce information asymmetries between the parties, address problems of fraud and collusion, and so on.

92. See ARROW, *supra* note 7, at 138–39 (noting shortcomings in the stock market's risk-shifting capacities). Although derivatives and other vehicles for slicing and repackaging risk have addressed some of the gaps that Arrow identified, these devices have suffered from implementation problems of their own, as the recent financial crisis illustrates.

93. See *id.* at 136–37 (noting that to the extent contracts involve the future, they always involve risk); see also Korobkin, *supra* note 18, at 619–21 (discussing some reasons why efficient risk-shifting away from a contractual default may fail to occur); Korobkin, *supra* note 18, at 633–64 (presenting results of an experiment designed to test the status quo bias as it applies to contract default terms, including those governing consequential damages and impossibility).

94. Which cell to slot the arrangement into depends on whether the loss of life (or, in the case of annuities, longevity) will create the kind of ditch to which money can respond, or whether the proceeds instead represent a kind of gravy that leaves the recipient better off in monetary terms. See, e.g., *IT'S A WONDERFUL LIFE* (Liberty Films 1946) (featuring a distraught George Bailey who takes to heart Mr. Potter's assessment that he is "worth more dead than alive").

95. "Viatical settlement" refers to the sale of a life insurance policy by a terminally ill person, whereas "life settlement" or "senior settlement" refers to the sale of a life insurance

immediate lump sum.<sup>96</sup> From the policyholder's perspective, these transactions correspond to either ditch exposure or gravy giveups.<sup>97</sup> Another life-and-death REVE is the tontine, a form of life insurance that bestows deferred dividends on individuals who survive beyond a set period, paid from the premiums that policyholders as a group contribute.<sup>98</sup> Freestanding bets on one's own survival to a date certain are also possible;<sup>99</sup> these transactions might be viewed as constituting either ditch coverage or gravy gambles.

Steven Croley and Jon Hanson discuss a transaction that would arguably amount to a gravy giveup: "disinsurance," in which parents would receive a lump sum upon the birth of a child but take on the obligation to make a much larger payment to the disinsurer in the event that the child dies before the age of eighteen.<sup>100</sup> As the authors explain, the fact that parents typically experience lower financial burdens after a child dies amounts to a kind of implicit life insurance carried on the child; the death comes bundled not with an explicit payout from an insurer, but with significant cost savings that amount

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policy by a senior citizen. Jessica Maria Perez, Note, *You Can Bet Your Life on It! Regulating Senior Settlements to Be a Financial Alternative for the Elderly*, 10 ELDER L.J. 425, 430 (2002).

96. *Id.* at 428–29. The investor also pays any remaining premiums that come due on the policy. *Id.* The financial crisis has heightened demand for these transactions. Jennifer Hodson, *Clients Cash in Policies—Life-Settlement Industry Sees Growth as People Seek Funds*, WALL ST. J., Feb. 4, 2009, at B5A. Although these mechanisms have been criticized, the fact that they allow an investor to profit from an individual's death does not distinguish them from annuities. Alvin E. Roth, *Repugnance as a Constraint on Markets*, 21 J. ECON. PERSP. 37, 41 (2007).

97. Again, the classification depends on what the effect of the forgone proceeds would have been. *See supra* note 94.

98. Tontines, named for Lorenzo de Tonti, have taken a variety of forms throughout history but always grant their shareholders some benefit by virtue of survival. *See* Kent McKeever, *A Short History of Tontines*, 15 FORDHAM J. CORP. & FIN. L. 491, 491 (2009). In its most dramatic incarnation, group members contributed to a fund that went to the last individual to survive. *Id.*; *see also* ROBERT LOUIS STEVENSON, *THE WRONG BOX* (1889) (featuring a plot involving such a tontine). A form of tontine life insurance that paid out for survival as well as for death evolved in the United States in the nineteenth century. Tom Baker & Peter Siegelman, *Tontines for the Invincibles: Enticing Low Risks into the Health-Insurance Pool with an Idea from Insurance History and Behavioral Economics*, 2010 WIS. L. REV. 79, 85–88; McKeever, *supra*, at 507. Tom Baker and Peter Siegelman propose adapting the tontines idea of deferred dividends to the health insurance arena. *See generally* Baker & Siegelman, *supra*.

99. *See, e.g., Dying Man Wins Bet He Would Live*, BBC NEWS, [http://news.bbc.co.uk/2/hi/uk\\_news/england/beds/bucks/herts/8075288.stm](http://news.bbc.co.uk/2/hi/uk_news/england/beds/bucks/herts/8075288.stm) (last updated May 30, 2009, 14:39 GMT) (reporting on a cancer patient who collected £5,000 on each of two bets that he would live to a certain date); *see also* Rachael Emma Silverman, *Letting an Investor Bet on When You'll Die*, WALL ST. J., May 26, 2005, at D1 (describing an approach to financing life insurance in which investors may end up owning the policy if the insured survives beyond a two-year loan period).

100. Croley & Hanson, *supra* note 1, at 1885; *see also id.* at 1885 n.367 (discussing variations on this idea, including an annuity that pays out only if the child survives to the age of eighteen).

to the same thing.<sup>101</sup> If the money that becomes newly available after a child's death carries lower marginal utility than would money available while the child is alive, there is an efficiency argument for moving money from the state of the world in which the child is dead to the state of the world in which the child is alive.<sup>102</sup> On one view, at least, such a move amounts to selling gravy in the state of the world in which the child has died, where the bounty will be less appealing.

A related idea, recently explored by Ariel Porat and Avraham Tabbach, would enable an individual to reverse insure her own life.<sup>103</sup> A reverse insurer would offer the following deal to an individual facing some risk of death: if you live, I will pay you the expected value of your wealth remaining after your death, and if you die, I will receive your wealth.<sup>104</sup> This approach allows an individual, while living, to access wealth that exists only in the state of the world in which she has died.<sup>105</sup> The opportunity to enter into such contracts also carries the potential to realign incentives that are skewed as a result of the undervaluing of wealth after death, a point that connects to questions about health care and related end-of-life decisionmaking.<sup>106</sup>

## B. *Legal Claims and Liabilities*

1. *Selling (and Settling) Legal Claims.* Legal claims are effectively sold whenever the parties to a lawsuit (or potential lawsuit) settle among themselves; for plaintiffs, these transactions typically combine ditch coverage with a gravy giveup by simultaneously truncating upside and downside risk. Liability waivers, which may be viewed as combining ditch exposure with a gravy

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101. *See id.* at 1885.

102. *See supra* text accompanying notes 29–35; *see also* Croley & Hanson, *supra* note 1, at 1885 (suggesting that the unavailability of markets in this form of disinsurance offers some evidence that parents prefer the implicit insurance against the death of a child that inheres in the cost savings accruing to parents following such a death).

103. Ariel Porat & Avraham Tabbach, *Risk of Death*, AM. L. & ECON. REV. (forthcoming 2011) (manuscript at 16–20), available at <http://ssrn.com/abstract=1669652>.

104. *Id.* at 16–17.

105. *See id.*

106. *See id.* at 16 (arguing that reverse insurance would make an individual “fully internalize all the costs and benefits of his investment in self-risk reduction”); *see also infra* text accompanying note 173. The authors make the simplifying assumption that wealth holds no value for a person after her death, but a similar analysis would apply even if people had bequest motives, as long as they still valued wealth more during life. Porat & Tabbach, *supra* note 103, at 36.

giveup,<sup>107</sup> also represent a familiar (if often legally unavailable) vehicle for reversing tort law's default risk allocation between potential injurers and potential victims.<sup>108</sup> But legal risks could also be addressed through REVEs that involve third parties and that encompass transactions that occur prior to any point of injury or exposure.<sup>109</sup> For example, a number of scholars have advocated markets in unmaturing tort claims.<sup>110</sup> These proposals contemplate the sale of potential claims to third parties who would be entitled to collect on behalf of the victim in the event he is injured.<sup>111</sup> Advocates of markets in unmaturing tort claims have typically prescribed specific limits on these transactions, such as a requirement that potential

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107. See *supra* text accompanying note 62.

108. For a recent discussion of liability waivers and the legal limitations on them, see Mark A. Geistfeld, *The Value of Consumer Choice in Products Liability*, 74 BROOK. L. REV. 781, 800 (2009); and see also Richard C. Ausness, "Waive" Goodbye to Tort Liability: A Proposal to Remove Paternalism from Product Sales Transactions, 37 SAN DIEGO L. REV. 293, 294 (2000); and Note, *Enforcing Waivers in Products Liability*, 69 VA. L. REV. 1111, 1112 (1983). For a recent economic analysis of the effects of products liability waivers, see Albert Choi & Kathryn E. Spier, *Should Consumers Be Permitted to Waive Products Liability? Product Safety, Private Contracts, and Adverse Selection* 1 (Univ. of Va. Sch. of Law, John M. Olin Law & Econ. Research Paper No. 2010-11, 2010), available at <http://www.ssrn.com/abstract=1680932>.

109. Transactions could also occur between the point of exposure and the manifestation of harm. See Yair Listokin & Kenneth Ayotte, *Protecting Future Claimants in Mass Tort Bankruptcies*, 98 NW. U. L. REV. 1435, 1474-75 & n.183 (2004) (discussing asbestos exposure as presenting "inchoate claims," the settlement of which would constitute a form of "anti-insurance"); see also Ariel Porat & Alex Stein, *Liability for Future Harm*, in PERSPECTIVES ON CAUSATION (Richard S. Goldberg ed., forthcoming 2011) (manuscript at 26-27), available at <http://ssrn.com/abstract=1457362> (proposing that victims be allowed to choose compensation for future harm over compensation for realized harm, in part because this would enable them to make use of money in a state of the world in which they are healthy).

110. See, e.g., STEPHEN D. SUGARMAN, DOING AWAY WITH PERSONAL INJURY LAW: NEW COMPENSATION MECHANISMS FOR VICTIMS, CONSUMERS, AND BUSINESS 202-10 (1989); Robert Cooter & Stephen D. Sugarman, *A Regulated Market in Unmatured Tort Claims: Tort Reform by Contract*, in NEW DIRECTIONS IN LIABILITY LAW 174 (Walter Olsen ed., 1988); Cooter, *supra* note 2; Shukaitis, *supra* note 2; Sugarman, *supra* note 2. For critiques, see Charles J. Goetz, *Commentary on "Towards a Market in Unmatured Tort Claims": Collateral Implications*, 75 VA. L. REV. 413 (1989); Alan Schwartz, *Commentary on "Towards a Market in Unmatured Tort Claims": A Long Way Yet to Go*, 75 VA. L. REV. 423 (1989).

111. This does not necessarily mean that the purchaser would actually end up pursuing a claim if an injury later occurred. For example, some proposals contemplate that the unmaturing claims would be purchased by employers and resold in blocks to potential injurers and their insurers, thus "presettling" large numbers of potential claims. See SUGARMAN, *supra* note 110, at 202-03; Cooter & Sugarman, *supra* note 110, at 176; see also Jeffrey O'Connell, *Harnessing the Liability Lottery: Elective First-Party No-Fault Insurance Financed by Third-Party Tort Claims*, 1978 WASH. U. L.Q. 693, 699-700 (noting the potential for two insurance companies holding tort claims of their insureds to engage in a "bulk settlement of all mutual claims").

victims first secure adequate first-party insurance.<sup>112</sup> The initial sale of the tort claim would combine ditch exposure with a gravy giveup, but the purchase of first-party insurance would undo the ditch-exposure component with a ditch-coverage move.

Although scholarship on unmatured tort claims focuses on transactions involving potential plaintiffs, it would also be possible for potential defendants to engage in parallel transactions from a baseline in which they are shielded from liability. Suppose that the law placed losses by default not on specific injurers, but instead spread the risk of loss more broadly through a social insurance system funded by contributions from all potential injurers.<sup>113</sup> In such a regime, a potential injurer might wish to make a deal in which it receives from the social insurer (or a third-party reverse insurer) a payment equal to the expected value of the injuries it will cause, agreeing in exchange to pay an amount equal to the losses that it (the potential injurer) actually ends up inflicting on the victim.<sup>114</sup> This would be a ditch-exposure move.

After the event giving rise to liability occurs and a (matured) legal claim exists, litigation risk remains that both plaintiffs and defendants might transact over with third parties.<sup>115</sup> REVEs might

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112. See SUGARMAN, *supra* note 110, at 204; Cooter, *supra* note 2, at 401–02; Cooter & Sugarman, *supra* note 110, at 178. An earlier proposal by Jeffrey O’Connell framed the sale of unmatured tort claims as a way to finance first-party no-fault insurance. O’Connell, *supra* note 111, at 697–98; see also Jeffrey O’Connell & Janet Beck, *Overcoming Legal Barriers to the Transfer of Third-Party Tort Claims as a Means of Financing First-Party No-Fault Insurance*, 58 WASH. U. L.Q. 55, 55–56 (1980). Insurance subrogation represents an existing, limited way in which certain tort claim rights are transferred in exchange for less expensive first-party insurance covering the same risks. I thank Frank Easterbrook for raising this point.

113. New Zealand’s system fits this model. A government agency, the Accident Compensation Corporation, provides “no fault” coverage to accident victims, drawing on accounts funded by various taxes and levies. See Peter H. Schuck, *Tort Reform, Kiwi-Style*, 27 YALE L. & POL’Y REV. 187, 190 (2008); ACC, <http://www.acc.co.nz/index.htm> (last visited Jan. 23, 2011).

114. Like reverse insurance procured by potential victims in a regime that holds injurers liable, this arrangement produces exposure for both parties. See Cooter & Porat, *supra* note 1, at 225; *supra* text accompanying notes 83–88.

115. For analysis of the potential for markets in legal claims and associated litigation risk, see generally Michael Abramowicz, *On the Alienability of Legal Claims*, 114 YALE L.J. 697 (2005); Jonathan T. Molot, *A Market in Litigation Risk*, 76 U. CHI. L. REV. 367 (2009). Transactions in which investors fund lawsuits in exchange for some of the proceeds have become increasingly prevalent. See, e.g., Binyamin Appelbaum, *Putting Money on Lawsuits, Investors Share in the Payouts*, N.Y. TIMES, Nov. 15, 2010, at A1; Nate Raymond, *Attorneys Explore Third-Party Funding in Commercial Disputes*, N.Y. L.J., June 3, 2010, at 1; Jonathan D. Glater, *Investing in Lawsuits, for a Share of the Awards*, N.Y. TIMES, June 3, 2009, at B1. Other risks associated with payouts from legal claims can also be shifted. See, e.g., Adam F. Scales,

also occur after final judgment to alter the risk allocation embedded in the relief awarded, as explained below.

2. *Tort Remedies.* The use of damages to remedy a nuisance represents an interesting example of a risk allocation embedded within a legal outcome. Suppose the law entitles a homeowner to be free of smoke emanating from a neighboring factory, but protects that entitlement only with a liability rule.<sup>116</sup> If stochastic factors determine whether and to what extent the emissions of the factory translate into realized harm for the homeowner,<sup>117</sup> then risk is allocated differently if the homeowner is compensated for realized harm than if she is compensated *ex ante* for expected harm.<sup>118</sup>

Suppose a legal regime initially permits the homeowner to collect based on realized harm, but allows her to trade that claim for an upfront payment of permanent damages from the defendant. From the homeowner's perspective, this transaction represents an event-detracting move that detaches compensation from the realization of harm (ditch exposure). For the defendant, the trade amounts to an event enhancement that detaches liability from an otherwise covered event (a ditch-coverage move). Alternatively, a legal regime might begin at this endpoint, with permanent damages as the default remedy. In that case, the defendant might take on risk (ditch exposure) either by selling coverage directly to the plaintiff<sup>119</sup> or by negotiating with a third-party reverse insurer. Similarly, the plaintiff might shed risk in such a world by purchasing ditch coverage either

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*Against Settlement Factoring? The Market in Tort Claims Has Arrived*, 2002 WIS. L. REV. 859, 897–900 (describing settlement factoring transactions, which involve selling rights to payout streams from tort settlements); Peter Lattman & Diana B. Henriques, *Speculators Are Eager to Bet on Madoff Claims*, N.Y. TIMES DEALBOOK, Dec. 13, 2010, <http://dealbook.nytimes.com/2010/12/13/speculators-are-eager-to-bet-on-madoff-claims> (noting the longstanding existence of markets for trading in bankruptcy claims and reporting on trades in the Madoff case).

116. See Calabresi & Melamed, *supra* note 23, at 1092, 1115–16 (distinguishing liability rules from property rules in the nuisance context).

117. For example, chance weather patterns, including wind speed and direction, may greatly affect the impacts associated with effluents. Jonathan Remy Nash & Richard L. Revesz, *Markets and Geography: Designing Marketable Permit Schemes to Control Local and Regional Pollutants*, 28 ECOLOGY L.Q. 569, 578, 580 (2001).

118. See Lee Anne Fennell, *Property and Half-Torts*, 116 YALE L.J. 1400, 1468–69 (2007) (distinguishing between liability rules that shift the costs of realized harm and those that impose liability based on expected harm); *cf.* Cooter, *supra* note 87, at 14–19 (discussing invariant damages in the contract context).

119. “Selling coverage” in this context means that the defendant retains the permanent damages that she would otherwise pay to the plaintiff and agrees in exchange to cover any actual harm from her activities that materializes.

directly from the defendant or from an insurer. If the conferral of positive externalities could give rise to liability,<sup>120</sup> gravy-gamble and gravy-giveup transactions paralleling those detailed above could likewise rearrange the law's default allocation of upside risk.<sup>121</sup>

3. *Legal Changes.* People may be interested in insuring against or hedging legal changes that would significantly affect their lives. Prediction markets keyed to tax-law changes and other legislative changes have already emerged.<sup>122</sup> Scholarship has also examined the potential for private insurance against governmental takings.<sup>123</sup> Policies offered by the World Bank Group's Multilateral Investment Guarantee Agency represent another tool for managing the risk of legal change, insuring investors against certain governmental acts and omissions, as well as against war and civil unrest.<sup>124</sup> To the extent the change in question is one that will have a negative financial impact on the individual seeking insurance, the transaction amounts to ditch coverage. It would also be possible for people to increase upside risk by betting on changes that will not affect them at all, or that will benefit them (gravy gambles). Alternatively, when uncertain legal

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120. For a recent article detailing the existing limits on liability for unrequested benefits and proposing an "expanded duty of restitution," see Ariel Porat, *Private Production of Public Goods: Liability for Unrequested Benefits*, 108 MICH. L. REV. 189 (2009).

121. Suppose a legal regime makes neighbor *A* liable for part of the cost of a fence constructed by neighbor *B* if that fence bestows benefits on *A*. That liability might be operationalized in either of the following ways: (1) neighbor *A* might be required to pay when an appraisal upon resale establishes that value has been added, or (2) *A* might be required to pay upfront for the expected value added. The former arrangement leaves *B* with the risk that the benefits will not materialize, whereas the latter places that risk on *A*. Either arrangement could be reversed using gravy-gamble or gravy-giveup REVEs.

122. See INTRADE PREDICTION MARKETS, <http://www.intrade.com> (search for "tax" and "cap and trade") (last visited Feb. 5, 2011) (listing contracts for changes in U.S. tax rates and for the establishment of a cap-and-trade system); see also Jason Ruspini, *Tax Futures "In Real Life,"* RISK MARKETS & POL. (Feb. 6, 2008, 11:55 PM), <http://riskmarkets.blogspot.com/2008/02/tax-futures-reality.html> (discussing the introduction of tax futures on Intrade.com).

123. See, e.g., Steve P. Calandrillo, *Eminent Domain Economics: Should "Just Compensation" Be Abolished, and Would "Takings Insurance" Work Instead?*, 64 OHIO ST. L.J. 451, 499–521 (2003); Eric Kades, *Avoiding Takings "Accidents": A Torts Perspective on Takings Law*, 28 U. RICH. L. REV. 1235, 1238–47, 1270–72 (1994); Louis Kaplow, *An Economic Analysis of Legal Transitions*, 99 HARV. L. REV. 509, 527–28, 537–49, 602–06 (1986).

124. See *Types of Coverage*, MULTILATERAL INVESTMENT GUARANTY AGENCY, [http://www.miga.org/guarantees/index\\_sv.cfm?stid=1547](http://www.miga.org/guarantees/index_sv.cfm?stid=1547) (last visited Jan. 23, 2011) (offering insurance against expropriation, including "creeping" expropriation, against governmental acts or omissions that make it impossible to convert or transfer currency, and against losses from "[w]ar, terrorism, and civil disturbance"). I thank Nicole Garnett for alerting me to these policies.

changes would have a positive effect, that effect could be dampened by selling rights to part or all of that potential gain (gravy giveup).

Transition relief—such as grandfathering, recognition of vested rights, or compensation for governmental takings—amounts to embedded insurance against legal change.<sup>125</sup> Following the logic of unbundling, some people might wish to shed the implicit insurance provided by the law by receiving the expected value equivalent of that relief from the government—perhaps in the form of lower taxes or less onerous land-use exactions—in exchange for greater exposure to the effects of future legal changes.<sup>126</sup> This would represent a ditch-exposure transaction, assuming the legal change would in fact inflict losses.

### C. Homes

1. *Housing Futures and Options.* By default, the law leaves homeowners exposed to volatility in home values, most of which is governed by factors beyond their personal control. As a growing number of scholars, policymakers, and entrepreneurs have observed, many homeowners could benefit from offloading some of this risk.<sup>127</sup> There is both an upside and a downside component of home-value variance, as measured against the baseline of the original sales price, and each component could be separately adjusted. First, a homeowning household could purchase protection against downward price movements in the local housing market.<sup>128</sup> This would be a form

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125. See, e.g., DANIEL SHAVIRO, WHEN RULES CHANGE 40–42 (2000); Lawrence Blume & Daniel L. Rubinfeld, *Compensation for Takings: An Economic Analysis*, 72 CALIF. L. REV. 569, 571–72 (1984); Kaplow, *supra* note 123, at 527–28. See generally Jonathan S. Masur & Jonathan Remy Nash, *The Institutional Dynamics of Transition Relief*, 85 N.Y.U. L. REV. 391 (2010) (discussing the potential role of government-provided transition relief in light of the unavailability of private insurance).

126. For example, a number of scholars have noted that the government could pay landowners for “takings options” that would permit the government to condemn without paying just compensation for improvements on the land. See, e.g., William A. Fischel & Perry Shapiro, *Takings, Insurance, and Michelman: Comments on Economic Interpretations of “Just Compensation” Law*, 17 J. LEGAL STUD. 269, 274 (1988) (describing this possibility and citing antecedent literature).

127. For an overview of past, proposed, and existing programs and products for rearranging homeownership risk, see generally Lee Anne Fennell, *Homeownership 2.0*, 102 NW. U. L. REV. 1047 (2008).

128. For an overview of the purposes and potential of home equity insurance, see generally Robert J. Shiller & Allan N. Weiss, *Home Equity Insurance*, 19 J. REAL ESTATE FIN. & ECON. 21 (1999). Some localities have experimented with forms of home equity insurance. See, e.g., Maureen A. McNamara, *The Legality and Efficacy of Homeowner’s Equity Assurance: A Study*



of ditch coverage that works like ordinary first-party insurance—the homeowner pays out the expected value of any loss of home value attributable to downward market fluctuations and receives in exchange the right to an amount that will cover this loss in the event of such fluctuations.

Alternatively, or in addition, a household could sell the right to upside home appreciation.<sup>129</sup> This event-detracting REVE could be characterized as a gravy giveup if the original purchase price serves as the baseline. Of course, it is possible to frame things differently. If the homeowner will need to purchase other housing upon resale of the current house, that need can be viewed as a liability; the price increases in that other housing represent potential reductions in the homeowner’s standard of living.<sup>130</sup> If the homeowner’s present and future homes experience closely correlated price movements, then the appreciation realized on the current house would help cover the threatened loss associated with price increases in the new house.<sup>131</sup> Selling the home’s upside potential in this context would seem more like selling an insurance claim and accepting ditch exposure.

2. *Rental Price Insurance.* Because tenants lack an equity stake in the properties in which they live, rising property values can lead to affordability shortfalls as rents rise. Although the empirical record on the extent of involuntary displacement is complex and contested,<sup>132</sup>

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*of Oak Park, Illinois*, 78 NW. U. L. REV. 1463 (1984); Andrew Caplin, William Goetzmann, Eric Hangen, Barry Nalebuff, Elisabeth Prentice, John Rodkin, Matthew Spiegel & Tom Skinner, *Home Equity Insurance: A Pilot Project* (Yale Int’l Ctr. for Fin., Working Paper No. 03-12, 2003), available at [http://ssrn.com/abstract\\_id=410141](http://ssrn.com/abstract_id=410141).

129. This would enable a homeowner to finance her purchase using equity as well as debt. See, e.g., Andrew Caplin, James H. Carr, Frederick Pollock & Zhong Yi Tong, with Kheng Mei Tan & Trivikraman Thampy, *Shared-Equity Mortgages, Housing Affordability, and Homeownership*, 18 HOUSING POL’Y DEBATE 209, 217 (2007).

130. Sinai & Souleles, *supra* note 14, at 763 (observing that “all households are in effect born ‘short’ housing services, since they have to live somewhere”).

131. See Todd M. Sinai & Nicholas S. Souleles, *Can Owning a Home Hedge the Risk of Moving?* 2–3 (Nat’l Bureau of Econ. Research, Working Paper No. w15462, 2009), available at <http://ssrn.com/abstract=1498963> (finding that households “tend to move between highly covarying housing markets,” which makes the purchase of the first home work as an effective hedge against the second home).

132. Compare, e.g., Lance Freeman & Frank Braconi, *Gentrification and Displacement, New York City in the 1990’s*, 70 J. AM. PLANNING ASSOC. 39, 51 (2004) (“Our analysis indicates that rather than speeding up the departure of low-income residents through displacement, neighborhood gentrification in New York City was actually associated with a lower propensity of disadvantaged households to move.”), with Kathe Newman & Elvin K. Wyly, *The Right to Stay Put, Revisited: Gentrification and Resistance to Displacement in New York City*, 43 URBAN

there is little doubt that fear of displacement and rising rental costs generate disutility, both for tenants and for others in their communities.<sup>133</sup> These concerns would disappear if tenants could obtain what homeowners already have—an option to remain in place as long as they like at a fixed price.<sup>134</sup> Lengthy leases are one possibility, but these are costly for landlords to offer and often unattractive to tenants who want to retain the option to leave if they so choose. Some scholars have suggested that tenants be afforded access to financial instruments indexed to area rents.<sup>135</sup> Under such a plan, the value of the instrument held by the tenant would rise if rents rose, allowing her to afford the new, higher rent.<sup>136</sup> Tenants would be effectively insured against increased rents.<sup>137</sup> This approach involves a ditch-coverage REVE, albeit one that a governmental entity might fund or subsidize.<sup>138</sup>

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STUD. 23, 30–31, 47–52 (2006) (discussing ways in which data on displacement may understate the phenomenon and noting the role of housing policies such as rent regulation in mitigating gentrification’s displacement effects).

133. For discussion of these effects, see, for example, Freeman & Braconi, *supra* note 132, at 39–40; and Newman & Wyly, *supra* note 132, at 30–31.

134. On the importance to tenants of the right to remain, see Margaret Jane Radin, *Residential Rent Control*, 15 PHIL. & PUB. AFF. 350, 359–63, 368–70 (1986); Florence Wagman Roisman, *The Right to Remain: Common Law Protections for Security of Tenure: An Essay in Honor of John Otis Calmore*, 86 N.C. L. REV. 817, 820–29 (2008). The contrast between the situations of tenants and homeowners is often less stark than the statement in the text might suggest. For example, tenants in many localities enjoy some protection against displacement, whereas some mortgage products, such as those with adjustable rates, undermine the usual price protection associated with homeownership.

135. See, e.g., BRENDAN O’FLAHERTY, CITY ECONOMICS 369 (2005) (“Tenants could get a long-run stake in the community if they were required to buy some variety of security that was pegged to the town’s or neighborhood’s total property value.”); Robert I. Lerman & Signe-Mary McKernan, *Promoting Neighborhood Improvement While Protecting Low-Income Families*, OPPORTUNITY & OWNERSHIP PROJECT (Urban Inst., D.C.), May 2007, at 2, available at [http://www.urban.org/UploadedPDF/311457\\_Promoting\\_Neighborhood.pdf](http://www.urban.org/UploadedPDF/311457_Promoting_Neighborhood.pdf) (proposing use of a “tradable option” for tenants that “would be a financial asset linked to an index of area rents”); Robert I. Lerman, *Promoting Neighborhood Improvement While Protecting Low-Income Families* 6–12 (Nov. 8, 2008) (unpublished manuscript, presented at the 29th Research Conference, Association for Public Policy Analysis and Management) (on file with the *Duke Law Journal*) (expanding on the proposal for financial options for tenants); see also Lee Anne Fennell & Julie Roin, *Controlling Residential Stakes*, 77 U. CHI. L. REV. 143 (2010) (discussing how local governments might make such instruments available to tenants).

136. Lerman & McKernan, *supra* note 135, at 2; Lerman, *supra* note 135, at 6.

137. Although one incarnation of the proposal would envision the use of financial instruments (structured as call options) to deliver protection, the program could instead be explicitly structured as an insurance program. Lerman & McKernan, *supra* note 135, at 2; Lerman, *supra* note 135, at 7–8.

138. For example, local governments might subsidize such financial instruments or provide them free of charge to low-income tenants. See Lerman & McKernan, *supra* note 135, at 3.

It is also worth observing that rent control delivers a form of legally embedded rental-price insurance that is tied to the household's specific unit. Recognizing this equivalence opens up the possibility that some tenants in rent-controlled units might wish to sell their implicit insurance, receiving a lump sum in exchange for greater exposure to changes in local rental rates (a ditch-exposure transaction).<sup>139</sup>

#### D. *Livelihoods and Human Capital*

1. *Equity Shares in Future Earnings.* Minor league baseball player Randy Newsom made the news in 2008 (and attracted unwanted regulatory attention from the SEC) by setting up a website to sell shares of his future major league earnings.<sup>140</sup> A writer recently tried a similar tactic,<sup>141</sup> and one might imagine the idea taking hold more broadly were it not for regulatory hurdles.<sup>142</sup> Even people who have regular salaries might want to sell a proportion of the proceeds from a bonus, award, or promotion they stand some chance of receiving. For example, an academic who is widely viewed as standing a significant chance of winning the Nobel Prize might alienate the

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139. See Radin, *supra* note 134, at 359–60 n.12 (observing that “[t]here could also be tenants who would value the money they might get by ‘selling’ back to the landlord their rent-control rights more than they value a right to keep their apartments,” but noting that actual rent-control programs do not allow tenants to waive their rent-control rights in exchange for a lower initial rent).

140. Alan Schwarz, *Buying Low: Minor Leaguer Takes Stock of Himself*, N.Y. TIMES, Feb. 1, 2008, at D1. Newsom tabled his plan, *see id.*, and is now attending law school at Boston College, *Tetanus Shots, Law School Anxieties, and Baseball Road Trips*, AFTER THE NINTH (Aug. 26, 2009), <http://rnewsom.wordpress.com/2009/08/26/tetanus-shots-law-school-anxieties-and-baseball-road-trips>.

141. *When a Novelist Holds an IPO*, FREAKONOMICS (Aug. 1, 2008, 1:02 PM), <http://freakonomics.blogs.nytimes.com/2008/08/01/when-a-novelist-holds-an-ipo>.

142. See Christine Hurt, *One More Time: Selling Fractional Interests in Your Career or Your Work Product Will Take You for a Ride Through Securities Law—Even if You Are an “Ant Trading a Mote of Sand for a Leaf or Something.”* THE CONGLOMERATE (Aug. 5, 2008), <http://www.theconglomerate.org/2008/08/one-more-time-s.html> (discussing regulatory issues). Selling equity rights to a future income stream can be distinguished from using a future income stream to secure a bond. A number of athletes, including White Sox player Frank Thomas, have attempted to securitize guaranteed future income streams as a way of raising money. GIL FRIED, STEVEN J. SHAPIRO & TIMOTHY D. DESCHRIEVER, *SPORT FINANCE* 178 (2d ed. 2008). “Bowie bonds” represented a similar effort at securitization, albeit one based on an income stream that proved fickle. See Karen Richardson, *Bankers Hope for a Reprise of “Bowie Bonds.”* WALL ST. J., Aug. 23, 2005, at C1.

right to the proceeds from that prize in exchange for a sum certain.<sup>143</sup> These would represent gravy giveups.

Although the idea of selling stock in oneself seems novel, it closely resembles familiar arrangements. Many firms heavily rely on equity financing, and one might well ask why individuals should not be able to do the same.<sup>144</sup> A close parallel is found in recording or publishing contracts. In the face of great uncertainty surrounding the future payoff from creative works (which may or may not have yet been created), artists and authors often effectively sell much of the upside potential in exchange for a sure gain.<sup>145</sup> That gain is paid partly in the form of an advance on royalties, which effectively insures the author against receiving an outcome below that benchmark,<sup>146</sup> and partly through the in-kind provision of production, distribution, and publicity services.<sup>147</sup> To the extent new production, distribution, and publicity channels opened up by the Internet make the in-kind component easier for artists to supply or contract for on their own,

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143. Betting markets in prospective Nobel Prize awards have already developed. A New Zealand company, iPredict, offered contracts on the 2010 Nobel Prize in Economics. Tyler Cowen, *Economic Nobel Odds at iPredict*, MARGINAL REVOLUTION (Oct. 6, 2010, 7:58 AM), <http://www.marginalrevolution.com/marginalrevolution/2010/10/economics-nobel-odds-at-ipredict.html>. Both 2009 winners of the Nobel in economics (Elinor Ostrom and Oliver Williamson) were given 50:1 odds by a U.K.-based betting site, Ladbrokes. Greg Mankiw, *Nobel Odds*, GREG MANKIW'S BLOG (Oct. 8, 2009), <http://gregmankiw.blogspot.com/2009/10/nobel-odds.html>. Nobel prospects have also figured in divorce settlements. See Jason English, *Odd Facts About Nobel Prize Winners*, CNN.COM, <http://www.cnn.com/2009/LIVING/wayoflife/10/06/mf.nobel.odd.facts/index.html> (last updated Oct. 6, 2009 2:27 PM).

144. See MILTON FRIEDMAN, CAPITALISM AND FREEDOM 102–04 (1962) (explaining shortfalls of “fixed money loans” in the context of human capital investment and discussing the potential to contract over equity stakes in future earnings). For a dystopian take on an all-encompassing system of equities in individuals, see generally DANI KOLLIN & EYTAN KOLLIN, THE UNINCORPORATED MAN (2009).

145. Royalties do commonly provide authors and artists a continuing share of the upside potential, but these are usually a small fraction of the overall proceeds. Termination provisions in copyright law also place some limits on the ability to permanently alienate rights to creative works. JULIE E. COHEN, LYDIA PALLAS LOREN, RUTH L. OKEDIJI & MAUREEN O’ROURKE, COPYRIGHT IN A GLOBAL INFORMATION ECONOMY 177–80 (2d ed. 2006) (citing 17 U.S.C. §§ 203, 304(c), 304(d) (2006)).

146. See Jorge Alonso & Richard Watt, *Efficient Distribution of Copyright Income*, in THE ECONOMICS OF COPYRIGHT: DEVELOPMENTS IN RESEARCH AND ANALYSIS 81, 89 (Wendy J. Gordon & Richard Watt eds., 2003) (“[Advance payment of royalties] is equivalent to the distributor insuring the artist, since if the royalties due never turn out to reach the up-front payment amount, then it is the distributor that suffers the loss.”).

147. See *id.* at 81 (noting how the creator’s lack of involvement in production and distribution under standard copyright agreements raises the question of how the resulting income will be shared).

more artists might become interested in selling equity shares à la carte—at least if regulatory hurdles could be surmounted.<sup>148</sup>

Liquidity needs are an important impetus for some of these REVEs, given that people are often unable to borrow against their own future earnings.<sup>149</sup> This raises the question of whether risk rearrangement is the best response to the liquidity crunch, or whether changes in lending practices would be preferable.<sup>150</sup> In some cases, though, risk buffering appears to be the dominant motive for selling equity shares in future earnings. Professional athletes with frontloaded earning profiles, for example, may be much more interested in hedging career-ending injuries than in generating extra liquidity.<sup>151</sup> Another alternative, of course, would be for athletes to expressly insure against the injury itself, a garden-variety form of ditch coverage.

It would also be possible for people to place bets on their future income increases, whether to intensify their own incentives or to signal a high level of confidence.<sup>152</sup> For example, a worker could pay the expected value of a possible future bonus to a reverse insurer who agrees to match the actual value of the bonus if the worker in fact receives it (a gravy gamble).<sup>153</sup>

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148. U.K.-based Bandstocks allows fans to invest in bands through their websites in exchange for specified benefits, including shares of the bands' future income. BANDSTOCKS, <http://www.bandstocks.dloadshop.com> (last visited Jan. 23, 2011); see also Owen Gibson, *Don't Just Buy the Music, Fans Told—Now You Can Invest in Big Names of the Future*, GUARDIAN (Aug. 27, 2008), <http://www.guardian.co.uk/business/2008/aug/27/musicindustry.investing> (reporting on Bandstocks). Other companies offering similar approaches include another U.K. company, SlicethePie, SLICETHEPIE, <http://www.slicethepie.com> (last visited Jan. 23, 2011), and Amsterdam-based Sellaband, SELLABAND, <http://www.sellaband.com> (last visited Jan. 23, 2011).

149. See, e.g., FRIEDMAN, *supra* note 144, at 102 (“Investment in human beings cannot be financed on the same terms or with the same ease as investment in physical capital.”). For discussion and critique of limits on the alienability of human capital, see generally Stewart E. Sterk, *Restraints on Alienation of Human Capital*, 79 VA. L. REV. 383 (1993).

150. For example, student loans represent one way in which people can effectively borrow against future earnings, and one that was historically facilitated by governmental involvement in guaranteeing loans. See Hockett, *supra* note 7, at 927–30. For discussion of loan products that blend risk rearrangement with liquidity, see *infra* text accompanying note 157.

151. Similarly, college athletes might be persuaded to delay entering the draft by insurance against the effect of injuries on their professional prospects, even though colleges are restricted from providing them with upfront cash payments. Thomas W. Hazlett & Joshua D. Wright, *Hell No, Don't Let Them Go!*, CHI. TRIB., May 8, 2008, at 25.

152. See Cooter & Porat, *supra* note 1, at 218–21 (describing “anti-insurance for gains”); see also *infra* text accompanying notes 267–69.

153. See Cooter & Porat, *supra* note 1, at 218–21 (explaining how incentives could be amplified in this manner through side deals with anti-insurers). As recent work by Michael

2. *Livelihood and Income Insurance.* Robert Shiller has proposed mechanisms that would allow people to hedge against changes in the profitability of a chosen profession, such as a particular scientific subspecialty.<sup>154</sup> His approach contemplates payouts that are not simply based on a given individual's career trajectory but that instead make use of indexes that capture trends within different fields.<sup>155</sup> Robert Hockett has similarly advocated significantly expanding the risk-management opportunities extended to workers and business owners through a suite of hedging instruments based on economic and social indicators.<sup>156</sup> Another set of proposals involves tying student-loan repayment obligations to future earnings in various ways.<sup>157</sup> Other sorts of private unemployment or "salary-gap" insurance have also been attempted, albeit with limited success.<sup>158</sup>

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Abramowicz and Ian Ayres demonstrates, the logic of Cooter and Porat's approach could also be extended to cases in which an event or outcome initially implicates the interests of only one person—such as a dieter who wishes to place a bet on losing weight. Abramowicz & Ayres, *supra* note 50, at 43–44.

154. SHILLER, *supra* note 4, at 107–13; *see also* Jedediah Purdy, *A Freedom-Promoting Approach to Property: A Renewed Tradition for New Debates*, 72 U. CHI. L. REV. 1237, 1272–78 (2005) (discussing Shiller's proposal).

155. SHILLER, *supra* note 4, at 112–13.

156. Robert Hockett, *Just Insurance Through Global Macro-Hedging: Information, Distributive Equity, Efficiency, and New Markets for Systemic-Income-Risk-Pricing and Systemic-Income-Risk-Trading in a "New Economy,"* 25 U. PA. J. INT'L ECON. L. 107, 214–26 (2004).

157. Federally guaranteed student loans now build in protection against low earnings by capping payments at 15 percent of the amount by which the borrower's income exceeds 150 percent of the poverty line and forgiving amounts remaining due after twenty-five years if payment requirements or other criteria are met (ten years if in public service); for loans issued after July 1, 2014, the payment cap will drop to 10 percent and the maximum time to forgiveness will be reduced to twenty years. Health Care and Education Reconciliation Act of 2010, Pub. L. No. 111-152, § 2213, 124 Stat. 1029, 1081 (amending 20 U.S.C. § 1098e); Mary Pilon, *Exploiting the New Student-Loan Rules*, WALL ST. J., May 8, 2010, at B8; *see also* MIGUEL PALACIOS LLERAS, INVESTING IN HUMAN CAPITAL: A CAPITAL MARKETS APPROACH TO STUDENT FUNDING 41–123 (2004) (exploring the possibility of "human capital contracts"); SHILLER, *supra* note 4, at 139–48 (discussing "income-linked loans"); E.G. West, *The Yale Tuition Postponement Plan in the Mid-Seventies*, 5 HIGHER ED. 169, 169–75 (1976) (analyzing Yale's income-contingent loan program); Ron Lieber, *Aid for Students Facing Mountain of Debt*, N.Y. TIMES, Aug. 15, 2009, at B1 (reviewing past proposals and a new innovation called "SafeStart" that would provide an interest-free credit line to repay student loans if earnings are low in the early years out of school).

158. *See* Ron Lieber, *Insure Yourself Against a Job Loss? Good Luck.*, N.Y. TIMES, Aug. 8, 2009, at B1 (surveying some attempted and proposed programs). Private insurance against one manifestation of unemployment is found in Hyundai's recent "assurance" program permitting car buyers who finance or lease their vehicles to return them upon job loss (and other specified events) for up to one year without being responsible for up to \$7,500 in negative equity.

Publicly provided unemployment insurance and means-tested social welfare benefits represent embedded mechanisms for buffering downside income and employment risk, justified in part by the difficulty of sustaining private markets in these types of insurance.<sup>159</sup> All of these alternatives fall within the domain of ditch coverage, at least insofar as continued employment and past returns to a profession represent the operative baselines.

3. *Reverse Insuring Poverty and Unemployment.* People might also wish to engage in REVEs that involve ceding future claims against the social safety net in exchange for expected value payments—a form of ditch exposure. Such exchanges are generally viewed as problematic, for reasons that will be developed below.<sup>160</sup> Nonetheless, a small-scale version of reverse insurance is quietly dispensed through many state welfare programs: families with acute, short-term needs can elect to receive a one-time lump sum payment in exchange for temporarily forgoing the right to seek regular monthly benefit payments under the Temporary Assistance for Needy Families (TANF) program.<sup>161</sup> Although such families are already suffering from a covered event under the social-insurance scheme (poverty), the full extent and impact of the event is typically unknown at the time of the election. After receiving the cash payment, the family must bear whatever losses eventuate during the period in which they are precluded from seeking TANF benefits.<sup>162</sup>

To take another example, consider the fact that some jobs come with a form of implicit insurance against termination except for limited reasons. The tenure protection extended to university

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*Assurance Homepage*, HYUNDAI, <http://www.hyundaiusa.com/assurance/index.aspx> (last visited Jan. 23, 2011).

159. See Gillian Lester, *Unemployment Insurance and Wealth Redistribution*, 49 UCLA L. REV. 335, 362–65 (2001) (discussing difficulties in privately insuring against unemployment).

160. See *infra*

professors is a classic example. Undoing this insurance through ditch-exposure transactions would involve currently tenured professors accepting a sum of money in exchange for being exposed to the same risk of termination as an at-will employee.<sup>163</sup>

### E. *Health and Quality of Life*

Health insurance is a familiar, if often controversial, form of ditch coverage. Yet a number of less conventional possibilities exist for addressing risk associated with health and other aspects of one's quality of life. Some of these alternatives could change the terms of the health-insurance debate in fundamental ways. One set of ideas squarely confronts the fact that, as people move through time, they learn new information about their likely health risks. People might wish to insure against the higher insurance rates that such new information will produce by purchasing insurance against future high insurance premiums.<sup>164</sup> These are standard ditch-coverage transactions, but they reach risks that presently either go unaddressed or are approached clumsily through limits on insurance risk classifications or exclusions.<sup>165</sup> There are limits to this approach, however, given the impossibility of initiating coverage before at least some important information about health risks becomes known.<sup>166</sup>

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163. Steven Levitt, for example, has stated that he would gladly give up tenure for a \$15,000 salary increase. Steven D. Levitt, *Let's Just Get Rid of Tenure (Including Mine)*, FREAKONOMICS (Mar. 3, 2007, 11:31 PM), <http://freakonomics.blogs.nytimes.com/2007/03/03/lets-just-get-rid-of-tenure>.

164. See, e.g., David M. Cutler & Richard Zeckhauser, *Extending the Theory to Meet the Practice of Insurance*, 2004 BROOKINGS-WHARTON PAPERS ON FIN. SERVICES 1, 21 (noting the potential appeal of such coverage as well as its rarity). For example, "gene insurance" procured before genetic testing occurs would enable individuals to affordably purchase health insurance that is accurately priced based on genetic information. See Alexander Tabarrok, *Gene Insurance*, in ENTREPRENEURIAL ECONOMICS: BRIGHT IDEAS FROM THE DISMAL SCIENCE 47, 47-48 (Alexander Tabarrok ed., 2002); see also John H. Cochrane, *Time-Consistent Health Insurance*, in ENTREPRENEURIAL ECONOMICS, *supra*, at 53, 55 (describing how insurance contracts with periodic payouts keyed to changes in expected lifetime health costs would enable insureds to pay higher premiums or negotiate lower premiums as information about health prospects emerges); Reed Abelson, *UnitedHealth to Insure the Right to Insurance*, N.Y. TIMES, Dec. 2, 2008, at B1 (describing a policy that allows a consumer to buy insurance at a later date); Tyler Cowen, *Insurance Markets in Everything*, MARGINAL REVOLUTION (Dec. 3, 2008, 10:02 AM), <http://www.marginalrevolution.com/marginalrevolution/2008/12/insurance-marke.html> (discussing the UnitedHealth policy).

165. See, for example, the discussion of limits on genetic information at *infra* text accompanying notes 227, 294-95.

166. As Richard Zeckhauser notes, "even infancy is too late for contracting" to spread health risks fully; "[b]y the time a child is born, his catastrophic health needs are determined to



Another set of ideas builds on the notion that money may produce less marginal utility in the ill state than in the well state.<sup>167</sup> For example, expensive travel may become unenjoyable if one is suffering from a debilitating and untreatable disease. Thus, someone who loves to travel might wish to move money from the state of the world in which she is sick (in ways that money cannot remediate) to the state of the world in which she is healthy. Richard Zeckhauser describes one manifestation of this idea—a kind of “commune” in which elderly people contribute to a fund that is earmarked for whoever among them remains healthy enough to enjoy using the money.<sup>168</sup> This transaction spans the rows in Figure 3, giving an individual participant a chance at more money while healthy (an event-enhancing move that might be characterized as either ditch coverage or a gravy gamble),<sup>169</sup> funded by an event-detracting REVE (which might be characterized as either ditch exposure or a gravy giveup).<sup>170</sup>

Many other variations are imaginable. Suppose, for example, a senior citizen has a 50 percent chance of developing a mobility impairment that will cause him to prefer living in a very small one-level apartment; otherwise, he would prefer to live in a stylish, multi-level house that he cannot currently afford. An investor might enter

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a substantial extent in the statistical sense.” Zeckhauser, *supra* note 30, at 159. It might be possible to move coverage earlier than birth or even conception. For example, Kyle Logue and Joel Slemrod have suggested that parents might purchase pre-conception “genetic endowment insurance.” Kyle Logue & Joel Slemrod, *Genes as Tags: The Tax Implications of Widely Available Genetic Information*, 61 NAT’L TAX J. 843, 859 (2008). But even this pre-conception insurance might come too late given the effect of the parents’ genetic endowments on their children’s expected genetic endowments.

167. See, e.g., Viscusi & Evans, *supra* note 34, at 371 (positing that less than full wage replacement is optimal for worker’s compensation because “the marginal utility of income is lower in the ill health state,” and finding, using two approaches based on worker survey data, that “the marginal utility of a given level of income was greater when healthy than when injured”).

168. Zeckhauser, *supra* note 30, at 157.

169. On one view, the transaction insures one against running out of funds during a period of continued good health, when such funds are especially necessary and utility producing. This interpretation would line up at least roughly with ditch coverage. The idea is analogous to that behind an annuity, where the hazard in question is outliving one’s wealth. See *id.* (describing annuities as “anti-life insurance”). An alternative interpretation would be that one is buying a lottery ticket that may provide an upside payoff to augment the good luck of remaining healthy; this would amount to a gravy gamble.

170. One might view the agreement to give up funds in the event of poor health as leaving one exposed to an unremediated ditch. If money is less utility producing when one is in a state of poor health, however, the forgone funds may represent a form of gravy that one would rather sell off one’s rights to receive.

into an arrangement with him whereby she will cover half the cost of the multi-level home, conditional on the senior citizen turning the home over to her as sole owner in the event the impairment develops.<sup>171</sup> Such approaches have the interesting feature of encouraging the production of accurate information about possible health states, given that this information offers a source of financial leverage.<sup>172</sup>

Relatedly, a REVE might address concerns about the proportion of health care dollars spent on end-of-life health care when quality of life may be low.<sup>173</sup> Suppose that a screening procedure indicates that a patient has a 10 percent chance of developing condition X. If condition X develops, the patient could extend her life by roughly three months through treatment that costs \$500,000; however, she would be in significant discomfort during most of that time. If her health insurance covers this treatment, she is effectively holding a claim worth the present value equivalent of \$50,000 in medical treatment. Suppose the patient could trade in her claim to this expensive end-of-life treatment at the time of screening for a payment that she can use during the disease's latency period, or for a payment that she (or her estate, if X develops) will enjoy at the end of the latency period. Such an approach would constitute a form of partial

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171. The "housing partnerships" idea developed by Andrew Caplin and his coauthors similarly contemplates investors going in with homeowners on their home purchases and sharing rights to equity, although for different reasons and pursuant to different sharing rules. See generally ANDREW CAPLIN, SEWIN CHAN, CHARLES FREEMAN & JOSEPH TRACY, *HOUSING PARTNERSHIPS: A NEW APPROACH TO A MARKET AT A CROSSROADS* (1997). Another analogue is found in schemes in which an elderly individual signs over rights to a property upon her death (in effect, selling the home subject to a reserved life estate). See Flavia Kraus-Jackson & Flavia Rotondi, *Death Offers Lifeline to Italian Property as Economy Worsens*, BLOOMBERG (Feb. 25, 2009, 6:01 PM), <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a46kTFrO8guY&ref> (describing "nude sales" in which ownership passes but the seller has the right to life-long occupancy). More generally, future interests in land embed risk allocations. Again, the life estate is a prime example insofar as it provides a hedge to the beneficiary occupying the property and moves actuarial risk to the party holding the residual claim. See Adam J. Hirsch, *Spendthrift Trusts and Public Policy: Economic and Cognitive Perspectives*, 73 WASH. U. L.Q. 1, 58 n.210 (1995); see also Adam J. Hirsch & William K.S. Wang, *A Qualitative Theory of the Dead Hand*, 68 IND. L.J. 1, 35–36 (1992) (noting the risk-shifting characteristics of contingent or defeasible interests).

172. For a discussion of how new hedging markets could spur information production, see Hockett, *supra* note 156, at 228–30.

173. Whether too much is spent at the end of life is a difficult question. For a recent economic analysis of terminal care, see generally Tomas J. Philipson, Gary Becker, Dana Goldman & Kevin M. Murphy, *The Value of Life Near Its End and Terminal Care* (Nat'l Bureau of Econ. Research, Working Paper No. 15649, 2010), available at <http://www.nber.org/papers/w15649.pdf>.

reverse insurance that might be framed either as a REVE that exposes the patient to a ditch (the untreated condition X) or as one in which the patient gives up a form of (unpalatable) gravy (the treatment for condition X).

Health is not the only aspect of well-being that might be addressed through new REVEs. For example, family configurations carry an enormous potential to alter one's need for, and utility from, money. Although there are obvious impediments to insuring against events like divorce or child-bearing, some hedging might still occur in these areas, whether through social policy or private innovations.<sup>174</sup> On the more quotidian end of the spectrum, betting on sports events is a familiar way to add risk to one's life; it is also possible that people might want to hedge utility losses by betting against their favorite teams.<sup>175</sup> A recently introduced variation is insurance that participants in fantasy sports leagues can purchase against injuries sustained by the players they have selected.<sup>176</sup> Individuals and households might ultimately be able to hedge a broad range of risks to their well-being, from a shortage of sunny days<sup>177</sup> to population, income, or crime trends in their current or future communities.<sup>178</sup> Alternatively, people

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174. For example, social policies that direct resources toward those raising children have the effect of buffering some of the financial impacts of procreation. Family law, too, can affect the ways in which certain risks are allocated among individuals, families, and society as a whole. See generally Anne L. Alstott, *Private Tragedies? Family Law as Social Insurance*, 4 HARV. L. & POL'Y REV. 3 (2010). Private shifting of familial risks might also be attempted. One company has announced plans to offer a "guaranty" on marriage. *Marriage Insurance*, SAFEGUARD GUARANTY CORP., <http://www.safeguardguaranty.com/Investors3.html> (last visited Jan. 23, 2011); see also Robin Hanson, *Marriage Futures*, OVERCOMING BIAS (Oct. 22, 2007, 6:00 AM), <http://www.overcomingbias.com/2007/10/marriage-future.html> (discussing the potential market for "marriage futures"); Dave Hoffman, *Should You Buy Divorce Insurance?*, CONCURRING OPINIONS (Aug. 2, 2007, 11:44 AM), [http://www.concurringopinions.com/archives/2007/08/should\\_you\\_buy\\_1.html](http://www.concurringopinions.com/archives/2007/08/should_you_buy_1.html) (discussing obstacles to divorce insurance and describing SafeGuard's product as an "investment vehicle," not insurance).

175. See Philip J. Cook & Daniel A. Graham, *The Demand for Insurance and Protection: The Case of Irreplaceable Commodities*, 91 Q.J. ECON. 143, 149 n.14 (1977).

176. Nando Di Fino, *A New Kind of Pocket Protection*, WALL ST. J., Sept. 1, 2009, <http://online.wsj.com/article/SB10001424052970203550604574360691019757738.html>.

177. Weather futures have already claimed an important niche market among those in weather-sensitive industries. See, e.g., *Come Rain or Come Shine*, ECONOMIST, Feb. 10, 2007, at 78, 78-79; Weather Products, CME GROUP, <http://www.cmegroup.com/trading/weather> (last visited Jan. 23, 2011); see also Croley & Hanson, *supra* note 1, at 1796-97 (presenting a hypothetical in which people might wish to reallocate sunshine across different states of the world).

178. See, e.g., Hockett, *supra* note 156, at 214-25 (illustrating some of these possibilities by discussing the risks a hypothetical couple faces as they move through life). To the extent that these factors are capitalized into property values or salaries, some of the other mechanisms

might consciously add risk to their everyday lives in ways that would intensify gains or deepen losses, whether to provide themselves with optimal incentives to engage in certain behaviors<sup>179</sup> or to get a chance at an indivisible or “lumpy” gain.<sup>180</sup>

### III. EFFICIENCY AND RISK CUSTOMIZATION

The discussion to this point has emphasized both the existing gaps and asymmetries in risk markets, and the growing interest among both scholars and entrepreneurs in finding ways to fill them in. Law can take a variety of stances toward these developments, from maintaining or toughening prohibitions on REVEs, to replacing outright bans with liability rules,<sup>181</sup> to loosening or lifting restrictions, to subsidizing or otherwise facilitating the development of new risk markets, to setting up government-provided opportunities to trade in unbundled risk.

Broadly speaking, there are three sets of costs that legal policy must take into account when deciding how much risk customization to allow or encourage.<sup>182</sup> First are the costs associated with a default

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discussed above would buffer the risks associated with them. For a discussion of the capitalization of local goods and services into home values, see WILLIAM A. FISCHER, *THE HOMEVOTER HYPOTHESIS* 39–51 (2001). For an analysis of the degree to which local laws are capitalized into property values and wages, see generally Anup Malani, *Valuing Laws as Local Amenities*, 121 *HARV. L. REV.* 1273 (2008).

179. See generally Cooter & Porat, *supra* note 1. For interesting elaborations and extensions of this approach, see generally Abramowicz & Ayres, *supra* note 50.

180. A good is “lumpy” if it exhibits indivisibilities, so that having a mere portion of the good does not deliver a proportionate amount of utility. See, e.g., Michael Taylor & Hugh Ward, *Chickens, Whales, and Lumpy Goods: Alternative Models of Public-Goods Provision*, 30 *POL. STUD.* 350, 353 (1982) (discussing public goods that “cannot be usefully provided in any amounts but only in more or less massive ‘lumps’”). A desire for indivisible blocks of consumption provides one possible explanation for lottery play. A formal exploration of this point is provided in Ng Yew Kwang, *Why Do People Buy Lottery Tickets? Choices Involving Risk and the Indivisibility of Expenditure*, 73 *J. POL. ECON.* 530 (1965); see also Edward J. McCaffery, *Why People Play Lotteries and Why It Matters*, 1994 *WIS. L. REV.* 71, 99–105 (discussing the “indivisibility of expenditure” rationale for risk seeking through lotteries). The same basic idea likely supports many other gambles—for instance, betting on one’s team to win, where the money to fund a really good celebration and the psychic payoff of a win are complementary goods. See Cook & Graham, *supra* note 175, at 149 n.14 (noting the relevance of wealth-related changes in the value of a win to betting decisions). People might also bet on good vacation weather, favorable medical outcomes, or any other event or condition with consequences that would increase the marginal utility of money.

181. See Calabresi & Melamed, *supra* note 23, at 1092 (defining liability rules).

182. Cf. Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 *YALE L.J.* 1, 24–42 (2000) (examining optimal

or mandatory risk allocation that is suboptimal for at least some interactions. Affected parties must bear either the cost of the suboptimal allocation (which may include the cost of altering consumption or activity choices in an effort to adjust risk obliquely), or the cost of moving away from the default—whichever is less. Easing moves away from the default allocation would reduce these costs, but it could also facilitate inefficient risk shifts, whether due to mistakes, cognitive biases, or externalities. Thus, a second category of costs is made up of mistaken or socially harmful risk reallocations from a given starting point. A third set of costs stems not from any particular risk arrangement but rather from heterogeneity in risk arrangements within a particular domain.

In considering these costs and their relationships to each other and to legal policy, a threshold question inevitably arises: has the status quo already gotten it at least roughly right, so that most (if not all) of the missing entries in the risk menu “deserve” to be missing? If so, then perhaps the first category of costs, those stemming from suboptimal risk allocations, is a null set once the problems associated with the missing alternatives are taken into account. Risk markets that are not observed even though they are legally permitted<sup>183</sup> seem especially vulnerable to this criticism. Thus, I will start by considering why a presently absent risk endstate might be either unsustainable or unattainable, notwithstanding its legal availability. Next, I will turn to the second category of costs—those that result from parties choosing risk allocations that harm themselves or others—to determine whether legal prohibitions track these concerns. Finally, I will examine the potential costs of heterogeneity as such.

#### A. *Unsustainable or Unattainable Risk Endstates*

REVEs are used to move from an existing risk allocation to a new one. The Subsections below consider reasons why an endstate arrangement might be difficult to reach or sustain, not all of which carry equivalent implications. If a new allocation cannot be successfully sustained over time because its costs exceed its benefits, nothing is lost by not being able to move to it. But the present

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standardization in the property context by weighing “frustration costs” to the parties of limited forms against the costs that customization may impose on the system and on third parties).

183. “Legally permitted” turns out not to be a binary on/off classification, given that innumerable regulatory frictions, as well as asymmetries in the delivery of tax benefits and the like, can discourage new arrangements without banning them outright.

unattainability of a risk endstate does not necessarily signal its social worthlessness; remediable distortions (such as the inability to internalize the benefits of offering an innovative arrangement) may instead be responsible.<sup>184</sup>

1. *Moral Hazard.* Certain REVEs might not emerge because the underlying risk arrangements they bring about cannot be profitably offered due to moral-hazard concerns. Moral hazard refers to the tendency of those insured against a loss to do less to avoid that loss than they would if they had to fully bear it.<sup>185</sup> The problem emerges when a particular hazard or potentiality blends together factors under a party's control with those that are not under her control. Kenneth Arrow has accordingly characterized the moral-hazard problem as one of incomplete risk definition.<sup>186</sup> Although often kept within acceptable bounds through measures like deductibles, copayments, coverage limitations, and monitoring,<sup>187</sup> moral hazard can make private insurance markets difficult or impossible to sustain in some cases. Even if the controllable and uncontrollable aspects of a given event can be defined in the abstract, informational and administrative difficulties may make isolation of these components prohibitively costly or impracticable.<sup>188</sup> Thus, there may be instances in which REVEs are not feasible because the risk in question simply cannot be

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184. Pinpointing exactly what causes certain kinds of financial markets to thrive while others fail is notoriously difficult. *See, e.g.*, Susan J. Smith, *Managing Financial Risks: The Strange Case of Housing*, in *MANAGING FINANCIAL RISKS: FROM GLOBAL TO LOCAL* 233, 240–42, 250 (Gordon L. Clark, Adam D. Dixon & Ashby H.B. Monk eds., 2009) (noting various possibilities and observing that “most experts agree that there is always a ‘factor 13’—an element that defies generalization, yet which *can* be accounted for” among the conditions supporting a successful new derivatives market).

185. *See* Kenneth J. Arrow & Robert C. Lind, *Uncertainty and the Evaluation of Public Investment Decisions*, 60 *AM. ECON. REV.* 364, 366 (1970) (“[T]he fact that someone has insurance may alter his behavior so that the observed outcome is adverse to the insurer.”).

186. *See* ARROW, *supra* note 7, at 142 (identifying the moral-hazard problem as accompanying situations where “the risk-bearer cannot completely define his risks” and instead “only observes a result which is a mixture of the unavoidable risk, against which he is willing to insure, and human decision”); KENNETH J. ARROW, *Uncertainty and the Welfare Economics of Medical Care*, in *ESSAYS IN THE THEORY OF RISK-BEARING*, *supra* note 7, at 177, 202 (explaining that it would be better if “the event against which insurance is taken [were] out of the control of the individual,” but noting that “[u]nfortunately, in real life this separation can never be made perfectly”).

187. *See* ARROW, *supra* note 7, at 142–43.

188. For example, a potential tort victim in a strict liability regime might wish to contract with her potential injurer to downgrade coverage to negligence only, yet this customization would be unworkable unless courts in such regimes were willing to make negligence determinations. I thank Saul Levmore for discussions on this point.

unbundled from components under individual control to the degree necessary to support a market transaction.<sup>189</sup>

Although moral hazard is a powerful consideration that bears on the viability of markets in risk, it does not appear to be a likely explanation for the patterns of missing REVEs observed in the real world. Significantly, REVEs can resolve as well as introduce moral-hazard problems. Most obviously, a REVE can place risk on the party best positioned to influence outcomes (or on more of the parties whose behavior is relevant to the outcome) when the law's default position fails to do so. Indeed, where insurance produces a risk of moral hazard, reverse insurance does the opposite, reviving incentives to take due care by exposing parties to the full effects of their risk-taking actions. Thus, the relative dearth of reverse-insurance opportunities seems to require some explanation other than garden-variety moral-hazard concerns.

One potential concern is illustrated well by unmatured tort claims: if a victim has sold her claim, will she participate wholeheartedly in litigation to recover damages for it? Will she even bother to report the event? Interestingly, the concern here is not with the effects of the reverse-insurance transaction as such but rather with the implicit insurance it generates in the linked litigation arena. A risk that ordinarily falls on victims—that the litigation process will not return damages that fairly reflect realized events—has been effectively transferred to the claim purchaser along with the tort claim itself. This implicit insurance may induce those who are covered to do too little to avoid the risk of a loss (here, the loss from litigation failure). But the problem could presumably be addressed through the kinds of measures that insurers already routinely take: contractual restrictions, partial coverage, and the like. Similar points can be made about risk rearrangements in other contexts. Homeowners who transfer home-value risk or appreciation potential to investors, for example, may be less concerned with selling their home for a good price—a problem that could be addressed by presumptively basing

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189. Innovation could change the cost calculation, however. See SHILLER, *supra* note 4, at 72–73, 222–25 (discussing advances in indexes and their role in risk innovation); Lior Jacob Strahilevitz, “How’s My Driving?” for Everyone (and Everything?), 81 N.Y.U. L. REV. 1699, 1726–29, 1752–54 (2006) (describing the potential role of new forms of monitoring and information sharing in the pricing of risk).

payouts on area home-price indexes or by granting a right of first refusal to the investors involved.<sup>190</sup>

David Friedman has also observed that a form of “reverse moral hazard” could produce difficulties for reverse-insurance markets despite the social efficiency of the added care.<sup>191</sup> Friedman explains that people who sell their claims will take additional precautions that, albeit socially desirable, lower the value of the claim to the buyer below the value demanded by the seller, a reduction that “may prevent the sale.”<sup>192</sup> To see this point, consider a potential tort victim, Vera, who sells her unmatured claim. Because of the implicit insurance provided by the tort system, Vera begins with an entitlement package that effectively permits her to indulge in some degree of moral hazard. Once Vera sells her claim and will have to bear her own actual losses, however, she will take optimal, not suboptimal, precautions. Knowing this, a third-party reverse insurer will price the claim based on optimal precaution levels, giving Vera nothing for her added precaution costs. Of course, the potential injurer in the story (who will have to compensate the reverse insurer in the event of a loss) benefits from Vera’s changes in care levels, and thus should be willing to kick in an additional portion to subsidize the sale. But the added transaction costs associated with arranging this side payment may keep the deal from occurring.<sup>193</sup>

Interestingly, it is precisely where the gains from reverse insurance are the greatest (that is, where the moral-hazard problem that would be relieved is the largest) that this phenomenon would drive the largest wedge between what the person selling a claim would be asked to give up and what the person buying the claim would be willing to pay. Because the potential social gains would be so great in that context, mechanisms for lowering transaction costs might prove worthwhile if they could be devised. Formulating them could implicate another issue that has broader significance in risk markets—innovation costs expended on gains that might not be fully realized by the innovator.

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190. See CAPLIN ET AL., *supra* note 171, at 136–38 (proposing a right of first refusal in the housing partnership context); Robert J. Shiller & Allan N. Weiss, *Moral Hazard in Home Equity Conversion*, 28 REAL EST. ECON. 1, 2, 27–28 (2000) (suggesting the use of home-price indexes in arrangements for shifting home-value risk).

191. Friedman, *supra* note 33, at 93 n.13.

192. *Id.*

193. See *id.* at 91.



2. *Innovation Costs.* Developing innovative new products often requires significant upfront expenditures on research and marketing, but may fail to produce the hoped-for returns.<sup>194</sup> Demand may be lacking, or the business model may prove less profitable than expected. Potential changes in the legal and regulatory environment—as well as the untested application of existing laws—represent additional sources of uncertainty for new risk-management products. In other words, designing a REVE is itself a risky enterprise. Even if the risk pays off and a new REVE is successful, the ability of others to quickly copy the successful business model will diminish the returns to the innovator.<sup>195</sup> If this factor is important in explaining missing REVEs markets, innovation could be encouraged through subsidies offered ex ante<sup>196</sup> or through intellectual property protections provided ex post.<sup>197</sup>

3. *Switching, Searching, and Social Norms.* Additional barriers to REVEs might include search costs,<sup>198</sup> switching costs,<sup>199</sup> and social norms. For example, if people feel pressure to configure risk similarly

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194. See Michael Abramowicz & John F. Duffy, *Intellectual Property for Market Experimentation*, 83 N.Y.U. L. REV. 337, 354–60 (2008) (analyzing potential impediments to market experimentation).

195. In this respect, risk innovation resembles a public good that the private market may be likely to underprovide. See ROBERT J. SHILLER, *MACRO MARKETS: CREATING INSTITUTIONS FOR MANAGING SOCIETY'S LARGEST ECONOMIC RISKS* 207–08 (1993) (discussing the “tendency for under-investment in the creation of new markets”).

196. *Id.* at 208 (“The establishment of new markets, because of the public nature of its benefits, is one of the most fitting places for government subsidy.”).

197. See Abramowicz & Duffy, *supra* note 194, at 361–71 (modeling the effects of intellectual property protections on market experimentation and illustrating this point in the context of markets for new products).

198. The more difficult it is for an individual to learn about an alternative to the status quo, or the less “available” to her are the concerns to which that alternative responds, the less likely she will be to engage in a REVE. See Johnson et al., *supra* note 19, at 39–42 (discussing the role of mental “availability” of risks in a variety of insurance contexts); Howard Kunreuther, *Limited Knowledge and Insurance Protection*, 24 PUB. POL’Y 227 (1976) (observing that people in flood- and earthquake-prone areas often lack awareness of the relevant risks and of the availability and cost of insurance).

199. Switching from one risk arrangement to another may induce regret if it turns out badly; knowing this, people may avoid change. See Robert E. Scott, *Error and Rationality in Individual Decisionmaking: An Essay on the Relationship Between Cognitive Illusions and the Management of Choices*, 59 S. CAL. L. REV. 329, 340 (1986) (describing how “regret aversion” may lead people to avoid making choices). For an examination of the potential effect of anticipated regret on new markets in housing risk, see Robert J. Shiller, *Derivatives Markets for Home Prices* 17–20 (Nat’l Bureau of Econ. Research, Working Paper No. 13962, 2008), available at <http://www.nber.org/papers/w13962.pdf>.

to others in their reference group, this could raise the cost of switching to an unconventional alternative. In addition, certain unfamiliar risk-shifting arrangements may generate visceral distaste.<sup>200</sup> Such factors are potentially malleable,<sup>201</sup> but they may nonetheless reduce the demand for certain REVEs or raise the reputational cost of offering them.<sup>202</sup>

The same factors that can impede the spread of REVEs may support their adoption under certain circumstances. For example, scholarship examining decisions to obtain or do without flood or earthquake insurance suggests a quite significant role for word-of-mouth communications about insurance purchases.<sup>203</sup> These contacts may not only lower search costs, but may also help establish and communicate social norms about insurance.<sup>204</sup> Given the potential effects of learning and of interdependence in choices, it is difficult to infer from the absence of a REVE market that such a market would ultimately prove unsuccessful.

4. *Framing.* Finally, framing effects may cause individual actors, or even society as a whole, to reject alternatives simply because they involve moves in an unaccustomed direction. For example, allowing people to shed insurance coverage that is embedded in the existing tort regime (such as that covering pain and suffering) may seem highly suspect until one imagines a world in which that coverage is

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200. Bets that involve life and death seem to produce especially strong reactions, and markets in everything from life insurance to predictions of terrorism risks have been affected. See Michael Pereira, *Risk Management for the Age of Information*, 9 FORDHAM J. CORP. & FIN. L. 715, 732–33 (2004) (reviewing SHILLER, *supra* note 4) (noting the negative public response to efforts by the Pentagon’s Defense Advanced Research Projects Agency to establish a predictions market for Middle Eastern political events); Roth, *supra* note 96, at 41–42 (discussing the implications of “[r]epugnance to betting on life and death” for a variety of markets).

201. See Roth, *supra* note 96, at 38 (observing that transactions may be considered “repugnant in some times and places and not in others”); see also *id.* at 39 tbl.1 (listing repugnant transactions, past and present). The distaste associated with some kinds of REVEs may ultimately prove transient. See, e.g., *id.* at 41 (observing that life insurance “seems to have had to overcome initial repugnance in the early 1800s”).

202. See Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2040 (1996) (suggesting that people’s reluctance to insure against certain losses could be a function of social norms).

203. See, e.g., Kunreuther & Pauly, *supra* note 19, at 76–77.

204. See *id.* at 77 (citing Cass R. Sunstein, *Social Norms and Social Roles*, 96 COLUM. L. REV. 903 (1996)); *id.* at 96. Some of these peer effects may relate to predictions about how forthcoming outside assistance will be in the event of a loss; the more unusual it is to be uninsured, the less likely one might judge such assistance. *Id.*

not provided and asks whether everyone should be forced to buy it anew.<sup>205</sup> Similarly, risks that are currently part of standard legal bundles, such as the housing-market volatility that accompanies homeownership, may be unthinkingly accepted. Shedding that risk seems odd—at least until one asks whether, given the choice, a typical family would buy shares anew that would deliver payouts based on factors like the actions of their local government, changes in the regional labor market, and the movement of other economic indicators that affect the local housing market.<sup>206</sup>

Seeing REVEs in action can encourage people to ask such “repurchase” questions. If unbundled risk transactions become more commonplace, and if the frame-flipping that they encourage becomes more reflexive, society might see advances in how people think about risk bearing. Risk allocations that now appear as simply part of the background conditions against which decisions are made might become visible as conscious choices—arrangements that could be otherwise. This argument suggests that widespread private risk trading could have some characteristics of a public good, to the extent that it helps to build a culture in which the risk-bearing characteristics of situations are noticed and actively considered. Put differently, it raises the intriguing possibility that lack of interest in some REVEs is, at least in part, a product of existing arrangements—a failure of imagination rather than well-informed disinterest.<sup>207</sup>

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205. Even if some people would value such coverage, there is reason to believe that many others would not. Whether demand for such coverage would exist in the absence of tort law has been the subject of much scholarly discussion. For an overview of the literature on this question and some new empirical findings, see generally Ronen Avraham, *Should Pain-and-Suffering Damages Be Abolished from Tort Law? More Experimental Evidence*, 55 *TORONTO L. REV.* 941 (2005). For further discussion, see Cooter, *supra* note 2, at 388–94; and Schwartz, *supra* note 34, at 364–67.

206. See William A. Fischel, *Why Are There NIMBYs?*, 77 *LAND ECON.* 144, 146 (2001) (analogizing the purchase of a home to the purchase of undiversified stock in the local housing market).

207. See FRIEDMAN, *supra* note 144, at 103–04 (suggesting that high administrative costs may not fully explain the lack of equity markets in human capital, and that other factors—such as “the novelty of the idea,” “the reluctance to think of investment in human beings as strictly comparable to investment in physical assets,” and legal and other limitations—may play an important role); Hockett, *supra* note 7, at 946–47 (suggesting that factors such as inertia and lack of imagination may explain missing markets in risk); Hockett, *supra* note 156, at 218 (observing that, in the context of risk markets, “[t]he imaginative space in which demands are formed is itself in part a function of what is already supplied”); Robert J. Shiller, *Radical Financial Innovation*, in *ENTREPRENEURSHIP, INNOVATION, AND THE GROWTH MECHANISM OF THE FREE-ENTERPRISE ECONOMIES* 306, 320 (Eytan Sheshinski, Robert J. Strom & William Baumol eds., 2007) (noting psychological barriers to the adoption of new risk-management

## B. *Socially Costly REVEs*

In some cases REVEs are unavailable due to legal prohibitions. To the extent that these prohibitions are binding (that is, they block transactions that would otherwise occur), the expected justification would involve unaccounted-for costs placed on parties other than those directly engaged in the transaction or, perhaps, on temporal selves that are not well represented in the transaction. The Subsections below examine how well these concerns about externalities and internalities map onto existing legal prohibitions.

1. *Externalities.* In some cases, a party who purports to accept a given risk can actually offload part or all of any resulting loss onto others.<sup>208</sup> Consider, for example, insurance requirements designed to counter the problem of judgment-proof defendants.<sup>209</sup> A tortfeasor's choice to do without insurance, if she is otherwise unable to pay for the damage she does, shifts the loss to another party. Similarly, because the need to resort to social insurance can often be reduced by purchasing or retaining other forms of insurance, the decision to go uninsured (or to give up one's coverage for an expected value payment) can impose externalities on others.<sup>210</sup> The government, as "insurer of last resort,"<sup>211</sup> has an interest in precluding risk taking that

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mechanisms and suggesting that innovative framing could overcome them); Smith, *supra* note 184, at 242–45 (discussing potential "cultural economy" explanations for why housing derivatives have been slow to catch on); *see also supra* Part III.A.2–4.

208. *See* CALABRESI, *supra* note 1, at 58–59 (explaining that because "often the individual does not have to bear all the costs that result if he chooses to leave losses unspread," it may be socially desirable to compel certain forms of insurance). As the recent financial meltdown has underscored, the problem of purporting to take on risk that one will not actually have to bear is by no means limited to individuals; it extends all the way up to entities considered "too big to fail."

209. *See id.*; Mattias K. Polborn, *Mandatory Insurance and the Judgment-Proof Problem*, 18 INT'L REV. L. & ECON. 141, 143–44 (1998); S. Shavell, *The Judgment Proof Problem*, 6 INT'L REV. L. & ECON. 45, 54 (1986). *See generally* Steven Shavell, *Minimum Asset Requirements and Compulsory Liability Insurance as Solutions to the Judgment-Proof Problem*, 36 RAND J. ECON. 63 (2005) [hereinafter Shavell, *Minimum Asset Requirements*] (analyzing and comparing minimum asset requirements and mandatory liability insurance as approaches to the problem of judgment-proof defendants).

210. To the extent social insurance increases the tendency to do without private insurance, the problem is one of moral hazard. *See supra* Part III.A.1.

211. The government is often referred to in these terms. *See, e.g.*, ARYE L. HILLMAN, PUBLIC FINANCE AND PUBLIC POLICY: RESPONSIBILITIES AND LIMITATIONS OF GOVERNMENT 340 (2003); MOSS, *supra* note 7, at vii, 257; *cf.* TERESA A. SULLIVAN, ELIZABETH WARREN & JAY LAWRENCE WESTBROOK, AS WE FORGIVE OUR DEBTORS: BANKRUPTCY AND CONSUMER CREDIT IN AMERICA 173–74 (1989) (characterizing bankruptcy

would be expected to increase its losses. Just as private insurers might mandate deadbolts or fire extinguishers to avoid losses, the government might specify the purchase and use of certain insurance products.

Thus, society's normative commitment to provide some baseline of support can explain why people are not permitted to cash out the expected value of their future social insurance payments.<sup>212</sup> In other words, people are legally precluded from taking on downside risk that would cut into their very basic subsistence needs. If society wishes to provide insurance against such risks (rather than merely provide its cash equivalent), the claim to those benefits must be made inalienable. The provision of some baseline level of social insurance does not, however, explain why claims to payoffs that exceed that level should not be alienable.

Other laws preclude debtors from accepting the full risk of default. For example, personal bankruptcy laws require creditors to retain some of the risk associated with a debtor's enterprises.<sup>213</sup> Similarly, laws forbidding recourse against a homeowner's other assets in the event of foreclosure can cause losses associated with the downward movement of home prices to fall on parties other than homebuyers.<sup>214</sup> These laws precluding complete risk-bearing are presumably designed to avoid the societal spillovers that would result

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as "an insurer of last resort"). For a detailed examination of the government's role as ultimate insurer, see generally MOSS, *supra* note 7.

212. The Social Security Act, for example, provides that

[t]he right of any person to any future payment under this subchapter shall not be transferable or assignable, at law or in equity, and none of the moneys paid or payable or rights existing under this subchapter shall be subject to execution, levy, attachment, garnishment, or other legal process, or to the operation of any bankruptcy or insolvency law.

42 U.S.C. § 407(a) (2006); see also David Andolfatto, *A Theory of Inalienable Property Rights*, 110 J. POL. ECON. 382, 383–84 (2002) (discussing the inalienability of a variety of entitlements, including rights to social security benefits and future pension income, as well as the rationale for these limits). For a discussion of the general prohibition on alienating claims to social insurance and some limited exceptions, see *supra* Part II.D.3.

213. See ARROW, *supra* note 7, at 139–40 (noting that under an arrangement like bankruptcy protection or limited liability, "[t]he law in effect requires creditors to assume some of the risks of the debtor; it does not leave him free to negotiate a risk-free investment, and it provides for an inalienable limitation of risks to the debtor"); see also MOSS, *supra* note 7, at 123–51 (examining bankruptcy's role as a risk-shifting mechanism).

214. See Todd J. Zywicki & Joseph D. Adamson, *The Law and Economics of Subprime Lending*, 80 U. COLO. L. REV. 1, 30–32 (2009) (discussing state antideficiency laws and their effect on default choices).

from leaving debtors fully exposed to loss.<sup>215</sup> One such externality might be the debtor's eligibility for various forms of social insurance—protection necessary, in turn, to avoid the externalities associated with unalleviated poverty.<sup>216</sup> Of course, the bankruptcy laws themselves impose spillovers on other parties—not the creditors, who can price in the risk that the law forces them to bear, but the nondefaulting debtors who must pay more for credit (or suffer from reduced credit availability) as a result. The rules surrounding bankruptcy discharge and similar protections must strike a balance between these types of spillovers.<sup>217</sup>

Negative spillovers (externalized losses) are often cited as a reason for blocking REVEs, but positive spillovers (externalized gains) can also be relevant. The discharge of debt in bankruptcy again offers an interesting example. Empirical work supports the theoretical claim that the U.S. personal bankruptcy system encourages higher levels of entrepreneurship than would exist in the absence of such a system.<sup>218</sup> Allowing people to selectively undo this

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215. See Thomas H. Jackson, *The Fresh-Start Policy in Bankruptcy Law*, 98 HARV. L. REV. 1393, 1418–24 (1985) (detailing a variety of externalities that would flow from debt in the absence of debtor discharge). Internalities may also play a role. See *id.* at 1394 (hypothesizing “that most people would choose to retain a nonwaivable right of discharge if they knew of the psychological factors that tempt them to overconsume credit”); *infra* Part III.B.2.

216. See Jackson, *supra* note 215, at 1401–04 (observing that the backdrop of social insurance offers a partial justification for the nonwaivability of the right of discharge in bankruptcy). This rationale, however, would only justify inalienable protection up to the level of support that social insurance would provide, not the far more extensive inalienable protections available under bankruptcy law. *Id.* at 1403. The relationship between bankruptcy and other forms of social insurance is explored more fully in Adam Feibelman, *Defining the Social Insurance Function of Consumer Bankruptcy*, 13 AM. BANKR. INST. L. REV. 129 (2005). See also Richard M. Hynes, *Non-Procrustean Bankruptcy*, 2004 U. ILL. L. REV. 301, 350–59, for a discussion of bankruptcy's place within “a larger social safety net.”

217. See Michelle J. White, *Abuse or Protection? Consumer Bankruptcy Reform Under 'BAPCPA'*, 18–19 ÉCONOMIE PUBLIQUE 3, 5 (2006) (explaining that bankruptcy law “balances conflicting objectives of helping debtors in financial distress versus promoting credit availability by protecting creditors”); *id.* at 17 (noting the impact of greater protections for debtors on credit price and availability).

218. See Wei Fan & Michelle J. White, *Personal Bankruptcy and the Level of Entrepreneurial Activity*, 46 J. L. & ECON. 543 (2003) (developing a theoretical model for, and empirically testing, the relationship between the size of the bankruptcy exemption and entrepreneurship levels); see also F.H. Buckley, *The Debtor as Victim*, 87 CORNELL L. REV. 1078, 1089 (2002) (reviewing TERESA A. SULLIVAN, ELIZABETH WARREN & JAY LAWRENCE WESTBROOK, *THE FRAGILE MIDDLE CLASS: AMERICANS IN DEBT* (2000)) (suggesting that “bankruptcy might be a particularly useful incentive device in attracting employees to work in high-risk jobs, such as start-up ventures”).

protection through REVEs would be expected to raise the cost of entrepreneurship.<sup>219</sup>

2. *Internalities.* Just as externalities are unaccounted-for spillovers on other parties, “internalities” involve unaccounted-for spillovers on other temporal selves.<sup>220</sup> If some kinds of REVEs seem especially likely to compromise parties’ own long-run interests, the law might step in with bans or other mechanisms designed to control these effects.<sup>221</sup> For example, some REVEs would involve forgoing future payoffs in exchange for immediate lump sums. This might raise a concern if people tend to be myopic or prone to overvalue lump sums relative to streams of payments.<sup>222</sup> Similarly, if people are often unduly optimistic in predicting the outcomes of risky endeavors, then they might be overly inclined to engage in REVEs that actually leave them worse off in expected value terms. But some of these cognitive effects could be addressed without banning particular REVEs.<sup>223</sup>

### C. *Costly Heterogeneity*

A primary attraction of REVEs is their ability to accommodate differences in risk preferences and risk-bearing capacities. But heterogeneity in risk-bearing arrangements can also introduce costs. Significantly, these heterogeneity costs are implicated whenever people are afforded choice in risk arrangements; hence, they can create problems in traditional insurance markets just as surely as they

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219. The reason relates to adverse selection. *See* Feibelman, *supra* note 216, at 142–43 (observing that the mandatory nature of bankruptcy protection prevents opting-out patterns that would leave only bad risks in the pool); *see also* Hynes, *supra* note 216, at 344–48 (characterizing debt relief as a form of mandatory insurance that responds to the problem of adverse selection).

220. *See* R.J. Herrnstein, George F. Loewenstein, Drazen Prelec & William Vaughan, Jr., *Utility Maximization and Melioration: Internalities in Individual Choice*, 6 J. BEHAV. DECISION MAKING 149, 150 (1993) (defining “internality” as a “within-person externality”).

221. Paternalism is a well-recognized motive for social policy. *See, e.g.*, CALABRESI, *supra* note 1, at 55–58.

222. There is a vast literature on time preferences. For a helpful overview, *see generally* Shane Frederick, George Loewenstein & Ted O’Donoghue, *Time Discounting and Time Preference: A Critical Review*, in TIME AND DECISION: ECONOMIC AND PSYCHOLOGICAL PERSPECTIVES ON INTERTEMPORAL CHOICE 13 (George Loewenstein, Daniel Read & Roy Baumeister eds., 2003). It is also often observed that people prefer lump sums over present-value-equivalent (or larger) streams of payments. *See* David Fetherstonhaugh & Lee Ross, *Framing Effects and Income Flow Preferences in Decisions About Social Security*, in BEHAVIORAL DIMENSIONS OF RETIREMENT ECONOMICS 187, 194–96, 202–03, 206–07 (Henry J. Aaron ed., 1999) (discussing and investigating this claim).

223. *See infra* Part IV.B.1.

can cause difficulties in novel insurance markets or in reverse-insurance markets. There is accordingly no a priori reason to believe they explain existing patterns of missing risk markets. Nonetheless, certain ways of structuring REVEs may ameliorate or exacerbate problems with risk heterogeneity,<sup>224</sup> making these costs important to identify and examine.

1. *Adverse Selection.* Adverse selection is a concern when individuals have private information about their risk profiles that insurers (or reverse insurers) either cannot observe or are prohibited from taking into account when pricing risk.<sup>225</sup> The difficulty arises because individuals who possess this information are left free to choose whether to enter into a particular risk-shifting transaction and can be expected to make this selection in a manner adverse to the insurer's interests.<sup>226</sup> Hence, adverse selection is a problem associated with heterogeneity in risk arrangements rather than with any particular risk configuration.

For example, if people know their genetic risk profile, but an insurer either cannot learn it or is forbidden to base pricing on it,<sup>227</sup> insurance will be priced based on the average expected losses of all sectors of the population. Because this price is likely to be a bad deal for the best risks, they would be expected to flee the pool, assuming they are permitted to do so; their exits will spur price increases in

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224. See *infra* Part IV.B.2 for an explanation of how triangular REVEs may help to address some risk-heterogeneity problems, and Part IV.C.2 for an examination of how heterogeneity in default stickiness might interact with risk preferences to impact adverse-selection problems.

225. See, e.g., KENNETH J. ARROW, *Information and Economic Behavior*, in 4 COLLECTED PAPERS OF KENNETH J. ARROW: THE ECONOMICS OF INFORMATION 136, 147–48 (1984) (explaining how information asymmetries can create adverse-selection problems in insurance markets); see also Michael Rothschild & Joseph Stiglitz, *Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information*, 90 Q.J. ECON. 629, 632 (1976) (noting the pricing problem presented when insureds have private information about accident probabilities). The dynamic produced by such information asymmetries can also unravel markets other than those in risk. See, e.g., George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488, 489–92 (1970) (illustrating this problem using the example of used cars).

226. See Tom Baker, *Containing the Promise of Insurance: Adverse Selection and Risk Classification*, 9 CONN. INS. L.J. 371, 375–76 (2003) (noting the origins of the term "adverse selection" in the insurance industry).

227. See Genetic Information Nondiscrimination Act of 2008, Pub. L. No. 110-233, 122 Stat. 881 (codified in scattered sections of 26, 29, and 42 U.S.C.) (prohibiting genetic discrimination in group health insurance plans and employment).



reaction to the now-riskier pool, further exits, and so on.<sup>228</sup> Insurers may try to arrest this dynamic by creating a menu of insurance alternatives designed to induce good and bad risks to self-segregate.<sup>229</sup> But this approach tends to keep low-risk individuals from being able to purchase as much insurance as they would prefer.<sup>230</sup>

The theoretical concerns about adverse selection would apply to reverse-insurance situations as well.<sup>231</sup> A health insurance opt-out model would present concerns mirroring those associated with an opt-in model.<sup>232</sup> Other reverse-insurance settings—such as the sale of tort claims—would present new problems. For example, suppose Rita does things that look like they expose her to great risk of injury (such as taking regular jogs along the shoulders of heavily traveled roads) but has special skills that actually render the activities quite safe. In this case, the payments she would receive in exchange for selling her unmatured tort claims would be too high, assuming those payments were initially based on the risks of an average actor with Rita's

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228. The potential for good risks to be driven from an insurance pool as a result of adverse selection has been noted by many scholars. *E.g.*, Kenneth S. Abraham, *Environmental Liability and the Limits of Insurance*, 88 COLUM. L. REV. 942, 946 (1988); Kunreuther & Pauly, *supra* note 19, at 100.

229. See Rothschild & Stiglitz, *supra* note 225, at 632–37; Peter Siegelman, *Adverse Selection in Insurance Markets: An Exaggerated Threat*, 113 YALE L.J. 1223, 1237–38 (2004); see also David M. Cutler & Richard J. Zeckhauser, *Adverse Selection in Health Insurance* 22–27 (Nat'l Bureau of Econ. Research, Working Paper No. 6107, 1997), available at <http://www.nber.org/papers/w6107> (discussing a variety of strategies that might be used to combat adverse selection).

230. Even if both good and bad risks would prefer full coverage, the two groups cannot be separated without making the package designed for good risks sufficiently unattractive to bad risks—which would typically involve reducing the level of coverage. See Rothschild & Stiglitz, *supra* note 225, at 630–38 (modeling this problem and describing the equilibrium result, as well as the possibility that no equilibrium will be reached and that high and low risks will instead unstably pool together); Siegelman, *supra* note 229, at 1235–39 (discussing the Rothschild-Stiglitz model, one core conclusion of which is that “the good risks are often unable to purchase as much insurance as they wish”). *But see* Siegelman, *supra* note 229, at 1253 (noting the potential for screening applicants through the kinds of benefits provided, such as a health club membership that would only be attractive to relatively fit individuals).

231. See, *e.g.*, Jennifer Arlen, *Contracting over Liability: Medical Malpractice and the Cost of Choice*, 158 U. PA. L. REV. 957, 1000–03 (2010) (discussing adverse selection as an impediment to private contracting over medical malpractice liability); Choi & Spier, *supra* note 108, at 3 (noting an adverse-selection problem that would exist in the products liability context if parties could contract over damages); Schwartz, *supra* note 110, at 428–29 (describing how adverse selection creates difficulties for markets in unmatured tort claims).

232. The insurer would want to compensate low risks less for dropping out of the pool than it would compensate high risks. But if it is unable to tell risks apart and must offer everyone the same price, only low-risk people will find it a good deal, and only high-risk people will stay in the pool. See Schwartz, *supra* note 110, at 428–29 (describing the market for unmatured tort claims as “a classic ‘lemons market’”).

observable characteristics. As more skilled actors like Rita enter the reverse-insurance pool to obtain this bargain, however, reverse insurers will reduce their payments to better reflect the exposure being transferred to actors like Rita. As payouts drop, the reverse-insurance product will become less attractive to less skillful actors, prompting exits that make the deal less attractive to reverse insurers, and so on.<sup>233</sup> Adverse selection may thus explain not only the failure of some insurance markets to emerge, but also the absence of certain kinds of reverse-insurance markets.

Despite the seemingly inexorable logic of adverse selection, questions have been raised about its descriptive accuracy.<sup>234</sup> For one thing, insureds do not always possess better information about their own risk profiles than do their insurers.<sup>235</sup> The adverse-selection story also assumes that people become more keen to purchase insurance as their personal chances of experiencing a negative event rise. But this may not be the case, at least not in all risk contexts.<sup>236</sup> A growing body of scholarship examines the possibility that a converse phenomenon of “propitious” or “advantageous” selection better describes some insurance markets.<sup>237</sup> The effects observed in ordinary opt-in

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233. Another potential domain in which adverse selection might operate in this context involves individual differences in “capacity to suffer.” *See id.* (describing the operation of an adverse-selection dynamic analogous to the one presented in the text).

234. *See, e.g.,* Siegelman, *supra* note 229, at 1224 (“[A]lthough theory demonstrates that adverse selection can occur, and some instances have certainly been documented, neither the theoretical models nor the empirical studies provide much support for its widespread importance in insurance markets.”); *id.* at 1248–51, 1278–80 & tbl.2 (reviewing empirical work on adverse selection). For a recent review of the empirical literature on adverse selection in insurance markets, see Alma Cohen & Peter Siegelman, *Testing for Adverse Selection in Insurance Markets*, 77 J. RISK & INS. 39 (2010).

235. *See* Siegelman, *supra* note 229, at 1241 (questioning “whether insureds really do know something that their insurers don’t”); *see also id.* at 1251–52 (observing that information asymmetries may run in favor of insurers); Pierre-André Chiappori & Bernard Salanié, *Testing for Asymmetric Information in Insurance Markets*, 108 J. POL. ECON. 56 (2000) (finding no evidence of asymmetric information in an analysis of insurance contracts and accidents for young drivers in France). An adverse-selection dynamic can also be produced if the law requires insurers to ignore information that insureds are free to act upon.

236. *See* Cohen & Siegelman, *supra* note 234, at 40–41 (finding that the body of empirical work on adverse selection suggests significant variation in the degree of correlation between riskiness and coverage across insurance markets and pools of policies).

237. For a foundational treatment of propitious selection, see David Hemenway, *Propitious Selection*, 105 Q.J. ECON. 1063 (1990). More recent explorations of propitious or advantageous selection include, for example, David de Meza & David C. Webb, *Advantageous Selection in Insurance Markets*, 32 RAND J. ECON. 249 (2001); Hanming Fang, Michael P. Keane & Dan Silverman, *Sources of Advantageous Selection: Evidence from the Medigap Insurance Market*, 116 J. POL. ECON. 303 (2008); and Siegelman, *supra* note 229, at 1264–74.

insurance markets might, however, operate asymmetrically in an opt-out regime, depending on the mix of factors driving insurance choices.<sup>238</sup>

2. *Lumpiness*. An additional argument against heterogeneity in risk arrangements has recently been articulated by Jennifer Arlen in the context of medical malpractice liability.<sup>239</sup> Rather than have a single society-wide arrangement for malpractice liability, it would be possible for individual patients to contract with health care providers over liability arrangements. For example, a patient might execute a waiver that would undo legal arrangements that place liability on the doctor.<sup>240</sup> Arlen argues, however, that inputs into medical care tend to be “lumpy” or discontinuous, so that it is not possible for health care providers to perfectly scale back their precaution levels in light of patients’ waivers.<sup>241</sup> If it is impossible to selectively withhold the benefits of precaution from those patients who execute waivers, Arlen argues, precaution levels may exhibit the character of a public good.<sup>242</sup> The result may be a system in which some patients try to free-ride on liability-induced precautions without contributing to them.<sup>243</sup> If every patient tries this, precaution levels may eventually drop below the efficient level for most patients.<sup>244</sup>

Of course, the patient opting out of a malpractice liability regime would receive a different monetary outcome in the event of an injury than would the patient who did not execute a waiver. What the lumpiness analysis emphasizes is that the risk over which parties transact is not fixed *ex ante* but instead depends at least in part on the risk-bearing choices that other parties make.<sup>245</sup> Lumpiness thus

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238. See *infra* Part IV.C.2.

239. Arlen, *supra* note 231.

240. See, e.g., THALER & SUNSTEIN, *supra* note 62, at 207 (discussing the use of such waivers).

241. Arlen, *supra* note 231, at 992–93 & n.97.

242. *Id.* at 990, 992–93 & n.97.

243. *Id.* at 992–1000.

244. *Id.* at 990–91, 996. Arlen suggests it may be possible to address this problem by contracting through Managed Care Organizations, although not without “substantially exacerbating the adverse selection problem.” *Id.* at 1003–09.

245. Analogous points about the interdependence of choices to opt in or out have been made in other contexts. See, e.g., ALBERT O. HIRSCHMAN, EXIT, VOICE, AND LOYALTY 44–54 (1970) (analyzing the effects on institutions of the exit of those who, had they stayed, would have been the most vocal in seeking change); Jeffrey N. Gordon, *The Puzzling Persistence of the Constrained Prudent Man Rule*, 62 N.Y.U. L. REV. 52, 80–81 (1987) (suggesting that the ability

represents another facet of interdependence in risk-bearing that, like adverse selection, suggests costs may flow from permitting heterogeneity in risk arrangements.

3. *Lack of Standardization.* Another cluster of concerns about permitting heterogeneity in risk arrangements relates to questions of optimal standardization. Standardization's potential benefits and costs have been explored in the context of property's *numerus clausus* doctrine,<sup>246</sup> as well as in the literature on boilerplate contractual provisions.<sup>247</sup> In these arenas, it has been suggested that fixed menus or standardized terms can lower the cost of interactions by reducing the amount of new information that must be gathered in each instance.<sup>248</sup>

Similar considerations may have relevance in the risk context. Homebuyers entering a neighborhood filled with homeowners, for instance, may find it easier to form settled expectations about the likely behavior of their future neighbors if homeownership inevitably connotes full ownership of upside and downside home-investment risk than if some unknown proportion of their fellow homeowners have offloaded some or all of this risk. Likewise, jurors in tort suits may find it easier to set damages when they are certain the plaintiff will recover the award than if some unknown proportion of plaintiffs have alienated their recovery rights.<sup>249</sup> More generally, to the extent

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of parties to contract around a trust-investment rule may dissipate the will to litigate or to lobby for legislation that would improve the rule for everyone).

246. An information-cost explanation for standardized property forms is presented in Merrill & Smith, *supra* note 182. Other analyses of the *numerus clausus* doctrine in property law include Bernard Rudden, *Economic Theory v. Property Law: The Numerus Clausus Problem*, in OXFORD ESSAYS IN JURISPRUDENCE, 3D SERIES 237 (John Eekelaar & John Bell eds., 1987); Nestor Davidson, *Standardization and Pluralism in Property Law*, 61 VAND. L. REV. 1597 (2008); and Henry Hansmann & Reinier Kraakman, *Property, Contract, and Verification: The Numerus Clausus Problem and the Divisibility of Rights*, 31 J. LEGAL STUD. 373 (2002).

247. See, e.g., Marcel Kahan & Michael Klausner, *Standardization and Innovation in Corporate Contracting (or "The Economics of Boilerplate")*, 83 VA. L. REV. 713 (1997); Henry E. Smith, *Modularity in Contracts: Boilerplate and Information Flow*, 104 MICH. L. REV. 1175 (2006).

248. See, e.g., Kahan & Klausner, *supra* note 247, at 719–27 (detailing “learning benefits” and “network benefits” of boilerplate contract terms); Merrill & Smith, *supra* note 182, at 8 (observing that unusual property forms inflict an externality on those who must expend time learning about the entitlement's attributes, while standardized property forms economize on such costs).

249. Evidentiary rules could keep specific information about a given plaintiff's reverse-insurance transactions from jurors, but that would not eliminate the problem flagged in the text. The problem is ameliorated to the extent sales of unmaturing tort claims would foster large

that other laws or social policies (including the provision of social insurance) are predicated on how certain risks are arranged, homogeneity in risk-bearing can simplify the design of these surrounding elements.

#### IV. RETHINKING RISK REVISION

The discussion to this point has placed a large number of REVE-related categories, examples, advantages, objections, and impediments on the table. In this last Part, I distill some policy observations from the preceding analysis. Section A returns to the taxonomy presented in Figure 3 to suggest that personal risk-rearrangement opportunities follow patterns that appear to be shaped more by history and societal framing than by logic or meaningful normative distinctions. Some of the concerns that have been raised about REVE transactions can be addressed through minor redesigns, such as the removal of nonessential payment-timing elements, as Section B explains. Sections C and D, respectively, show how manipulating the two policy levers that a focus on unbundled risk spotlights—the choice of the default and the stickiness of the default—expands policy space. The newly visible alternatives may offer novel ways to counter biases, more smoothly accommodate multiple policy objectives, or harness other asymmetries associated with opting out rather than in.

##### A. *Missing Entries in the Risk Menu*

One of the most striking facts highlighted by the taxonomy set out in Figure 3 is the relative dearth of explicit bottom-row or event-detracting REVEs available to individuals and households. It is easy to come up with justifications for treating transactions involving ditch risk differently than transactions involving gravy risk. But that argues for distinguishing between the columns in Figure 3, not between the rows. A rationale for treating event-detracting REVEs differently than event-enhancing REVEs must be able to explain differences between the top-row and bottom-row entries within each column. Focusing just on the risk endstates that REVEs produce,<sup>250</sup> such a rationale is difficult to detect.

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settlements of claims *en masse* so that individual cases would rarely go to trial if the underlying claim had been sold. *See supra* note 111.

250. Below, I will consider some additional justifications for differential treatment and some possible ways to address the concerns underlying those rationales. *See infra* Part IV.B–D.

Consider first those REVEs involving ditch risk, the left-hand column in Figure 3. Ditch exposure, an event-detracting REVE, actually solves a moral-hazard problem by restoring incentives that ditch coverage eliminates. The fact that ditches can produce both externalities and internalities offers no reasoned basis for treating a choice to enter into a ditch-exposure REVE any differently than the failure to engage in an analogous ditch-coverage REVE. Concern about downside exposure may prompt mandatory insurance requirements, especially when unremediated losses will drop an individual below the subsistence level. But that concern argues for regulating ditch risk generally; it does not explain why a ditch-exposure transaction should be viewed as particularly problematic. To be sure, there may be some practical hurdles associated with ditch-exposure REVEs, but these do not seem different in severity or kind from those that have long plagued ditch-coverage REVEs.

The privileging of event-enhancing REVEs becomes even more puzzling within the right-hand column in Figure 3, which contains two varieties of gravy REVEs. Compare the event-enhancing entry, the gravy gamble, with the corresponding event-detracting entry, the gravy giveup. Both of these entries involve upside risk, yet there is no obvious reason to make it easier to gamble for upside gains than it is to exchange potential gravy for a sum certain. If gambles are voluntary in the top-row situation, then why should people be prohibited from using a bottom-row REVE to attain the same risk position?

The issue here is consistency, not the overall level of risk-rearrangement opportunities. Thus, if people are not forced to purchase insurance that will protect them against losses from one set of events (such as the death of a minor child due to an illness, or injuries that occur within the home due to one's own carelessness), it is difficult to understand why they should be prohibited from shedding societal insurance against the same losses when they are caused by tortfeasors. The point can be flipped around: if people are forced to insure at a very high level against losses caused by tortfeasors, permitting them to be exposed to unremediated losses that result from other causes requires some explanation.<sup>251</sup>

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251. Cf. Ronen Avraham & Issa Kohler-Hausmann, *Accident Law for Egalitarians*, 12 LEGAL THEORY 181, 187–88 (2006) (raising similar questions about the dramatically different treatment that different kinds of bad luck receive).

Similar analysis might be applied to insurance gaps that are a function of unexamined bundling, such as the default packaging of exogenous housing-market risk with homeownership. If people are encouraged or even forced by their mortgage companies to insure against one set of home-value losses, such as those from fire, the practical unavailability of insurance against a different set of losses to home values, such as those associated with market downturns, should at least invite inquiry. This is not to suggest that perfect consistency in insurance opportunities across domains is required or even recommended; the point is simply that differences in risk-shifting opportunities should map onto real differences in the costs or consequences of offering REVEs, rather than merely emerge as artifacts of the way insurance choices are presently bundled and framed.

As already suggested, one coherent normative distinction might focus on preventing exposure to unremediated losses, thus treating left-column REVEs differently than right-column REVEs. Here, too, consistency is important. If the goal is a certain subsistence level of coverage, then transactions that reverse insure amounts over that level should not be deemed any more problematic than the failure to buy insurance in excess of the minimum level. In some cases, REVEs that deal in ditch risk could be made subject to minimum insurance requirements<sup>252</sup> or bonding requirements.<sup>253</sup>

### *B. Tweaking Transactions*

Some REVEs may be viewed as problematic not because of the risk endstates they produce, but because features of the transactions themselves might induce people to choose wrongly. Similarly, the heterogeneity produced by particular REVEs might be thought uniquely likely to create difficulties within certain domains, even when seemingly analogous domains tolerate well the heterogeneity that comes from voluntary insurance. Yet in evaluating whether

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252. Notably, most of the proposals for selling unmatured tort claims do not contemplate that potential victims would walk away with large, unrestricted stacks of cash, but rather that part of the savings would be used to purchase or fund insurance. *See, e.g.*, Cooter, *supra* note 2, at 395 (proposing that potential victims of torts be allowed to sell their unmatured claims and buy first-party insurance); O'Connell, *supra* note 111, at 697–711 (describing a system in which insurers would acquire the potential tort claims of their insureds and use the amounts recovered from those claims to fund first-party no-fault coverage).

253. *Cf.* Shavell, *Minimum Asset Requirements*, *supra* note 209 (discussing minimum asset requirements as a possible approach to the problem of judgment-proof defendants).

presently absent REVEs must or should remain so, it is important to examine the extent to which simple design tweaks can address these sources of concern. Although there may be many modifications capable of meeting various objections, two simple ones are considered here: modifying the timing and form of payments, and making the transaction a triangular one.

1. *Timing and Form of Payments.* Insurance and other REVEs allow individuals to redistribute money among possible states of the world.<sup>254</sup> However, REVEs also commonly move money from one part of the life cycle to another. If impediments to borrowing or saving exist, REVEs may be affirmatively sought out as a means of moving money earlier or later in time. While ordinary insurance moves money to a later point in the life cycle (to the future state in which one is ill or injured), reverse insurance typically moves money earlier in the life cycle, to the uninjured state. Thus, where ordinary insurance incorporates an element of saving,<sup>255</sup> reverse insurance seems to incorporate an element of dissaving.

If people are deemed likely to be poor agents of their future selves primarily due to factors like myopia or a tendency to discount hyperbolically,<sup>256</sup> this conflation of risk and liquidity might cause people to mischoose REVEs.<sup>257</sup> Thus, some objections to event-

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254. See *supra* text accompanying notes 30–35.

255. See CALABRESI, *supra* note 1, at 47 (“Most private insurance involves a substantial element of intertemporal loss spreading. In this sense it is just a form of saving.”).

256. People are said to discount hyperbolically if their valuation of a reward drops off dramatically as it moves from the immediate present into the near future, but levels off in the more distant future; the shape of the valuation over time forms a hyperbola. See GEORGE AINSLIE, *BREAKDOWN OF WILL* 32 & fig. 2B (2001) (depicting a hyperbolic discount curve); David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 Q.J. ECON. 443, 446–51 (1997) (presenting a formal analysis of hyperbolic discounting). Hyperbolic discounting offers a leading (although not uncontested) explanation for preference reversals that take the following standard form: A person who would prefer \$105 in 366 days to \$100 in 365 days turns down the chance for \$105 tomorrow in favor of \$100 today—even though the length of the delay and the difference in the rewards is identical in the two cases. Frederick et al., *supra* note 222, at 25.

257. On the other hand, myopia could actually counter other cognitive biases under some possible REVE designs, such as the weight-loss bets discussed in Abramowicz & Ayres, *supra* note 50, at 4. For example, a dieter might place a sum of money at stake and then auction off the right to receive that sum if she fails to achieve her desired weight by a certain date; the price would be an expected value based on the probability the dieter will fail. See *id.* Using the present Article’s terminology, the purchaser of the auctioned right undertakes a gray gamble while the dieter engages in a ditch-exposure transaction. As Professors Abramowicz and Ayres explain, the possibility of getting cash upfront might prove inordinately attractive to someone who discounts hyperbolically, yet if the would-be dieter is also naïve about the extent of her own self-control problems, that same distortion might induce her to take on a bet that will



detracting risk transactions may really be objections to the temporal structure that the choice typically takes. For example, some might oppose allowing people to sell their unmatured tort claims (particularly in the absence of any first-party insurance requirement) out of a concern about myopia.<sup>258</sup> If people are short-sighted, they might grab the lump of immediate cash without carefully weighing the long-run consequences and later come to regret the decision.

Notice, however, that it is possible to design mechanisms that break apart time preferences and risk preferences. Rather than receive the expected value of one's unmatured tort claims all at once, for example, the payments could be spread out over a number of years or decades. Similarly, concerns about hyperbolic discounting might be addressed by interposing some period of time, such as six months, between the sale of the claim and the delivery of the (interest-adjusted) proceeds.<sup>259</sup> Indeed, it is even possible to make the expected value payment after the risky event's outcome is known under certain REVE designs.<sup>260</sup> As long as an appropriate present-value equivalent is made available, the delay would not undermine the purposes served by the REVE as such: catering to heterogeneity in risk preferences.<sup>261</sup>

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ultimately prove helpful to her. *Id.* at 13–15. The possibility that cognitive biases might cancel each other out in such ways has received theoretical attention as a manifestation of the general theory of the second best. *E.g.*, Gregory Besharov, *Second-Best Considerations in Correcting Cognitive Biases*, 71 S. ECON. J. 12 (2004).

258. See Schwartz, *supra* note 110, at 425 (expressing the concern that potential victims would sell their unmatured tort claims too cheaply due to “irrationally high discount rates”).

259. Hyperbolic discounting involves very steep discounting in the immediate short run and much shallower discounting further out. See *supra* note 256.

260. Abramowicz and Ayres discuss an “ex post implementation” that achieves this result by paying an individual taking on a downside risk an expected value payment only in those states of the world in which the risky event has not occurred. Abramowicz & Ayres, *supra* note 50, at 8–9; see also *id.* at 8 (explaining that, because the expected value payment is made in fewer states of the world under this implementation, the payment will accordingly be higher).

261. This is not to deny that altering the payment timing will have some impact on individuals' other risk sets, aside from the specific risk being transacted over. For example, delaying payment means introducing some risk that death will occur first for reasons unrelated to the risky event that is the subject of the REVE. Similarly, delays keep people from gaining immediate access to funds that might be used in the interim for risky investments or additional REVE transactions. If people could use the prospect of the upcoming payments as collateral for immediate loans, this latter set of constraints would be lifted, although possibly at the cost of defeating the purpose of the change in timing and form. The cognitive response triggered by an immediate lump sum of cash in hand, however, may be quite different from the knowledge that one can use the dollar amount to obtain financing.

Likewise, to the extent that people exhibit a bias for lump sums over equivalent streams of payments, this feature could be removed from a given REVE. The point is a general one: any considerations that are extraneous to the concentration or spread of risk, whether involving the timing or form of payments or the time, place, or conditions under which transactions are made available, can be altered to more clearly present individuals with the choice between variable outcomes and the expected value equivalent. The fact that certain risk arrangements tend to come bundled with these other features merely suggests that a more thoroughgoing form of risk unbundling may be required.

Two caveats are in order. First, people's cognitive biases likely extend to matters of risk taking and insurance, as well as to questions of the timing of payment.<sup>262</sup> Thus, taking certain temporal elements out of the equation is no guarantee against mischoosing. Yet the discussion here is about clarifying what is essential to a given REVE and what can be removed from it. Policymakers might indeed deem mischoosing to be too great a hazard even after removing, say, the opportunity to immediately obtain a lump of cash from a REVE. On the other hand, it is possible that the remaining cognitive concerns could be addressed separately, as through risk defaults that counter cognitive biases.<sup>263</sup>

Second, there are serious normative questions about whether it is appropriate to constrict the temporal tradeoffs that people can make in the course of reallocating risk, given that people may have quite rational reasons for wanting to receive payouts on a particular schedule.<sup>264</sup> The question is sharpened by the fact that the capacity to deliver immediate liquidity is one of the primary attractions of REVEs, given imperfections in capital markets. Yet if removing worrisome temporal elements is the only way to introduce a presently unavailable REVE, then choice is expanded rather than contracted by the move. My point is not to advocate for any particular design choice, but only to emphasize that risk allocations can be

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262. See, e.g., CALABRESI, *supra* note 1, at 55–58 (discussing both “paternalistic” and “semipaternalistic” rationales for doubting that voluntary insurance coverage will be adequate); Kunreuther & Pauly, *supra* note 19, at 88–97 (describing and explaining behavioral anomalies in insurance-purchasing behavior).

263. See *infra* Part IV.C.

264. Scholars have noted the general difficulty in determining when an individual's choice should be viewed as a “mistake.” See, e.g., Mario J. Rizzo & Douglas Glen Whitman, *The Knowledge Problem of New Paternalism*, 2009 BYU L. REV. 905, 926–28.

reconfigured in ways that need not inevitably entail particular payment arrangements.

2. *Third-Party Transactors.* Although parties to an interaction, such as a manufacturer and a consumer, could reverse the risk arrangement as between themselves, they may find it beneficial to involve third-party insurers or reverse insurers in the REVE transaction. As already noted, third-party transactors make possible triangular risk arrangements that permit both parties to be insured or exposed.<sup>265</sup> The involvement of third parties may also carry some additional advantages that can help to meet practical and normative objections to REVEs.

First, opening up REVEs in a given area to third-party transactors fosters competition, which can help address the concern that some parties will feel pressured into selling claims too cheaply (or paying too dearly for them).<sup>266</sup> Competition does not necessarily safeguard parties against making what are (for them) bad bargains, but it does provide some check against monopolistic or exploitative pricing.

Second, the availability of third-party transactors can help address one of the reasons that default rules are often so potent: the fear that moving away from them will send a negative signal to the party with whom one is interacting.<sup>267</sup> Often, parties will want their counterparties to know about their risk arrangements precisely

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265. See *supra* Part I.C.

266. See Cooter, *supra* note 2, at 386–87 (explaining how permitting sales to third parties will encourage competition, which “will generate more information and higher prices”).

267. See Ben-Shahar & Pottow, *supra* note 18, at 652–53, 660–65 (examining signaling concerns associated with rejecting contract default provisions); Cass R. Sunstein, *Human Behavior and the Law of Work*, 87 VA. L. REV. 205, 225–26 (2001) (noting signaling concerns in the employment context). Of course, transacting with a third party would not help if the persons to whom one fears sending an adverse signal would be aware of that transaction, as might be the case if concerns are mostly about the signals sent to loved ones or even to oneself. For further discussion of the signaling properties of insurance, see Robin Hanson, *Insurance as Signal*, OVERCOMING BIAS (Sept. 14, 2009, 9:45 PM), <http://www.overcomingbias.com/2009/09/insurance-as-signal.html>.

because of what it signals about them,<sup>268</sup> but in other instances the third-party involvement may helpfully mute an unwanted signal.<sup>269</sup>

Third, the availability of third-party transactors can avoid some of the difficulties that might otherwise attend heterogeneous risk arrangements. For example, if it is unworkable for patients to selectively opt out of medical malpractice coverage because the precautions of the doctors are not scalable,<sup>270</sup> patients could instead go to a reverse insurer to whom they could sell their rights and who would collect on their behalf, leaving the doctor's liability unchanged but merely altering who is the payee.<sup>271</sup> Similarly, a triangular arrangement that leaves both parties exposed to risk would address moral-hazard concerns that might otherwise be present.<sup>272</sup>

As these observations show, if direct reversals of risk allocations between two parties present difficulties, curtailing REVEs is not the only possible solution. Another alternative may be to even more fully unbundle risk from the underlying interaction by throwing open REVE opportunities to third parties.

### C. Defaults

The law always makes an initial choice about risk allocation, even when it does nothing more than leave a particular set of losses where they fall.<sup>273</sup> A focus on risk customization emphasizes that society's choice set is not limited to mandatory insurance and voluntary opt-in insurance; it is also possible to start with a system that insures people against loss and permit them to opt out. In this

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268. See Abramowicz & Ayres, *supra* note 50, at 37–39 (noting the signaling potential of placing bets on particular outcomes); Hanson, *supra* note 267 (discussing the possibility that the purchase of insurance could in some contexts convey care and concern).

269. For example, an employee who insures against a failure to receive a promotion might wish to keep this information from her employer in order to avoid signaling a low degree of confidence that could translate into negative results at work.

270. See *supra* Part III.C.2.

271. Cf. Cooter & Porat, *supra* note 1, at 225 (explaining how contracts between anti-insurers and consumers in the products liability context “would restore incentives for care by consumers, without eroding incentives for care by manufacturers”).

272. *Id.*; see also Choi & Spier, *supra* note 108, at 27 (presenting a model in which manufacturers and consumers transact directly with each other and noting the moral-hazard problems that might result from permitting product liability waivers under those circumstances).

273. See Calabresi & Melamed, *supra* note 23, at 1091 (“When a loss is left where it falls in an auto accident, it is not because God so ordained it. Rather it is because the state has granted the injurer an entitlement to be free of liability and will intervene to prevent the victim’s friends, if they are stronger, from taking compensation from the injurer.”).

Section, I discuss some well-known and less-recognized considerations that bear on this choice between defaults.

1. *Sticky Starting Points.* Considerable empirical evidence suggests that defaults tend to stick.<sup>274</sup> This provides one reason to think carefully about the risk-related defaults that society has in place, including those that are embedded without comment in legal rules or social policies. If one risk allocation is generally deemed best for most of the people, most of the time, making that the default seems sensible—at least if one assumes that those for whom it is not best do not differ systematically in terms of the size of the losses they will suffer or the difficulties they will face in moving away from the default.<sup>275</sup>

A number of cognitive explanations for default stickiness have been explored,<sup>276</sup> but three are of particular interest here.<sup>277</sup> First is a simple pricing effect. Changing a risk allocation requires effort, and effort is expensive to exert.<sup>278</sup> Second is the “implicit advice” that

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274. Some of the best-known research on the power of default rules is in the context of 401(k) plans, where automatic enrollment has been found to significantly impact savings behavior. See, e.g., James J. Choi, David Laibson, Brigitte C. Madrian & Andrew Metrick, *Passive Decisions and Potent Defaults*, in *ANALYSES IN THE ECONOMICS OF AGING* 59 (David A. Wise ed., 2005); Bridgette C. Madrian & Dennis F. Shea, *The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior*, 116 Q.J. ECON. 1149 (2001). Work on risk taking has also documented significant default effects. See Johnson et al., *supra* note 19, at 46–48 (presenting experimental findings showing significant effects depending on the default risk regime); *id.* at 48 (observing that 20 percent of New Jersey motorists elected a “full right to sue” where state law required opting into this right, whereas 75 percent of Pennsylvania motorists retained this right where it was made the default under state law); see also Sunstein, *supra* note 19, at 114 (discussing these default effects).

275. See Thomas J. Miles, *Posner on Economic Loss in Tort: EVRA Corp. v. Swiss Bank*, 74 U. CHI. L. REV. 1813, 1817–18 (2007). But see Ayres & Gertner, *supra* note 18, at 91 (describing “penalty defaults,” which “are purposefully set at what the parties would not want”).

276. See, e.g., Isaac Dinner, Eric J. Johnson, Daniel G. Goldstein & Kaiya Liu, *Partitioning Default Effects: Why People Choose Not to Choose 3* (June 26, 2009) (unpublished manuscript), available at <http://ssrn.com/abstract=1352488> (collecting citations and identifying three categories of reasons for default stickiness: “effort,” “implied endorsement,” and “reference dependence”); Choi et al., *supra* note 274, at 60 (listing three reasons that defaults matter in their model: the fact that moving away is a costly “act of commission,” the desire to exploit the “option value of waiting,” and the “tendency to procrastination”).

277. A fourth, the interaction between signaling and defaults, is omitted here because its potential to be redressed through third-party risk arrangements was discussed above. See *supra* text accompanying note 267.

278. See, e.g., Dinner et al., *supra* note 276, at 3 (noting that choosing default options requires no effort). The idea that defaults can be powerful even when the ability to opt out is made readily and cheaply available lies at the heart of Cass Sunstein’s and Richard Thaler’s “libertarian paternalism” proposals. See Cass R. Sunstein & Richard H. Thaler, *Libertarian*

defaults are often thought to provide.<sup>279</sup> If people trust the authority presumed to be behind the selection, they may be especially likely to stay with the default risk allocation.<sup>280</sup> Taking these two points together, sticking with defaults can be viewed as a way of economizing on search costs.<sup>281</sup> A third and closely related explanation stems from the cognitive distinction between acts and omissions.<sup>282</sup> An act is more likely than an omission to trigger regret (and hence the kind of anticipated regret that gives people pause).<sup>283</sup> When the act would involve moving away from coverage for a risk, making a choice also inevitably draws attention to the risk.<sup>284</sup> Because

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*Paternalism Is Not an Oxymoron*, 70 U. CHI. L. REV. 1159, 1181 (2003). Empirical work suggesting that making decisions is cognitively draining supports this effect. See Roy F. Baumeister, *The Psychology of Irrationality: Why People Make Foolish, Self-Defeating Choices*, in 1 THE PSYCHOLOGY OF ECONOMIC DECISIONS: RATIONALITY AND WELL-BEING 3, 12–14 (Isabelle Brocas & Juan D. Carrillo eds., 2003) (reviewing literature on “decision fatigue”).

279. See Choi et al., *supra* note 274, at 70 (noting that defaults may provide “implicit advice”); see also THALER & SUNSTEIN, *supra* note 62, at 35, 83 (observing that defaults will carry more power in contexts where consumers perceive that they “come with an implicit endorsement from the default setter” or that they “represent[] the normal or even the recommended course of action”); Dinner et al., *supra* note 276, at 3 (noting that defaults may amount to an “implied endorsement”). A related possibility is that people might assume some help will be forthcoming if things go systematically awry with the default choice (as in a natural disaster, if the default is to remain uninsured).

280. Some scholars have noted a parallel in Lon Fuller’s discussion of formalism as serving (among other things) a “cautionary” function. See Ayres & Gertner, *supra* note 18, at 124 (citing and discussing Lon Fuller, *Consideration and Form*, 41 COLUM. L. REV. 799 (1941)); see also Brett H. McDonnell, *Sticky Defaults and Altering Rules in Corporate Law*, 60 SMU L. REV. 383, 392–93 (2007) (discussing the use of Fuller’s work by Ayres and Gertner).

281. For a discussion of the relevance of search costs to insurance decisions, see Kunreuther & Pauly, *supra* note 19, at 76–77.

282. See, e.g., Choi et al., *supra* note 274, at 60 (noting costliness of “acts of commission”); Johnson et al., *supra* note 19, at 48 (discussing the potential relevance to insurance decisions of work showing an asymmetry between acts and omissions).

283. For discussion of research on the asymmetry between commission and omission, see, for example, RICHARD H. THALER, THE WINNER’S CURSE: PARADOXES AND ANOMALIES OF ECONOMIC LIFE 73 (1992); Daniel Kahneman, *Varieties of Counterfactual Thinking*, in WHAT MIGHT HAVE BEEN: THE SOCIAL PSYCHOLOGY OF COUNTERFACTUAL THINKING 375, 388–92 (Neal J. Roese & James M. Olson eds., 1995); Daniel Kahneman & Amos Tversky, *The Psychology of Preferences*, SCI. AM., Jan. 1982, at 160, 173; and *supra* note 199 and accompanying text. The regret-avoidance explanation, to the extent it hinges on moves from the status quo, also dovetails with Dinner et al.’s discussion of “reference dependence.” See Dinner et al., *supra* note 276, at 5–7 (positing that defaults act as “‘instant’ endowments” that alter the perceived reference point from which choices are evaluated).

284. See CALABRESI, *supra* note 1, at 167 n.25 (“Opting in[to liability] may be different from opting out, for it might seem that where one party opts into liability, he has a greater awareness of what he is doing than when he allows the other party to opt out of liability.”). After providing a counterexample in which a “giant milling company us[es] a form contract requiring opting into liability,” Calabresi concludes that “knowledge or awareness of risk may

knowledge of risks and of the availability of insurance plays an important role in coverage decisions,<sup>285</sup> the default setting's capacity to influence what people pay attention to could prove independently important.<sup>286</sup>

In the present context, these cognitive factors are only part of the story. When a third-party insurer or reverse insurer provides the service of rearranging risk, the REVE will not be actuarially fair, but will instead build in a "loading fee" to cover administrative costs and a profit margin.<sup>287</sup> As a result, some people who would have accepted the REVE at an actuarially fair price will instead stick with the default. The larger the administrative costs are, the stickier the default will be, although this stickiness can be reduced through subsidies or measures designed to reduce transaction costs. If there are asymmetries in the administrative costs of moving in one direction rather than another, this would of course offer an additional reason for attending carefully to the default choice.

2. *Heterogeneously Inertial.* Default rules, for the reasons already suggested, tend to be remarkably inertial. But it is likely that people are heterogeneous in their susceptibility to inertia's pull.<sup>288</sup>

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affect the choice of whom we wish to hold initially liable and whether we wish to allow such a party to exculpate himself." *Id.*

285. See KUNREUTHER ET AL., *supra* note 55, at 57–61.

286. This point relates to the argument for a "penalty default"—a default so unattractive that it encourages opting out, and hence conscious consideration of the alternatives. See Ayres & Gertner, *supra* note 18, at 91; see also Choi et al., *supra* note 274, at 72 (observing that such "bad" defaults may counter procrastination).

287. See Sean J. Griffith, *Uncovering a Gatekeeper: Why the SEC Should Mandate Disclosure of Details Concerning Directors' and Officers' Liability Insurance Policies*, 154 U. PA. L. REV. 1147, 1168 (2006) ("Insurance premiums reflect not only the policy's risk—an actuarially determined probability of loss—but also a loading fee reflecting the insurer's costs and profits.").

288. Some existing empirical work has uncovered patterns of heterogeneity in default stickiness. See, e.g., Madrian & Shea, *supra* note 274, at 1158–61 & tbl.IV, 1171–73 & tbl.VIII, 1185 (2001) (finding that a large employer's switch from an opt-in 401(k) program to one featuring automatic enrollment with an opt-out had much larger effects on young workers, low-earning workers, women, and minorities; not only did these groups participate at much higher levels under automatic enrollment than they did under an opt-in system, they were more likely to stick with the specific default contribution level and investment allocation). The possibility that moving away from one default might be easier than moving away from another has been raised in a number of contexts. Such an effect might occur (among other reasons) if the parties who occupy one side of a given transaction are systematically less likely to agree to a switch if they begin with the entitlement than are the parties who occupy the other side of the transaction. See Sunstein, *supra* note 19, at 122–23 (raising the possibility that workers would

This possibility becomes interesting if those differences are potentially correlated with either risk preferences or risk profiles.<sup>289</sup> Such correlations do not seem implausible, although it is not self-evident which way they would run. Those who behave in ways that make them better risks or who are very averse to risk may also be adept at micromanaging their lives and practiced at overcoming inertia. If people are bad risks because they are careless, that lack of care might manifest itself in a tendency not to bother with the hassles of gathering information, filling out paperwork, or otherwise proactively engaging in decisionmaking. On the other hand, perhaps risk seekers are marked by an extreme lack of complacency that makes them less susceptible to inertia. Moreover, to the extent that sticking with a default means accepting a social planner's advice on a particular question or conforming one's behavior to that of others,<sup>290</sup> risk seekers might be more willing to break away from the pack or to shun official recommendations.

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overvalue particular rights and be unwilling to waive them, even when it would be in their best interest to do so).

289. Recent empirical work has explored heterogeneity in risk preferences. See Rachel Croson & Uri Gneezy, *Gender Differences in Preferences*, 47 J. ECON. LIT. 448, 449–54 (2004) (reviewing experimental findings on the greater risk aversion of women, discussing possible reasons, and noting exceptions in managerial and professional subsets); Peggy D. Dwyer, James H. Gilkeson & John A. List, *Gender Differences in Revealed Risk Taking: Evidence from Mutual Fund Investors*, 76 ECON. LETTERS 151, 156–57 (2002) (finding evidence that women accept less investment risk than men, as well as positive effects of wealth and education on willingness to take investment risks); Jonah Gelbach, Jonathan Klick & Lesley Wexler, *Passive Discrimination: When Does It Make Sense to Pay Too Little*, 76 U. CHI. L. REV. 797, 817–19 (2009) (reviewing empirical literature on gender differences in risk preferences); Luigi Guiso & Monica Paiella, *Risk Aversion, Wealth, and Background Risk*, 6 J. EUROPEAN ECON. ASSOC. 1109, 1109, 1141–42 (2008) (examining the relationship between wealth and risk aversion, as well as other aspects of heterogeneity in risk preferences); Thomas Dohmen, Armin Falk, David Huffman & Uwe Sunde, *Are Risk Aversion and Impatience Related to Cognitive Ability?* 100 AM. ECON. REV. 1238, 1257 (2010) (finding, in a study of German adults, greater risk aversion among people with lower scores on an IQ test); Daniel J. Benjamin, Sebastian A. Brown & Jesse M. Shapiro, *Who Is “Behavioral”?* Cognitive Ability and Anomalous Preferences 1 (May 5, 2006) (unpublished manuscript), available at <http://ssrn.com/abstract=675264> (finding, in a study of Chilean high school students, less “small-stakes” risk aversion among those with higher scores on standardized tests). Another interesting line of work assesses the degree of correlation in risk preferences across domains. E.g., Levon Barseghyan, Jeffrey Prince & Joshua C. Teitelbaum, *Are Risk Preferences Stable Across Contexts? Evidence from Insurance Data*, AM. ECON. REV. (forthcoming), available at <http://ssrn.com/abstract=1220663>; Liran Einav, Amy Finkelstein, Iuliana Pascu & Mark R. Cullen, *How General Are Risk Preferences? Choices Under Uncertainty in Different Domains* (Nat'l Bureau of Econ. Research, Working Paper No. 15686, 2010).

290. See *supra* note 279 and accompanying text.



In either case, these differences could bear on the question of adverse selection. In the standard adverse-selection story, people who are bad risks opt in while people who are good risks stay out. But scholarly exploration of the converse phenomenon of “advantageous” or “propitious” selection raises some interesting questions.<sup>291</sup> If much of what drives advantageous selection in the opt-in model is simple inertia on the part of the less-good risks (who stay out of the pool), flipping the default so everyone starts off insured could generate a risk pool that contains more of these less-good risks. On the other hand, if risk seekers are especially prone to action, their exits under such a system might outstrip any exits from the pool by the good risks.<sup>292</sup> Further, if the risk aversion of many good risks is significantly influenced by framing, the prospect of taking on additional exposure through a reverse-insurance move might be much less attractive than a failure to insure in an opt-in system. This could lead some good risks to stay in a default-insured system even when they would not opt in under a default-uninsured system.

The direction and magnitude of these effects would be an excellent avenue for further empirical research. It is possible that adverse-selection effects could be aggravated or mitigated based entirely on default choice. If so, then flipping defaults could make some REVEs that have been ruled out on adverse-selection grounds more feasible.

3. *Risk and Redistribution.* The choice of default may often seem to be driven by distributive considerations. Providing a taxpayer with publicly funded insurance and letting her opt out for cash places her in a different distributive position than simply leaving her free to buy her own coverage from a no-insurance baseline.<sup>293</sup> But the choice of

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291. See *supra* note 237 and accompanying text.

292. Perhaps suggestive on this point is evidence on when low-risk insureds do and do not drop out of policies with “guaranteed renewability” provisions that insure against selective experience-rated increases in policy premiums. See SCOTT E. HARRINGTON & GREGORY R. NIEHAUS, *RISK MANAGEMENT AND INSURANCE* 351–52 (2d ed. 2004) (attributing the availability of guaranteed renewability provisions for individuals and the resistance to such provisions in small-group insurance settings in the period prior to legal mandate to the higher transaction costs of switching for individuals); Kunreuther & Pauly, *supra* note 19, at 107–08 (citing Harrington & Niehaus, and observing that “[t]he same type of inertia and inattention that sometimes results in failure of insurance markets to emerge . . . may sometimes preserve them as well”).

293. This assumes, as seems plausible, that the funding mechanism for public insurance draws from individuals in a pattern that differs from the price structure each would encounter in purchasing private insurance.

default need not dictate a particular distributive result, given the ability to combine different funding mechanisms with different risk-allocation baselines. Thus, an opt-in system can be coupled with subsidies, and an opt-out system can be funded by individual insureds in a manner corresponding to the pricing structure of private insurance (the direct deduction of insurance premiums from paychecks offers a concrete example).

Consideration of alternative defaults can become especially important when risk pooling consciously builds in a redistributive element, as it often does. Genetic testing offers a case in point. Assume society has decided it is normatively inappropriate for people with different levels of genetic risk to bear different insurance costs. One approach is to pass a law mandating that insurers ignore the results of genetic tests in setting premiums.<sup>294</sup> If people know their own risk levels, however, those at lower risk may exit the pool to avoid cross-subsidizing those at higher risk—the usual adverse-selection problem.<sup>295</sup> But if society were to switch to a new baseline in which everyone is automatically insured absent a decision to opt out, it becomes feasible to maintain society's normative commitment while eliminating the feature of the situation responsible for the adverse-selection dynamic—the suppression of relevant risk-related information.

Suppose, for example, that health insurance is provided to everyone as an initial matter and funded in a way that does not distinguish among genetic risks.<sup>296</sup> Because the cost of covering those with risky genes would be built into the public finance system and spread across all taxpayers, everyone would be a mandatory participant in the redistributive scheme that subsidizes the premiums of those with unlucky genes.<sup>297</sup> Yet it would still be possible to allow people to exchange their individual insurance claims against the

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294. See *supra* note 227 and accompanying text.

295. See *supra* notes 227–30 and accompanying text.

296. Although the example in the text focuses on genetic risks, the same analysis would apply to preexisting conditions or any other factor that society might view as normatively inappropriate to factor into the cost of coverage. See, e.g., Deborah S. Hellman, *Is Actuarially Fair Insurance Pricing Actually Fair? A Case Study in Insuring Battered Women*, 32 HARV. C.R.-C.L. L. REV. 355 (1997) (examining insurers' use of domestic violence victim status in coverage and premium determinations and legislation restricting that practice).

297. For discussion of explicit and implicit ways to package redistribution based on (or insurance against) unlucky genetic endowments, see generally Logue & Slemrod, *supra* note 166.

system for a sum representing the expected value of those claims.<sup>298</sup> Thus, someone at low genetic risk could opt out of insurance but would get only the low expected value payment associated with her risk class; this would often be much less than the amount she had paid toward the program in taxes because she would not be permitted to opt out of the redistributive component of the policy.<sup>299</sup> Unlike in the opt-in case, there is no public policy difficulty with pricing the expected value of the claims of those opting out as accurately as possible, using genetic information or any other available information sources; indeed, such pricing would be necessary to keep the system from unraveling.

Thus, there may be an interesting policy asymmetry between taking account of certain kinds of information (here, genetic predispositions) when pricing insurance premiums (the opt-in price) versus taking account of that information when pricing reverse insurance (the opt-out price). My objective is not to defend this particular approach to insurance or to the use of genetic information, but rather to show that it is possible to break apart the redistributive and risk-pooling elements that a particular social policy embodies, and to allow people to opt out of the latter without endangering the former. By using relevant information rather than suppressing it, an adverse-selection dynamic can be avoided. The same principle could be applied to a wide range of situations in which risk pooling is combined with redistribution. Society might, for example, be more willing to allow people to opt out of certain portions of the social welfare system if it could accurately price their expected claims against the system (very close to zero for some individuals).<sup>300</sup>

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298. Of course, some increment would have to be deducted from this amount to cover administrative costs; I have omitted that point from the textual example for simplicity.

299. People at high genetic risk could also opt out and receive the (higher) expected value equivalent of their potential claims—a move that would effectively convert society's in-kind redistribution to them (in the form of insurance) into cash redistribution. I thank Ariel Porat for discussions on this point. For further discussion of the alternative ways in which society might choose to meet the normative commitment that genetic nondiscrimination rules embody, see generally Logue & Slemrod, *supra* note 166.

300. There might be other reasons to oppose such a move, however, given the potential interdependence among risk choices. For example, allowing opt-outs may change the political economy in undesirable ways. See *supra* note 245.

*D. Pushing, Sticking, Blocking*

After setting an initial risk allocation, society must also decide how hard or easy it will be to move away from that allocation.<sup>301</sup> Making a risk arrangement the default selection makes it effortless to choose, while an alternative that people are literally blocked or stopped from selecting is prohibitively difficult to choose. Between these extremes lies a spectrum of possibilities, from making a choice simpler or more attractive to making it more difficult or less attractive.<sup>302</sup>

1. *Catalysts.* Making a risk allocation the default alternative is often the most direct and powerful way to encourage its adoption, but this approach may not always be feasible or may be undesirable for other reasons. In such cases, other ways to unstick the default selection may be sought. Richard Thaler and Cass Sunstein's notion of "one-click paternalism,"<sup>303</sup> which focuses on keeping opting-out costs low, offers one approach. This type of low-cost opting out, however, has been proposed in the context of governmentally chosen defaults that are, by assumption, deemed normatively desirable. Thus, proponents do not fear that people will opt for the alternative too rarely; because the superiority of the default selection is presumed, small numbers of opt-outs are counted as successes, not occasions for concern.<sup>304</sup> Moreover, the alternative arrangement is guaranteed to be delivered upon a single mouse-click. For default selections falling outside of this paradigm, easing or encouraging shifts may require overcoming obstacles on the supply side, the demand side, or both.

On the supply side, a REVE will obviously be maximally difficult to elect if no counterparty is willing to enter into it.<sup>305</sup> New markets in

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301. The relative neglect of this question has been noted in other contexts. See McDonnell, *supra* note 280, at 384 ("Despite the longstanding debate over default versus mandatory rules, scholars have paid much less attention to how easy it is to opt out of the default rules—that is, how 'sticky' the rules are.").

302. See *id.* at 385 ("Rather than the binary choice of labeling a rule as default or mandatory, we can place various rules along a spectrum of stickiness.").

303. THALER & SUNSTEIN, *supra* note 62, at 248–49 (discussing "one-click paternalism," which aims for opt-out procedures that are no more difficult than a single mouse-click).

304. See Sunstein & Thaler, *supra* note 278, at 1191 (stating that low numbers of people opting out of default savings plans "supports (though it does not prove) the claim that they are helped by a system that makes joining easy"). But see Gregory Mitchell, *Libertarian Paternalism Is an Oxymoron*, 99 NW. U. L. REV. 1245, 1254 (2005) (rejecting the idea that one can infer anything about preferences from outcomes produced solely by an inertial response to a default).

305. See Kunreuther & Pauly, *supra* note 19, at 98–110 (examining supply-side issues).

REVEs might be jump-started through governmental incentives directed at spurring innovation in risk<sup>306</sup> or other efforts aimed at reducing transaction costs associated with reversing background risk allocations.<sup>307</sup> Reversibility could also be advanced by requiring parties to offer an alternative risk arrangement along with the default, or by subsidizing them for offering this alternative.<sup>308</sup>

Additional problems exist on the demand side.<sup>309</sup> Research on consumers' insurance choices has found that behavior diverges considerably from a utility-maximization model, with consumers variously purchasing “too much” and “too little” insurance.<sup>310</sup> A rational-maximizer model would predict a greater willingness to pay to insure against large, unlikely losses than against routine, small losses, yet people often exhibit the opposite tendency.<sup>311</sup> People are generally reluctant to purchase insurance against catastrophic low-probability events,<sup>312</sup> but often obtain seemingly anomalous levels of coverage against small and routine losses, such as minor preventative health expenditures or problems with low-cost consumer goods.<sup>313</sup>

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306. See, e.g., SHILLER, *supra* note 195, at 208 (proposing subsidies for new markets).

307. See, e.g., Kunreuther & Pauly, *supra* note 19, at 116–17 (discussing a possible governmental role in lowering transaction costs in insurance markets).

308. The converse approach—not allowing a reversal alternative unless the original alternative is separately priced—is discussed below. See *infra* text accompanying notes 320–21.

309. See Kunreuther & Pauly, *supra* note 19, at 174–87 (examining demand-side issues).

310. See BARON, *supra* note 29, at 508–11; Johnson et al., *supra* note 19, at 35–37, 48–49; Kunreuther & Pauly, *supra* note 19, at 119–20; Slovic et al., *supra* note 29, at 46–47. As the discussion above suggested, however, there are some additional factors that complicate assumptions about what is the “right” amount of insurance for people to purchase. For discussion of some of these factors, see Schwarcz, *supra* note 19, *passim*; and see also *supra* text accompanying notes 36–41. For example, if people derive utility from insurance in ways other than through the money it provides, their behavior might be maximizing even if it would not appear that way to an onlooker. See *supra* note 40 and accompanying text.

311. See, e.g., Slovic et al., *supra* note 29, at 54–71 (presenting and analyzing results of experimental studies that gave people choices about whether and how to insure against risks in hypotheticals involving draws from an urn and a more concrete “farm game”).

312. See, e.g., Kunreuther & Pauly, *supra* note 19, at 92–93. There are some exceptions to this pattern that suggest errors running in the opposite direction. For example, people appear overly willing to insure against extremely unlikely events that are highly mentally available. See *id.* at 94–95 (discussing demand for flight insurance); see also Schwarcz, *supra* note 19, at 31–33 (describing the demand for catastrophe insurance as “bimodal”). There is also heterogeneity in willingness to pay for insurance coverage at all. For example, a significant subset of people (dubbed “invincibles” in the literature to signify their overoptimism) shuns health insurance altogether. See Baker & Siegelman, *supra* note 98, at 79.

313. See, e.g., Kunreuther & Pauly, *supra* note 19, at 65–66, 113–14; Cutler & Zeckhauser, *supra* note 164, at 19–20, 25–28.

Similarly, deductibles tend to be much smaller than utility theory would predict.<sup>314</sup>

A variety of approaches to these apparent patterns of mischoosing have been discussed in the literature, including strategies that rely on bundling and framing.<sup>315</sup> For example, a tendency to ignore low-probability risks might be countered by combining coverage for several such risks or aggregating risks over longer time periods.<sup>316</sup> Overoptimism and an aversion to spending insurance dollars for “nothing” might be addressed through systems that provide rebates to those who do not make claims.<sup>317</sup> Rebates could also be used to reframe (and perhaps improve) deductible choices, given research indicating that charges for insurance use (deductibles) are perceived differently from credits for insurance nonuse (rebates).<sup>318</sup> To the extent these approaches lower cognitive resistance to welfare-enhancing (or externality-reducing) REVEs, they would qualify as catalysts here. Other demand-side efforts might be directed at generating information and social support for new or unconventional risk-bearing arrangements.

2. *Dampeners.* That a risk allocation is not the default already puts something of a damper on it. But it is possible to do more, short of outright bans, to either discourage particular choices or minimize instances of mischoosing. Some of the design approaches discussed above, such as altering the timing and form of payments, could serve that function. Other familiar strategies to dampen shifts would include a more cumbersome administrative process, regulations that

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314. See, e.g., Kunreuther & Pauly, *supra* note 19, at 88–90; Justin Sydnor, *(Over)insuring Modest Risks*, 2 AM. ECON. J.: APPLIED ECON. 177, 177–79 (2010).

315. E.g., Kunreuther & Pauly, *supra* note 19, at 111–18; Schwarcz, *supra* note 19, at 40–45.

316. For a discussion of such strategies, see, for example, Howard Kunreuther & Mark Pauly, *Neglecting Disaster: Why Don't People Insure Against Large Losses?*, 28 J. RISK & UNCERTAINTY 5, 16 (2004); Schwarcz, *supra* note 19, at 40–41; Slovic et al., *supra* note 29, at 70–71. See also Kunreuther & Pauly, *supra* note 19, at 117, on bundling as a mechanism for lowering transaction costs.

317. See Baker & Siegelman, *supra* note 98, at 82 (proposing a “tontine” approach to health insurance that would pay a cash bonus to those who end up not using their coverage).

318. See Johnson et al., *supra* note 19, at 42–46 (studying potential framing effects in assessment of rebates for nonuse versus deductibles for use, and finding that rebates for nonuse make disability policies more attractive).

raise the effective price of the alternative, waiting periods before a choice becomes final, and so on.<sup>319</sup>

Another approach would require that a REVE be permitted only when the default arrangement remains available at a separately stated price. For example, although the law often disallows waivers of liability (an attempted reversal of the risk allocation in the tort system), some commentators have argued that such waivers should be permitted if they are offered along with a separately priced alternative in which traditional tort liability is preserved.<sup>320</sup> One could imagine additional variations on this theme in which the two prices, or the gap between them, is not left entirely to the discretion of the party offering the good or service, but is instead keyed to differences in the costs of offering the two alternatives. Such refinements bear an intellectual kinship with liability rules, in which transactions are eased by permitting one party to unilaterally accomplish a desired change in an entitlement structure upon payment of a specified price.<sup>321</sup>

The ultimate dampener, of course, is an outright ban. Although bans may be appropriate in some contexts, the preceding discussion suggests that policymakers might first consider precisely why a given REVE seems objectionable, whether its objectionable features can be cost-effectively excised without doing away with it altogether, and whether some measure short of a prohibition would respond to concerns about it. Perhaps the strongest case for bans emerges when heterogeneity in risk arrangements is itself problematic, as through adverse selection. Even there, however, it is worth examining whether heterogeneity reached from different starting points with different degrees of stickiness can do a better job of avoiding these difficulties.

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319. In-kind impositions (waiting periods, extra mouse-clicks, queues) are usually thought to be especially costly because they destroy value outright rather than merely transferring it elsewhere. *See, e.g.*, DONALD N. MCCLOSKEY, *THE APPLIED THEORY OF PRICE* 342–43 (1982).

320. *See, e.g.*, Mark Geistfeld, *The Political Economy of Neocontractual Proposals for Products Liability Reform*, 72 *TEX. L. REV.* 803, 821–23 (1994) (discussing this proposal and quoting the ALI Reporters' Study that deemed the idea worthy of "further attention"); Schwartz, *supra* note 34, at 407 (discussing the possible advantages of a system that would require manufacturers of potentially harmful products to offer buyers a choice between two prices—"full" and "reduced"—that differ as to strict liability coverage).

321. *See* Calabresi & Melamed, *supra* note 23, at 1092 (explaining how liability rules work). More generally, entitlement theory could bring important insights to risk shifting. Morris took a step in this direction by including "Transferred Claim rules" in her taxonomy of entitlements in Morris, *supra* note 2, at 866–75.

## CONCLUSION

Familiar devices like insurance policies and lottery tickets allow people to rearrange risk, but they offer access to only a small subset of imaginable risk configurations. Law, public policy, and entrenched commercial and social practices also pervasively structure risk, but they typically do so without comment and without offering any means for undoing the resulting risk allocation. In this Article, I have used the REVE framework to direct attention to the enormous number of untapped possibilities for reallocating risk. Unlike most existing work on the topic, however, this Article does not argue the merits of any particular rearrangement of risk. Rather, it makes a case for paying attention to risk customization itself. Doing so not only points the way to new alternatives but also illuminates gaps in existing opportunities to trade in unbundled risk.

Many theoretically possible REVEs are doubtless unavailable for very good reasons—perhaps markets for them cannot be sustained, the moral-hazard problems attending them are too great, or the heterogeneity that they would introduce into risk allocations would be independently problematic. But it is also quite likely that many of the missing entries in the menu are absent for reasons that do not withstand careful scrutiny. Society's framing of various risk situations may have needlessly placed certain options off limits, and the tendency of discussions to conflate distinct objections may also have impeded resort to new risk-management tools. Finding new, workable alternatives to existing risk configurations offers the possibility of efficiency gains. An expanded menu of alternatives may also offer as-yet-unexplored opportunities to realize gains by exploiting the asymmetries associated with starting in one place rather than another. Asking how an alternative risk arrangement would look also directs attention to the often unacknowledged ways in which law spreads risk across groups or concentrates it on particular parties. Even if particular REVEs are ultimately rejected as unworkable, considering them carries the threshold benefit of allowing us to see more clearly how existing arrangements manage risk.

At bottom, the Article argues for a move to a new analytic baseline in thinking about risk. Risk is presently distributed and rearranged in very limited ways that are unlikely to represent the full complement of socially useful configurations. Systematically exploring possible risk moves pushes us to ask, with Arrow, how the



world would look if “we could introduce into the economic system any institutions we wish for shifting risks instead of being confined to those developed historically.”<sup>322</sup> Rather than unreflectively accept the smattering of risk arrangements that history and cognition have served up over time or engage in a haphazard and piecemeal contemplation of specific alternatives, scholars and policymakers might usefully work backward from the expanded set of alternatives suggested by the logic of risk unbundling.

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322. Arrow, *supra* note 7, at 138.