Lost in Translation: Law, Economics, and Subjective Standards of Care in Negligence Law

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Abstract

The law and economics movement has been a victim of its own success. Over the past four decades, it has generated an enormous specialist literature, often explicitly intended for other specialists. As is so often the case with increased specialization, the result has been escalating technical complexity accompanied by forbiddingly formal mathematics and a tendency to retreat into abstraction. As a result, economic analysis has often failed to provide general legal audiences with insight into important legal questions, even where the tools of economics would be appropriate and useful. This Article examines—and rectifies—just such a failure. In particular, this Article examines departures from a uniform reasonable person standard in negligence law. From an economic standpoint, individuals might be held to different standards of care because: (1) they differ in their costs of taking precautions (e.g., a good driver can take additional precautions more cheaply than a bad driver); or (2) they differ in the accident costs they generate when exercising a given amount of care (e.g., a good driver causes fewer accidents than a bad driver who is exercising the same precautions). Though the two possibilities lead to sharply different prescriptions, the law and economics literature has focused almost entirely on the former scenario, while neglecting the latter. By examining both possibilities, I provide a new and superior explanation of how tort law treats disabilities and professional skill, with the potential to

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change the way these important topics are conceptualized, taught, and ultimately adjudicated. In doing so, I also demonstrate the extent to which important legal insights can remain unappreciated when buried in an overly abstract mathematical literature.

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I. INTRODUCTION

The law and economics movement can lay a plausible claim to being the most influential development in legal scholarship over the past half-century. Tort law is, in some sense, the birthplace of that movement. From Ronald Coase's discussion of social costs to Calabresi and Melamed's exploration of liability rules to Posner's proposed "Theory of Negligence," many of the movement's seminal works are rooted in tort law. In the ensuing years, a voluminous literature has grown up around such important questions as the relative efficiency of negligence vs. strict liability, contributory negligence vs. comparative fault, settlement and class action dynamics, products liability doctrine, insurance, and professional malpractice.

As is so frequently the case, this literature has become increasingly specialized and technical over time. Articles nominally about "tort law" are often forbiddingly formal, involving mathematics far beyond the understanding of most lawyers, judges, and traditional legal academics.

The inevitable result of this specialization is that this scholarship has less practical impact than it might if it were more readily accessible.

Even more problematic, many contemporary law and economics articles are pitched at such a high level of abstraction that the implications for actual legal practice are hazy at best, perhaps even to the authors themselves. The situation calls to mind C.P. Snow's famous lament about "The Two Cultures." On the one side are practitioners and traditional scholars whose lack of mathematical sophistication forces them to consume the insights of law and economics at second hand, if at all. On the other are economists possessed of powerful analytic tools, but sometimes insufficiently familiar—or concerned—with the actual problems of tort law practice. All too often, the result is mutual incomprehension and unnecessary confusion, with important economic insights lost in translation.

This Article is principally concerned with one of these unnecessary confusions—in particular, the confusion surrounding departures from the "reasonable person" standard in negligence law. The immediate questions involved are important in and of themselves. More generally, however, this topic is emblematic of a growing mutual incomprehension. The subject treated here is one where even relatively simple economic reasoning can shed light, yet the matter has remained stubbornly murky. It is my hope that the discussion below will help to dispel the fog, and do so in a fashion that will be illuminating for economists and lawyers alike. More broadly, it is my hope that the discussion will serve as a reminder to non-economists of the insights economic reasoning can provide, and a reminder to economists of the care that must be taken not to abstract away vital practical questions.

First, consider the problem. One of the best-known rules in tort law is that, subject to several important exceptions, the "reasonable person" standard of care is an objective, uniform standard.[1] That is, the law expects people to behave as an ordinary, reasonable person would behave under the circumstances, and they will not be held liable for any injuries they cause so long as they do so.[2] Tort law does not typically

1. Joseph H. King, Jr., *Reconciling the Exercise of Judgment and the Objective Standard of Care in Medical Malpractice*, 52 OKLA. L. REV. 49, 49 (1999). As King put it:

> There are two core principles in the law of negligence. The first is that negligence law is a fault-based theory of liability (rather than strict liability), and therefore requires proof that the defendant's conduct was substandard. The second is that a person's conduct should be evaluated according to objective criteria, rather than by a subjective assessment.

Id.

2. *See, e.g.*, Vaughan v. Menlove, (1837) 132 Eng. Rep. 490 (C.P.); 3 Bing. 468 (N.C.); RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL

have one standard for the clumsy and another for the coordinated, one standard for the wise and another for the foolish.[3] A variety of explanations, both economic and otherwise, have been offered for this basic rule.[4]

The general rule is subject to several important exceptions. While negligence law holds most actors to an ordinary "reasonable person" standard, it applies different standards to children, the physically disabled, and certain professionals—most notably medical doctors—acting in their professional capacity. More broadly, regulatory licensing schemes frequently impose different obligations on individuals with varying skill or expertise.

This much is standard black letter law. Despite being such fundamental concepts, however, the reasonable person standard and the exceptions to it are plagued by a surprising amount of confusion. Judicial and scholarly attempts to explain and describe the nature of these departures from a uniform standard of care are often hopelessly confused and deeply unhelpful.

Courts and scholars have routinely described the physically disabled as being held to a "lesser,"[5] "lower,"[6] or "less onerous"[7] standard. In part, as discussed below, such statements merely echo the standard claim of law and economics scholars, that "[b]lindness, lameness, or infirmity, for instance, may lower the standard of care to which an individual would otherwise be held; strength, size, special knowledge, or professional skill may raise it."[8] This is certainly true in some sense, but as many commentators have pointed out—including the authors of a large number of influential torts casebooks—these broad claims are often misleading.[9] The disabled are often required to take burdensome precautions that the able-bodied are not.[10]

HARM § 3 cmt. a (2005) ("[T]he 'reasonable care' standard for negligence is basically the same as a standard expressed in terms of the 'reasonably careful person' (or the 'reasonably prudent person').");; RESTATEMENT (SECOND) OF TORTS § 284 (1965); OLIVER WENDELL HOLMES, JR., THE COMMON LAW 107–09 (1909).

3. *See, e.g.*, RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 11 cmt. a (2005) ("[A] person's claim of being born clumsy would not be regarded as relevant [to a negligence inquiry].").

4. *See infra* pp. 299–304.

5. DAN B. DOBBS, THE LAW OF TORTS 277 (2000).

6. *See* Holmes v. City of Oakland, 67 Cal. Rptr. 198, 202 (Ct. App. 1968).

7. *See* Caroline Forell, *Essentialism, Empathy, and the Reasonable Woman*, 1994 U. ILL. L. REV. 769, 779.

8. STEVEN SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW 75 (1987). As detailed below, Shavell suggests reasons why courts might hold disabled persons to a "higher" standard, though these arguments all proceed from the initial conclusion that, but for special considerations, they would optimally be held to a "lower" standard.

9. *See, e.g.*, DAN B. DOBBS ET AL., TORTS AND COMPENSATION: PERSONAL ACCOUNTABILITY AND SOCIAL RESPONSIBILITY FOR INJURY 115 (6th ed. 2009)

Nor is it clear, as it is often stated,[11] that professionals are generally held to a "higher" standard of care. On occasion, cases involve the *defendant* arguing for application of a professional standard, on the assumption that the professional standard will actually be more lenient than a jury tasked with deciding what constitutes reasonable care.[12] While some scholars have noted that the standard for professionals cannot always accurately be described as "higher," they have been unsuccessful in specifying how exactly the standard *should* be described.[13]

(questioning whether the exception for the physically disabled is always "an advantage" or whether it actually "cut[s] both ways"); AARON D. TWERSKI & JAMES A. HENDERSON, JR., TORTS 143 (2d ed. 2008) (suggesting somewhat cryptically that a physically disabled person "may have to be more careful to his disability," even if "he is not held to a higher standard of care."); Dominick VETRI ET AL., TORT LAW AND PRACTICE 89 (4th ed. 2011) ("The 'reasonable person with a physical disability' standard may require that a physically disabled person exercise greater care than would be required for physically able people in some situations."); *see also* 65A C.J.S. *Negligence* § 142 (2002) ("[I]t may be incumbent on one with a physical disability to put forth a greater degree of effort than would otherwise be necessary in order to attain that standard of care which is required of everyone.").

10. *See* Traphagan v. Mid-Am. Traffic Marking, 555 N.W.2d 778, 787 (Neb. 1996) (noting that a sight-impaired driver was required to wear special glasses and add mirrors to her car); RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 11 cmt. b (2010) (suggesting that "a blind [person] may be found negligent for walking over [unfamiliar] terrain without a cane or some other form of assistance"); DOBBS, *supra* note 5, at 282–83 (explaining that the "physical disability rule is not always protective of disabled persons"); Anita Bernstein, *The Communities That Make Standards of Care Possible*, 77 CHI.-KENT L. REV. 735, 747–48 (2002); Daniel L. Rubinfeld, *The Efficiency of Comparative Negligence*, 16 J. LEGAL STUD. 375, 377 (1987) (noting that "individuals with slower reflexes or concentration may be forced to drive more slowly than individuals with quicker reflexes, thus adding to their travel time").

11. *See, e.g.*, Aves v. Shah, 997 F.2d 762, 765 (10th Cir. 1993) (holding that a doctor who held herself out as a specialist could not object to jury instructions that held her to a higher standard of care); Johnson v. Westfield Mem'l Hosp., Inc., 710 N.Y.S.2d 862, 863 (Sup. Ct. 2000) (holding doctors to a "higher" standard of care); Rehabilitative Care Sys. of Am. v. Davis, 43 S.W.3d 649, 657 (Tex. App. 2001) (stating that "[t]he standard of care required for medical care givers is higher than the standard of care required of ordinary laypersons[,]" at least in part because "physicians and other medical care givers possess greater skill and knowledge than laypersons"); 1 RONALD E. MALLEY & JEFFREY M. SMITH, LEGAL MALPRACTICE § 15.4 (1989) ("No court has rejected the concept that a more demanding standard of care should be applied to specialists.").

12. *See, e.g.*, Myers v. Heritage Enters., Inc., 820 N.E.2d 604, 608–09 (Ill. App. Ct. 2004); *see also* DOBBS, *supra* note 5, at 633–34.

13. RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 12 cmt. a (2005). The Third Restatement's unhelpful description is typical of the more "sophisticated" approach to professional skill:

> [E]ven though the actor's extra skills can properly be considered, these skills do not establish for the actor a standard of care that is higher than reasonable care; rather, they provide a mere circumstance for the jury to consider in

In his influential treatise, the venerable William L. Prosser noted that "[i]t is sometimes said that a blind man must use a greater degree of care than one who can see; but it is now generally agreed that as a fixed rule this is inaccurate, and that the correct statement is merely that he must take the precautions, be they more or less, which the ordinary reasonable man would take if he were blind."[14] The Restatement has largely followed Prosser in this regard, with the same cagey approach toward the standard for special skill or disability.[15] While this retreat to "reasonableness" avoids saying anything flat-out inaccurate, it does so by dodging the question. Neither Prosser nor the Restatement offers any guidance in determining when more care should be required, and when less should be condoned. A more recent commentator, summarizing the unsatisfying state of understanding, suggests that "[n]ot higher, not lower, just different is the message from scholars."[16]

Different, but different how? When should a person be held to a higher standard, and when to a lower standard? What does it even mean to hold someone to a "lower" or to a "higher" standard? Does it mean the law allows the disabled to create more risk of harm than other people? That it allows the disabled to take fewer precautions? Should the law do such a thing? If the law holds professionals to a "higher standard," does that mean they are required to achieve a greater degree of safety than other people, or to take more care? Are these synonymous? Might the same individual be required to take more of some precautions and less of others? Why, and when? In general, how should the law decide whether an individual should be held to a higher or a lower standard of care, and how would courts actually go about doing it?[17]

These are hardly unimportant questions of mere academic interest. They go to the very core of how courts and regulators proceed—or should proceed—in countless disputes. Furthermore, as I will show below, these questions lend themselves to relatively straightforward

> determining whether the actor has complied with the general standard of reasonable care.

Id.

14. WILLIAM L. PROSSER, THE LAW OF TORTS 151–52 (4th ed. 1971).

15. RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 11(a) (2010) ("The conduct of an actor with a physical disability is negligent only if it does not conform to that of a reasonably careful person with the same disability."); *id.* § 12 cmt. a (noting that "even though the actor's extra skills can properly be considered," such skills do not establish a "higher" standard of care, but rather provide a "mere circumstance" for the jury to consider; the possibility they might establish a lower standard of care is ignored).

16. Bernstein, *supra* note 10, at 749.

17. *Id.* at 740 ("[T]he choices between objective and subjective approaches to the standard of care reveal no particular logic. Nor has scholarly commentary shed much light on the problem.").

economic analyses, and rather clear answers. That such widespread confusion reigns decades after these questions should have been resolved is a testament to the massive amount of information that is simply lost in translation between economists and lawyers. The aim of this Article is to help take a clear view of departures from a uniform standard of care in tort law, and to evaluate in a clear-headed way the costs and benefits of a subjective standard.

As adumbrated above, a major source of confusion is the unfortunate myopia in the law and economics literature—a literature that could and should offer useful clarity in these matters. From an economic perspective, the "optimal" standard of care is one that minimizes total social costs. These social costs are usually considered to be the costs of accidents ("accident costs") plus the costs of precautions against accidents ("precaution costs").[18] Both accident costs and precaution costs depend on the level of care taken; typically, as the amount of care rises, precaution costs go up while accident costs go down. If we seek to minimize social costs, the standard of care should be set at the point where the marginal benefits of additional care are zero—that is, where the benefits of any additional precaution begin to be outweighed by the costs.

What matters in setting the standard of care, then, are not *total* social costs, but *marginal* social costs. Individuals with higher-than-average marginal gains from taking additional precautions would optimally take more precautions, while individuals with lower-than-average marginal gains from taking additional precautions would optimally take fewer precautions. In their seminal book, for example, Richard Posner and William Landes tell us that "[a] potential injurer who was very clumsy would have a low [optimal level of care] because his investment in care would be relatively unproductive and his marginal cost of care would be relatively high; one who had exceptionally quick reflexes would be highly productive and his marginal cost would be low, so he would have a high [optimal level of care]."[19]

Posner and Landes emphasize that one important implication of this model—indeed, the primary implication—is that if, instead of simply employing an objective standard, a court *were* to consider the defendant's individual capacity, the appropriate response would be to hold highly capable defendants to a higher standard, requiring them to take greater care than those who are less capable. It is likely that this

18. As we will see, the costs of any enforcement mechanism—i.e., the administrative costs of the tort system—must also be considered, and are often a crucial consideration in deciding between a uniform and a subjective standard of care.

19. WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF TORT LAW 123–24 (1987).

famous result is at least partially responsible for the confident assertion by many courts and commentators that those with professional skills are held to a "higher" standard while those with physical disabilities are held to a "lower" standard. This conclusion, crucially, rests on the assumption that an unusually skilled injurer would generate large marginal reductions in social costs by taking additional precautions, while an unusually unskilled injurer would generate low marginal reductions in social costs.

This is, however, not necessarily the case. There are, in fact, two ways that individuals can differ in the amount of social costs they generate when exercising a given degree of care. First, following Posner and Landes, individuals can experience different precaution costs in taking the same amount of care. Alternatively, individuals taking the same amount of care can cause different amounts of accident costs. In his landmark book *Economic Analysis of Accident Law*, Steven Shavell notes, for example, that "[p]arties may differ with respect to the costs they incur in exercising care and with respect to the effect that their exercise of care will have in reducing accident risks."[20]

Perhaps in part based on the assumption that it does not matter, law and economics scholars have overwhelmingly focused attention on the former possibility.[21] From a purely mathematical perspective, the distinction between the two scenarios is, indeed, seemingly inconsequential. In the same book, the usually reliable Shavell explicitly states that in his analysis "reference will be made, for simplicity, only to differences in parties' cost of taking care, although what will be said will plainly bear equally on differences in the effectiveness of their exercise of care."[22] More recently, in the latest edition of Polinsky and Shavell's influential *Handbook of Law and Economics*, Shavell again assures readers that a model where injurers vary "in their cost of exercising care" would generate conclusions "similar" to those of a model where injurers vary in their "likelihood of causing harm."[23]

Accordingly, law and economics scholars have largely followed Shavell in focusing on scenarios where an injurer with "greater capacity" or "skill" has a lower marginal cost of care; that is, each additional "unit" of care will cost the skilled individual less than it would cost the unskilled individual, resulting in a larger marginal benefit from

20. SHAVELL, *supra* note 8, at 73.
21. *See infra* pp. 304–05.
22. SHAVELL, *supra* note 8, at 73.
23. *See* Steven Shavell, *Liability for Accidents*, *in* 1 HANDBOOK OF LAW AND ECONOMICS 139, 159 (A. Mitchell Polinsky & Steven Shavell eds., 2007).

additional care.[24] In other words, the "model" typically presented—which I will refer to as the "Standard Model"—is that people are all alike in the accident costs they create at a given level of precaution, but that some (skilled) individuals will find it easier than others to take additional precaution.[25]

While it is true that the two scenarios—lower precaution costs for skilled injurers or lower accident costs for skilled injurers—are largely interchangeable as a matter of formal mathematics, the choice makes enormous practical difference when one attempts to translate the math back into concrete examples. As applied to many common accident scenarios and types of precautions, the assumption that individuals differ in precaution costs but not accident costs leads to dubious conclusions, and does so in a way that is not always obvious when the discussion is kept abstract. The simple change in assumptions, dismissed by Shavell as immaterial, actually leads to sharply different practical conclusions.

In fact, if one instead assumes that unusually skilled injurers experience the same precaution costs but generate lower accident costs at a given level of care, the marginal benefit of increased care may actually be lower for the skilled than for the unskilled. Because skilled injurers cause less harm at any given level of care, less harm is avoided by taking additional care. Where this is the case, the Posner-Landes analysis breaks down—including the most basic prescription that skilled individuals should optimally be held to a higher standard of care than unskilled individuals. Instead, skilled individuals should be held to a lower standard of care.

Some simple, everyday examples can aid in understanding. For the Standard Model, we can borrow a classic example from Shavell: a strong person could more easily clear a sidewalk of ice and snow than could a frail person, producing a larger marginal reduction in social costs (the same reduction in accidents for less investment in precaution).[26] But compare another example. Consider the most basic precaution the driver of a car can take: slowing down. There is no reason to think that the costs the skilled driver bears by going slower—primarily the opportunity cost of her time—will be any lower than for an unskilled driver. Her

24. More general models are often more abstract, but typically retain the assumption of greater marginal reductions in cost from care for highly capable individuals.

25. The term "skilled" is used throughout in a special sense. Greater "skill" in this context simply means an ability to achieve a lower level of accident costs for a given expenditure in precaution costs—it does *not* mean "safer." It is entirely possible for a person to be "skilled" but dangerously reckless, or "unskilled" but extremely cautious and safe. Potential examples of "skill," as it used here, include unusual strength, knowledge, technological sophistication, agility, quick reflexes, and situational awareness.

26. *See* SHAVELL, *supra* note 8, at 74.

slowing down is also not likely to be more productive in reducing accident costs. In fact, the contrary is likely true.[27] There is every reason to think that speeding by an unskilled driver will cause more accidents than speeding by a skilled driver. Consequently, slowing down would avoid more accidents for the ordinary driver than for the highly skilled driver. The result is that the skilled driver produces a smaller marginal reduction in social costs by taking additional precaution (fewer accidents avoided for the same investment in precaution).

By being sensitive to context and choosing the assumptions that best apply for the situation and precautions under consideration, we can move beyond the unhelpful conclusion that subjective standards are "not higher, not lower, just different." Sometimes they are higher and sometimes lower, but for good and knowable reasons. Where skilled injurers experience lower precaution costs than normal, but generate the same accident costs at a given level of precaution, they should ideally be required to exercise greater precaution. Where skilled injurers generate lower accident costs than normal at a given level of precaution, but face the same precaution costs as anyone else, they should ideally be allowed to exercise less precaution.

For a mathematically inclined economist, it is not too difficult, if one actually muddles through the equations, to see that a skilled injurer can produce either a higher- or lower-than-average marginal gain from additional care, depending on the circumstances. From this fact naturally emerges the prescription just described. Yet one scours the law and economics literature in vain for a straightforward explanation of this (hardly incidental) idea. Furthermore, as I will demonstrate below, this initial insight leads to a number of important and surprising conclusions that are far from obvious.

The core of this Article answers the questions posed at the outset by analyzing the scenario ignored by Shavell and other law and economics scholars: situations where individuals vary in their likelihood of causing harm, rather than in their cost of taking precautions. In this scenario, an injurer with greater capacity or skill will generate less risk at any given level of care, but would incur the same (or similar) costs in taking the discrete actions or precautions that constitute due care.[28] For ease of expression, I will refer to this set of assumptions as the "Inverse Model" to emphasize the contrast with the typical assumptions found in the

27. *See infra* pp. 322–24. Shavell and others, of course, do not argue that unskilled drivers should be permitted to drive faster than skilled drivers. As detailed more fully below, however, Shavell avoids this absurd prediction not by positing a lower marginal benefit of care for unskilled injurers, but rather via a more complicated argument regarding activity levels.

28. *See infra* pp. 319–21.

relevant literature. Contra Shavell, the distinction between the two sets of assumptions matters.

The implications of the analysis below are broad and in many ways counterintuitive. First, as already suggested, the Inverse Model suggests that skilled injurers should sometimes be held to a lower standard of care—a result that is undoubtedly already understood intuitively, but has not been clearly articulated and explained. In this fashion, the analysis captures the reasoning behind licensing requirements—allowing people who can demonstrate certain skills to do things and proceed in ways that would be too dangerous for the unskilled to do.

The remaining conclusions are less obvious and demonstrate the value of economic reasoning in uncovering unintuitive results. A standard prediction of the law and economics literature is that a skilled injurer faced with a uniform reasonable person standard will simply conform to the uniform standard, rather than to the (higher) level of care that the Standard Model tells us would be optimal for the skilled injurer, thus leading to inefficiency.[29] Where the Inverse Model applies, however, the situation is reversed. When faced with a uniform standard, a skilled injurer will *not* conform to it, and instead will conform to the (lower) level of care that the Inverse Model tells us is optimal for that injurer.[30] As a result, instead of the uniform reasonable person standard creating a "pocket" of what effectively is strict liability for the unusually incapable,[31] it will create a pocket of what effectively is strict liability for the unusually capable.[32] For example, if the assumptions of the Inverse Model apply, an unusually skilled driver would find it more costly to obey the speed limit than to simply speed and face liability for any accidents that result.[33]

Even more intriguing, where injurer skill is plastic—that is, where potential injurers can invest in developing greater skill—the Standard Model implies that a uniform reasonable person standard can be seen as guarding against providing disincentives to developing greater skill. Raising the standard of care for skilled injurers would raise the marginal cost of developing skills in the first place.[34] So, for example, a driver might decide not to take a course in defensive driving if doing so would cause her to be held to a higher standard of care. Where the Inverse

29. *See infra* pp. 297–99.
30. *See infra* pp. 322–24.
31. *See infra* p. 311.
32. *See infra* pp. 327–28.
33. This result assumes—unrealistically, of course—that the speed limit has no legal significance except as a standard for negligence in tort law. Given sufficiently high fines for speeding violations, even skilled drivers may choose to adhere to the speed limit.
34. *See infra* p. 303.

Model applies, the situation is again reversed, in that tailoring the standard of care for a skilled injurer would involve *lowering* the level of care required, allowing the injurer to capture more of the benefits of developing skills. As a result, under many plausible conditions, the use of a uniform reasonable person standard may actually be stifling desirable investment in innovation and development of greater skill.[35]

Finally, and least intuitively, where the Inverse Model applies, a new form of subsidy for desirable investment in the development of skill may be possible. Specifically, under the new model, it is possible, under certain conditions, to enhance efficiency by "over-tailoring" the negligence standard—allowing skilled injurers to exercise *even less* care than is individually optimal—in order to provide additional incentive to invest in skill.[36] Such conditions are never possible where the Standard Model applies.[37] Over-tailoring the negligence standard offers a potentially attractive alternative to traditional subsidies, in that it would allow individuals who would benefit most from the subsidy to self-select.

Part II of this Article provides an overview of the uniform reasonable person standard as it exists in tort law, and briefly rehearses the traditional economic arguments in favor of such a standard. Next, Part III introduces the Standard Model of injurer skill, shows how it has become the conventional "law and economics story" over the past three decades, and demonstrates the model's implications for departures from the uniform standard of care. Part IV then examines how courts actually determine injurer negligence in various common accident scenarios, and shows how actual doctrine does not conform to the prescriptions of the Standard Model. Parts V and VI form the analytical core of this Article. Part V introduces the Inverse Model and develops it through a simple example, while Part VI sets forth the major implications of the new model.

A note is in order at the outset. While the arguments presented below are, at their heart, economic and even mathematical in nature,[38] I have strived to present them in words rather than equations.[39] The use of formal mathematics would undoubtedly make the paper shorter, and likely easier to follow for the mathematically inclined. That is the great value of abstraction—it makes it easier to hold in the mind (and on the

35. *See infra* pp. 329–31.

36. *See infra* pp. 331–33.

37. Unfortunately, it is difficult to present an easily comprehended example at the outset—the reader will simply have to bear with me.

38. In particular, I stick entirely to a simple economic conception of social costs, and do not consider concepts like fairness, morality, or cultural norms and expectations.

39. Where I believe equations may be of assistance to some readers, I have relegated them to the footnotes.

page) arguments and relationships that might otherwise grow unwieldy.[40] But proceeding mathematically would threaten to perpetuate the very problem of over-abstraction I intend to highlight. The broader purpose of this Article is to serve as a reminder of the insights that can be lost in translation when the concrete does not inform the abstract, and vice versa. Only by persistently translating the abstract into the concrete can we ensure that the abstract does not cross over into the artificial.

II. THE UNIFORM REASONABLE PERSON STANDARD

A. The Uniform Standard

One of the first things an aspiring lawyer learns in a first-year torts class is that, over a wide range of situations, tort law imposes a duty to behave as a reasonable person would under the circumstances.[41] If a defendant is found to have breached this duty—in other words, to have exercised less care than a reasonable person would have under the circumstances—then the defendant is negligent, and can generally be held liable for any injury his negligence caused.[42]

The next thing a beginning student usually learns is that this "reasonable person standard" is an objective, *uniform* standard. In deciding whether a defendant was negligent, the law compares his conduct to that of a hypothetical ordinary reasonable person, and not to a person with the defendant's specific attributes and abilities or infirmities.[43] As Oliver Wendell Holmes phrased it, a man's

40. In part because of this commitment to avoiding mathematical formalism where possible, I consider only the simplest unilateral accident scenarios, where only the defendant's level of precaution affects the expected level of accident costs. Only an extreme masochist would consider more complicated multilateral accidents, involving questions of comparative fault, without the shorthand of mathematics.

41. *See, e.g.*, Heaven v. Pender, 11 Q.B.D. 503, 509 (1883); RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL & EMOTIONAL HARM § 3 (2005).

42. Technically, the tort of negligence consists of four elements: (1) duty; (2) breach; (3) actual and proximate causation; and (4) injury. A defendant will not be liable for the tort of negligence unless all four elements are satisfied. It is conventionally said, however, that a person who has breached an applicable duty of care has been "negligent." To avoid unnecessary linguistic gymnastics, this Article will adopt this convention, and refer to conduct that breaches the applicable standard of care as "negligence," and a person who engages in such conduct as "negligent."

43. RESTATEMENT (SECOND) OF TORTS § 283 (1965) ("The [negligence standard] must be an objective and external one, rather than that of the individual judgment, good or bad, of the particular individual. It must be the same for all persons, since the law can have no favorites. . . ."). The reasonable person standard is objective in a second important way as well, that will be discussed further *infra* pp. 313–14. The standard looks to the defendant's actual, objective, external conduct—something that can be directly observed—and asks whether that conduct was reasonably careful. It does not delve into the defendant's subjective internal state of mind—which cannot be directly observed—and ask whether he was really "trying his best" to be careful. JOHN C.P.

"neighbors . . . require him, at his proper peril, to come up to their standard, and the courts which they establish decline to take his personal equation into account."[44]

The best-known early precedent for the rule that the reasonable person standard of negligence law is an objective standard is *Vaughan v. Menlove*.[45] In *Menlove*, the defendant (Menlove), a farmer, had stacked moist hay in a manner that risked spontaneous combustion, despite the repeated warnings and protestations of his neighbors.[46] Eventually, the hay ignited and the fire spread, burning down a neighbor's cottages. When the neighbor sued, claiming that Menlove had not behaved as a "prudent man" would under the circumstances, Menlove's defense was, in essence, that he was *not* a prudent man—he was a fool—and that the law should not expect him to behave as a prudent man would behave. As Menlove's attorney put it, Menlove had the "misfortune of not possessing the highest order of intelligence," and rather than being required to behave like an ordinary prudent man, he should only be required to behave "bona fide to the best of his judgment."[47]

The English court rejected this provocative argument, holding that "[i]nstead . . . of saying that the liability for negligence should be co-extensive with the judgment of each individual, which would be as variable as the length of the foot of each individual, we ought rather to adhere to the rule which requires in all cases a regard to caution such as a man of ordinary prudence would observe."[48] It is still largely the case that "[a]n individual whose ability to take care is below average, perhaps because he has poor reflexes, is not excused on that account, and an individual who is above average in his ability to take care—perhaps because of exceptionally good reflexes—generally is not held to a higher standard than the average person would be."[49]

GOLDBERG ET AL., TORT LAW: RESPONSIBILITIES AND REDRESS 168–69 (3d ed. 2012). By contrast, many aspects of criminal law—the majority standard for entrapment, to take one example—apply subjective standards. *See* Andrew Carlon, *Entrapment, Punishment, and the Sadistic State*, 93 VA. L. REV. 1081, 1089 (2007) (noting that the majority of jurisdictions utilize a "subjective" standard for entrapment); Andrew H. Constinett, *"In a Puff of Smoke": Drug Crime and the Perils of Subjective Entrapment*, 48 AM. CRIM. L. REV. 1757–58 (2011).

44. HOLMES, *supra* note 2, at 108.

45. Vaughan v. Menlove, (1837) 132 Eng. Rep. 490 (C.P.); 3 Bing. 468 (N.C.).

46. *Id.* at 490–91.

47. *Id.* at 492.

48. *Id.* at 493.

49. LANDES & POSNER, *supra* note 19, at 126 (citing W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS 173–93 (5th ed. 1984)); *see also* RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL & EMOTIONAL HARM § 11 cmt. a (2005) ("[A] person's claim of being born clumsy would not be regarded as relevant [to a negligence inquiry].").

B. Costs of an Objective Standard

The use of a uniform reasonable person standard creates some genuine allocative inefficiencies, in addition to any unfairness it might entail.[50] To understand why, it is helpful to consider a simple economic model of the costs associated with accidents. For each potential injurer undertaking a given activity, there is an "efficient" or "optimal" level of care that minimizes the social costs of accidents, which are the sum of the losses to others from injuries caused by the activity[51] and the precaution costs associated with taking care to avoid additional injuries.[52] In general, both losses and precaution costs are functions of the amount of care taken, with precaution costs increasing and losses decreasing as care increases.[53] The individually optimal standard of care is found where the marginal costs of additional care are equal to the marginal reduction in losses with additional care, such that any additional increment of care would cost more than the accidents that would be avoided.

Where an injurer exercises an optimal level of care, she takes all cost-justified precautions, and only cost-justified precautions. If the

50. While it is certainly possible to defend the objective reasonable person standard on fairness grounds, the standard is generally viewed as something of a challenge for moralistic accounts of tort law. After all, where are notions of "moral responsibility" when someone is held to a reasonable person standard they cannot—and even *should* not—meet? *See, e.g.*, Jeffrey J. Rachlinski, *Misunderstanding Ability, Misallocating Responsibility*, 68 BROOK. L. REV. 1055, 1057 (2003) ("[T]he reasonable person test might . . . produce results wholly inconsistent with ordinary notions of justice and fairness."). As a result, defenses of the objective reasonable person standard, like the ones considered *infra*, tend to be largely functional and economic in nature. *See, e.g.*, Lyrissa Barnett Lidsky, *Nobody's Fools: The Rational Audience as First Amendment Ideal*, 2010 U. ILL. L. REV. 799, 842–43 ("Although the reasonable person standard seems unfair or unjust because it holds individuals to cognitive standards they cannot meet, it makes the negligence inquiry 'tractable' for lawyers and juries."). *But see* Richard W. Wright, *The Standards of Care in Negligence Law*, *in* PHILOSOPHICAL FOUNDATIONS OF TORT LAW 249, 257–59 (David G. Owen ed., 1995) (suggesting that an objective standard is consistent with Kantian morality); Jules L. Coleman, *Legal Theory and Practice*, 83 GEO. L.J. 2579, 2603–04 (1995) (defending an objective standard as comporting with a reasonable conception of liberty and security). At any rate, this paper will focus exclusively on efficiency, ignoring admittedly important questions of fairness and justice.

51. Of course, the injurer herself may suffer injuries from accidents she causes. Because these costs are borne by the injurer, however, they can simply be rolled into the calculation of precaution costs without affecting the analysis (i.e., a precaution that costs the injurer $3 while preventing $2 in injuries to the injurer can simply be treated as generating a net precaution cost of $1).

52. *See* GUIDO CALABRESI, THE COSTS OF ACCIDENTS 26 (1970).

53. Following the literature, $L' < 0 < L''$, meaning that additional care reduces expected losses at a decreasing rate. Phrased differently, there are diminishing returns to additional care. *See* LANDES & POSNER, *supra* note 19, at 59. The marginal cost of care is also assumed to be positive and non-decreasing ($P' > 0$; $P'' \geq 0$).

injurer takes *less* than the optimal level of care, she will be causing injuries that would cost less to avoid than to pay for. If the injurer takes *more* care than the optimal level of care, she will be avoiding injuries that would cost less to pay for than to avoid. Thus, any deviation from the individually optimal level of care creates social inefficiency, because the injurer is either failing to take cost-justified precautions, or is taking precautions that are not cost-justified.

The use of an objective reasonable person standard, rather than an optimal standard tailored to each individual, induces some injurers to deviate from the individually optimal level of care, thus creating social costs. To understand why injurers deviate from the individually optimal level of care, it is helpful to consider the incentives faced by injurers under a negligence regime using a reasonable person standard. Under an objective reasonable person standard, where the injurer has taken care greater to or equal to the level required by the reasonable person standard, she faces only the costs of taking such care, and will not be held liable for any injuries she may nevertheless cause.[54] Where the injurer takes less care than is required by the reasonable person standard, she is negligent, and will bear both the cost of care and also the costs of being held liable for the injuries caused by her negligence. These liability costs are simply the difference between the expected injuries at the injurer's actual level of care and the expected injuries at the reasonable person standard of care.[55]

Faced with these costs, an injurer for whom the individually optimal standard of care is less than the uniform reasonable person standard will only exercise care at the individually optimal level, even though doing so exposes her to liability. For these injurers, any care above the

54. For purposes of this analysis, the possibility of contributory negligence is ignored, as consideration of victim care would complicate the analysis without altering the results.

55. Many law and economics formulations neglect to subtract out the injuries that would have occurred even had the injurer exercised reasonable care. *See, e.g.*, LANDES & POSNER, *supra* note 19, at 75. This simpler formulation—which leads to a similar analysis—is not a technically accurate description of tort doctrine. A negligent injurer is not responsible for *all* injuries caused by her activities; she is only responsible for injuries caused by *her negligence*. *See* Martin v. Herzog, 126 N.E. 814, 816 (N.Y. 1920) ("A defendant who travels without lights is not to pay damages for his fault, unless the absence of lights is the cause of the disaster. . . . Proof of negligence in the air, so to speak, will not do.") (citation omitted) (internal quotation marks omitted); Berry v. Sugar Notch Borough, 43 A. 240 (Pa. 1899); Mark F. Grady, *A New Positive Economic Theory of Negligence*, 92 YALE L.J. 799 (1983); Marcel Kahan, *Causation and Incentives to Take Care Under the Negligence Rule*, 18 J. LEGAL STUD. 427 (1989). In practice, of course, it may be difficult to determine whether an accident would have occurred even in the absence of negligence, and courts may err on the side of imposing liability on negligent defendants. This possibility—or rather the anticipation of this possibility—can lead to additional allocative inefficiencies. *See* LANDES & POSNER, *supra* note 19, at 124.

individually optimal level will cost more than the accidents such care avoids. The injurer would thus find it "too costly to bring himself up to [the uniform reasonable person standard] relative to the benefits of avoiding liability for the victim's damages."[56] This, somewhat counterintuitively, is a socially efficient result insofar as the injurer would remain at the individually optimal level of care, rather than wasting resources measuring up to a reasonable person level that is too stringent for her.[57]

The news is less sanguine with regard to injurers for whom the individually optimal standard of care is greater than the reasonable person standard. These individuals will find it in their best interest to exercise care only up to the level of the reasonable person standard, because this will be sufficient to relieve them of all liability. Any additional care would impose greater precaution costs on the injurer, without relieving him of any losses he would otherwise bear.[58] As a result, such an injurer will use less care than would be individually optimal, causing injuries it would cost less to avoid—a socially inefficient result brought about by the use of an objective reasonable person standard. Given that individual capacity for care is likely to be, as the *Menlove* court phrased it, "as variable as the length of the foot,"[59] this inefficiency is almost certainly pervasive.[60]

C. Economic Justifications for an Objective Standard

If the objective reasonable person standard generates inefficiency, why is it such a bedrock rule of negligence law? If measuring an individual's capabilities were as easy as measuring the length of his foot, it might not be. To understand the objective standard, at least from an economic perspective, we must consider the other component of Calabresi's "costs of accidents"—the costs of administering the torts

56. LANDES & POSNER, *supra* note 19, at 125.

57. If, as discussed *supra* note 51, the injurer for whom the individually optimal level of care is less than the reasonable person standard anticipates that a court may impose the costs of *all* accidents she causes on her—rather than just those caused by her negligence—then she might decide to raise her level of care to the reasonable person standard in order to avoid all liability. *See id.* at 124–25. This would represent an inefficient result, in that the injurer would be incurring more precaution costs than the injury costs avoided thereby.

58. *See id.* at 124 (noting that the injurer "has no incentive to use more than [*x*]* care (the reasonable-man standard) because to do so would increase his costs without reducing his expected liability, which, by assumption, is already zero.").

59. Vaughan v. Menlove, (1837) 132 Eng. Rep. 490, 493 (C.P.); 3 Bing. 468 (N.C.).

60. Alfred Endres & Tim Friehe, *The Reasonable Person Standard: Trading Off Static and Dynamic Efficiency*, EUR. J.L. & ECON., Nov. 11, 2011, at 4 ("It is by now well established that the reasonable person standard is disadvantageous because it holds parties investing different levels of precaution costs to the same level of care.").

system.[61] The alternative to an objective standard—a personalized negligence standard—would require courts to assess an individual defendant's capabilities and tailor the standard of care to those capabilities. The costs of doing so are likely to be high, especially in light of the fact that many litigants would have every incentive to conceal their true capabilities. After all, what is to prevent a defendant from arguing, like Menlove, that he is a fool or a klutz? As a result, the most common and powerful economic argument in favor of an objective standard is that the information and administrative costs associated with a more tailored standard would be prohibitive in most cases, swamping any allocative efficiency gains.[62]

The exceptions to the general rule appear to confirm that the difficulty of measuring individual capacity is at the root of the objective reasonable person standard. While courts will not apply a different standard to defendants who are merely clumsy, weak, or of low intelligence, they will take into account many obvious disabilities, such as blindness,[63] deafness,[64] or lack of a limb.[65] Rather than requiring a blind person to take the care that a "reasonable person" would take, courts will only require that they take the care a "reasonable blind person" would take (including avoiding activities, such as driving, that would be unreasonable for a blind person to undertake).[66] Similarly, licensed professionals, such as doctors, acting within their professional capacity are generally held to the standard of a "reasonable

61. *See* CALABRESI, *supra* note 52, at 28.

62. *See, e.g.*, HOLMES, *supra* note 2, at 108 (pointing out the impossibility of "measuring a man's powers and limitations"); LANDES & POSNER, *supra* note 19, at 126 ("The allocative costs of forgoing individual standards of care are undeniable but must be compared with the costs of ascertaining each individual's due care level, an information cost."); SHAVELL, *supra* note 8; Peter A. Diamond, *Single Activity Accidents*, 3 J. LEGAL STUD. 107 (1974); Endres & Friehe, *supra* note 60, at 4 ("In the literature on the economics of tort law, the rationalization for applying the reasonable person standard by referring to unobservable precaution costs is well established and generally continues to be the sole explanation.").

63. *See, e.g.*, Poyner v. Loftus, 694 A.2d 69, 72 (D.C. 1997); Prostran v. City of Chicago, 811 N.E.2d 364, 368–69 (Ill. App. Ct. 2004); Smith v. Sneller, 26 A.2d 452, 453–54 (Pa. 1942); *see also* RESTATEMENT (SECOND) OF TORTS § 283C (1965) (collecting cases).

64. *See, e.g.*, Kerr v. Connecticut Co., 140 A. 751, 752 (Conn. 1928); Jakubiec v. Hasty, 59 N.W.2d 385, 388 (Mich. 1953); *see also* RESTATEMENT (SECOND) OF TORTS § 283C (1965) (collecting cases).

65. *See, e.g.*, Bianchetti v. Luce, 2 S.W.2d 129, 135 (Mo. Ct. App. 1927); Payne v. West Chester, 117 A. 335, 335 (Pa. 1922); *see also* RESTATEMENT (SECOND) OF TORTS § 283C (1965) (collecting cases).

66. *See* RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 11 cmt. b (2010) ("If, for example, an actor's vision is sufficiently impaired, it is negligent for that person to drive a car.").

professional,"[67] and children are held to the standard of care of children of similar age and development.[68]

With all of these "exceptions" to the usual rule, the defendant's reduced (or increased) capacity is obvious, relatively easy for a court to detect and take into account, and difficult or impossible for the defendant to fake or conceal.[69] The example of mental illness offers further credence to the notion that information costs are central to the failure of courts to tailor the negligence standard. Historically, the reasonable person standard made no allowance for mental illness; there was no "insanity defense" in tort law.[70] The difficulty in diagnosing mental illness, the ease of faking it, and the difficulty of taking it into account in tailoring the negligence standard combined to make the information costs of a tailored standard prohibitive. As technology and techniques improve, however—reducing the information costs associated with diagnosing and evaluating mental illness—applying an objective standard to the mentally ill may become increasingly dubious.[71]

Section 12 of the Restatement (Third) of Torts makes a more sweeping statement that "[i]f an actor has skills or knowledge that exceed those possessed by most others, these skills or knowledge are

67. *See* RESTATEMENT (SECOND) OF TORTS § 299A (1965).

68. *See* Dickeson v. Balt. & Ohio Chi. Terminal R.R., 245 N.E.2d 762, 764–65 (Ill. 1969); RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 10 (2010).

69. As the latest Restatement puts it, "[t]he physical disabilities [the negligence standard] takes into account generally need to be significant and objectively verifiable. For reasons relati[ve] to convenience of administration, it is not worthwhile to attempt to take into account disabilities that are minor or not susceptible to objective verification." RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 11 cmt a (2010). *See also* LANDES & POSNER, *supra* note 19, at 123 ("If the costs to the courts of informing themselves about an individual's ability to avoid accidents were zero, they would set a different due care level for each individual in every accident case."); *id.* at 127 ("In types of case [sic] where the information costs of departing from the average-man standard are low because the gap between the average individual's due care level and that of the individual defendant is large and palpable, the courts, as predicted, recognize a different standard.").

70. *See, e.g.*, United States v. Johnson, 416 F.3d 464, 469 (6th Cir. 2005); Breunig v. Am. Family Ins. Co., 173 N.W.2d 619, 623–24 (Wis. 1970); *In re* Meyer's Guardianship, 261 N.W. 211, 213 (Wis. 1935); *see also* RESTATEMENT (SECOND) OF TORTS § 283B (1965) ("[I]nsanity or other mental deficiency does not relieve the actor from liability for conduct which does not conform to the standard of a reasonable man under like circumstances.").

71. *See* Okainer Christian Dark, *Tort Liability and the "Unquiet Mind": A Proposal to Incorporate Mental Disabilities into the Standard of Care*, 29 T. MARSHALL L. REV. 311 (2004); Elizabeth J. Goldstein, *Asking the Impossible: Negligence Liability of the Mentally Ill*, 12 J. CONTEMP. HEALTH L. & POL'Y 67 (1995); Harry J.F. Korrell, *The Liability of Mentally Disabled Tort Defendants*, 19 LAW & PSYCHOL. REV. 1 (1995); Kristin Harlow, Note, *Applying the Reasonable Person Standard to Psychosis: How Tort Law Unfairly Burdens Adults with Mental Illness*, 68 OHIO ST. L.J. 1733 (2007).

circumstances to be taken into account in determining whether the actor has behaved as a reasonably careful person."[72] The reporters, however, suggest that outside of "distinctively dangerous" activities and preexisting relationships involving representations of special skill—such as the doctor-patient relationship—"the case on behalf of the rule in this Section is less compelling."[73] Indeed, other than cases where courts used expert skills to impart knowledge to the defendant that potentially rendered his or her conduct negligent,[74] the reporters are unable to cite a case involving strangers where the defendant's special skills resulted in a special standard of care.[75] The reporters do, however, acknowledge the manifest possibility that jurors might consider the defendant's level of skill *sub silentio*.

Recently, German economists Alfred Endres and Tim Friehe have formalized a somewhat subtler economic argument in favor of a uniform negligence standard, one that does not depend on the difficulty of determining an individual injurer's capacity for care.[76] Instead, Endres and Friehe "identify a potential trade-off between static and dynamic efficiency."[77] The intuition behind the argument is simple. The inefficiency associated with a uniform standard is a "static" inefficiency—it treats the parties' "skill," or capacity for care, as fixed, and gives suboptimal incentives for exercising care. But in many situations, an injurer's skill level is dynamic, not fixed. Technology progresses. Skills develop. Indeed, potential injurers can invest resources in developing greater skill or capacity for care: a car manufacturer can work to invent an improved braking system; a drug

72. *See* RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 12 (2010).

73. *Id.* § 12 cmt. a.

74. *See, e.g.*, Everett v. Bucky Warren, Inc., 380 N.E.2d 653, 658–59 (Mass. 1978) (finding that a hockey coach's extra knowledge and experience could be evidence of his negligence in supplying unsafe helmets); Hill v. Sparks, 546 S.W.2d 473, 476 (Mo. Ct. App. 1976) (finding that an experienced machine operator's special knowledge of the dangerousness of a machine could be considered by the jury in determining his potential negligence).

75. A Maryland court faced with the question noted that while "the question has never been precisely asked or answered by our appellate courts, dicta strongly indicate that neither the inexperience of a novice nor the professional experience of a truck driver affects the standard of care required of a driver." Capital Raceway Promotions, Inc. v. Smith, 322 A.2d 238, 246 (Md. Ct. Spec. App. 1974).

76. *See generally* Endres & Friehe, *supra* note 60. Endres and Friehe are both professors of economics—Endres at the University of Hagen, and Friehe at the University of Konstanz.

77. *Id.* at 2.

manufacturer can research compounds with fewer side effects; a driver can take a course in defensive driving.[78]

If, after an injurer has devoted resources to developing greater skill, a court were then to tailor the negligence standard by holding the injurer to a higher standard of care, the court would effectively be raising the marginal cost of developing greater skill by requiring the injurer to exercise greater care than if she had simply decided to remain less skilled. As a result, tailoring the standard of care to an individual's skill level can lead to sub-optimal investment in developing greater skill in the first place.[79] Section 12 of the Restatement (Third) of Torts explicitly recognizes this concern, and Endres and Friehe formalize it.[80]

Under an array of plausible circumstances, this "dynamic" inefficiency can outweigh the "static" inefficiency associated with a uniform reasonable person standard, thus making an objective negligence standard preferable to a tailored one.[81] In other words, there is a trade-off between "dynamic efficiency" (creating efficient incentives for developing greater skill) and "static efficiency" (creating efficient incentives for exercising care for a potential injurer with a given level of skill).[82] The reasonable person standard achieves dynamic efficiency at a cost to static efficiency, while a tailored standard achieves static efficiency at a cost to dynamic efficiency. Which type of standard is preferable depends on the circumstances. Courts pursuing efficiency should choose a uniform reasonable person standard wherever the combined information costs and dynamic inefficiencies of a tailored standard outweigh the static inefficiencies of a uniform standard. Thus, we arrive at the somewhat comforting conclusion that even where a tailored standard is possible, the uniform standard courts actually use may often be preferable.

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78. As Endres & Friehe put it, "care technology may be affected by innovative activities." *Id.* at 5.

79. This is not, in itself, a novel insight. The latest Restatement notes that:

> [T]o impose a higher level of liability on parties who have improved their knowledge and skills might have the effect, at least at the margin, of discouraging parties from making such improvements; in deciding whether to make the effort to acquire additional knowledge and skills, persons can anticipate that such an effort will impose on them a heightened burden of liability.

RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 12 cmt. a (2010).

80. *See id.*

81. Endres & Friehe, *supra* note 60, at 2, 16 ("[T]he static inefficiency due to the use of the reasonable person standard may sometimes be worth tolerating, because of the incentives the uniform due care level induces with respect to investments in progressing care technology.").

82. *Id.* at 2 ("[W]e identify a potential trade-off between static and dynamic efficiency.").

This argument, however—together with much of the conventional economic analysis of the uniform reasonable person standard—depends on a particular model of injurer "skill," which is introduced in the next Part.

III. THE STANDARD MODEL OF INJURER CAPACITY

A. The Standard Model

Recall that "skill" as used here simply means any capability that allows a potential injurer to achieve a lower level of accident costs for a given expenditure in precaution costs. Thus, "skill" can be anything from straightforward physical capabilities like strength and agility, to special knowledge like medical expertise, to technological sophistication allowing cheaper manufacturing of safety features. The abstract mathematics in the specialist literature on the economics of tort law allow for the possibility that lower accident costs can result from lower costs of precaution *or* lower accident costs at a given level of precaution.

In translating the abstract to the concrete, however, the law and economics literature has almost exclusively focused only on the first possibility—treating an unusually unskilled individual as having an unusually high marginal cost of care, and an unusually skilled individual as having an unusually low marginal cost of care.[83] At the same time, the expected level of accident costs are assumed to be the same for all potential injurers exercising a given level of care, regardless of the skill level of the potential injurer. The alternative possibility is mentioned only in passing, if at all.

In this respect, Shavell's treatment of the subject is illustrative—and perhaps, due to his strong reputation, partly responsible for the Standard Model's use as a starting point in subsequent works. In his landmark work *Economic Analysis of Accident Law*, Shavell opens his discussion of differences among parties by noting that "[p]arties may differ with respect to the costs they incur in exercising care and with respect to the effect that their exercise of care will have in reducing accident risks."[84] For the sake of "simplicity," however, Shavell limits his analysis "only to differences in parties' cost of taking care," while assuring the reader

83. Again, recall Landes and Posner's claim that:

> A potential injurer who was very clumsy would have a low [optimal level of care] because his investment in care would be relatively unproductive and his marginal cost of care would be relatively high; one who had exceptionally quick reflexes would be highly productive and his marginal cost would be low, so he would have a high [optimal level of care].

LANDES & POSNER, *supra* note 19, at 123–24.

84. *See* SHAVELL, *supra* note 8, at 73.

that "what will be said will plainly bear equally on differences in the effectiveness of their exercise of care."[85] As an example, he considers the precaution of clearing a sidewalk of ice, noting that a "young, able-bodied person"—a "skilled" individual, as the term is being used here—will be able to clear the sidewalk with relative ease, while an "elderly individual" will find the task extremely difficult.[86]

These assumptions of varying costs of exercising care and uniform accident costs at a given level of care are what one typically finds in the law and economics literature intended for a general legal audience.[87] As such, these assumptions will be referred to, collectively, as the "Standard Model."[88] The Standard Model, however, is far from universal, and is flatly inapplicable across a wide range of circumstances.

B. Implications of the Standard Model

In order to explore the implications of the Standard Model, assume, for simplicity's sake, that there are two types of injurers in the world—normal "unskilled" injurers and unusual "skilled" injurers.[89] These injurers exercise some level of care, impose losses on others from accidents, and bear precaution costs themselves. For the two types of injurers, these costs vary with the level of care. Under the Standard Model, skilled injurers generate the same level of expected losses as

85. *Id.*

86. In his mathematical treatment, Shavell sets k as the per-unit cost of exercising care for an injurer of type k, such that an injurer of type k experiences a cost of kx. In Shavell's model, all injurers cause the same level of accidents $l(x)$ at a given level of care x. *Id.* at 86.

87. *See, e.g.*,Warren F. Schwartz, *Objective and Subjective Standards of Negligence: Defining the Reasonable Person to Induce Optimal Care and Optimal Populations of Injurers and Victims*, 78 GEO. L.J. 241, 243 (1989).

> The sighted person is better able to take care in the sense that she can achieve each reduction in the risk of harm at a lower cost than is possible for the blind person. Graphically, . . . the marginal cost curve of taking care for the blind person is above that for the sighted person.

Id.; LANDES & POSNER, *supra* note 19, at 123–28; SHAVELL, *supra* note 8, at 73–77; Shavell, *supra* note 23, at 159; Endres & Friehe, *supra* note 60, at 4–5; Thomas J. Miceli, *On Negligence Rules and Self Selection*, 2 REV. LAW & ECON. 349, 351 (2006).

88. To fully flesh out the model, one must also make the quite reasonable assumptions that the marginal cost of additional care is positive and that there are diminishing returns to additional care. *See* LANDES & POSNER, *supra* note 19, at 123–24.

89. By "unusual," I simply mean that skilled injurers are rare enough so as not to appreciably affect the optimal uniform "reasonable person" standard of due care. This assumption could be relaxed without altering the basic analysis. Shavell, for example, considers a spectrum of skill levels, defining $f(k)$ as the probability density of k across the population. *See* SHAVELL, *supra* note 8, at 86. Adding more than one potential level of skill in this fashion complicates the analysis without changing the qualitative results presented here.

unskilled injurers at a given level of care, while facing precaution costs that are lower than the precaution costs faced by unskilled injurers.[90]

Because accident losses at a given level of care are the same for both skilled and unskilled injurers, both types of injurers will also experience the same marginal reduction in such losses with additional care.[91] Because skilled injurers experience lower costs in taking additional precaution than unskilled injurers, skilled injurers experience lower marginal costs of care than unskilled injurers.[92] By adding the requirements that all injurers experience diminishing returns from additional care and positive, non-decreasing costs of care,[93] we arrive at the assumptions of the Standard Model, represented graphically in Figure 1.

90. It may help to see this in equation form. The essential features of the Conventional Model are that $L_S(x) = L_U(x)$ and $P_S(x) = SP_U(x)$, with (S < 1), where $L_S(x)$ represents accident losses caused by a skilled injurer taking care x, and $L_U(x)$ represents accident losses caused by an unskilled injurer taking care x. Similarly, $P_S(x)$ is the level of precaution costs experienced by a skilled injurer, $P_U(x)$ is the level of precaution costs experienced by an unskilled injurer, and S is a factor representing the reduction in precaution costs experienced by a skilled injurer.

91. That is, $\partial LS/\partial x = \partial LU/\partial x$.

92. That is, $\partial P_S/\partial x = S\partial P_U/\partial x$.

93. That is, $L'(x) < 0 < L''(x)$, $P'(x) > 0$, and $P''(x) \geq 0$.

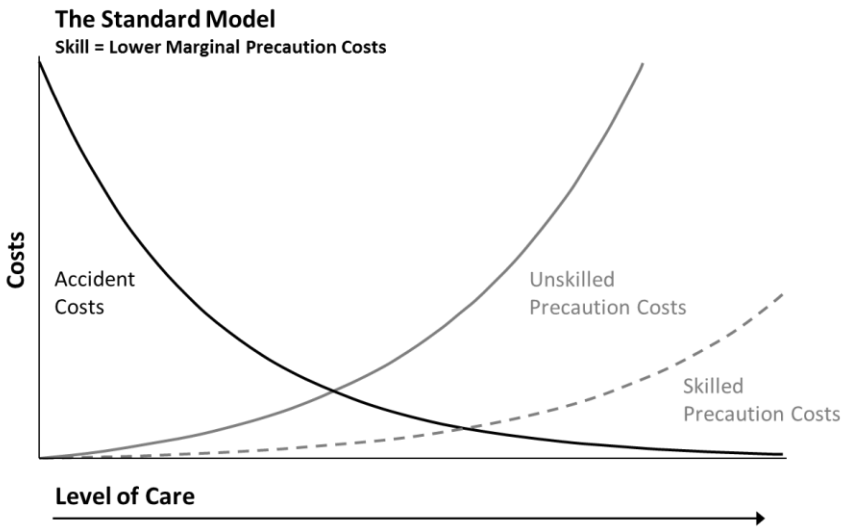

Figure 1. This graph shows the basic assumptions of the Conventional Model. Accident costs for both types of injurers are represented by the solid black curve. Precaution costs for unskilled injurers are represented by the solid gray curve, while precaution costs for skilled injurers are represented by the dashed gray curve. Note that, in accordance with the assumptions of the Conventional Model, precaution costs are lower for the skilled than the unskilled (the dashed gray curve is always below the solid gray curve), while accident costs are unaffected by skill.

Under this simple model, the social costs generated by unskilled injurers are simply the sum of the accident and precaution costs generated by such injurers. Meanwhile, the social costs generated by skilled injurers are the sum of the accident costs (which are the same) and the precaution costs (which are lower) generated by such injurers, plus the costs, if any, of becoming skilled in the first place.[94] A court seeking to minimize social costs, but prevented by information costs from individualizing the applicable standard of care, would simply set a

94. That is, $\mathrm{SC}_U = L_U(x) + P_U(x)$, and $\mathrm{SC}_S = L_S(x) + P_S(x) + I = L_U(x) + SP_U(x) + I$, where SC_U is the total social cost generated by an unskilled injurer, SC_S is the total social cost generated by a skilled injurer, and I represents the cost, if any, an individual incurs in becoming skilled. I will assume, with Endres and Friehe, that a court cannot observe the cost of becoming skilled. *See* Endres & Friehe, *supra* note 60, at 6. If the court could observe the cost of becoming skilled, this cost should be included with other precaution costs in determining the optimal level of care. In practice, though, if it is generally prohibitively costly to determine an injurer's level of skill, it should be yet more difficult to determine the cost to the injurer of *attaining* that level of skill.

uniform standard that minimizes the social costs generated by unskilled injurers.[95]

A court able (and willing) to tailor the standard of care to the individual injurer's skill level would impose one standard on unskilled injurers, but a separate standard of care on skilled injurers that minimizes the social costs generated by skilled injurers.[96]

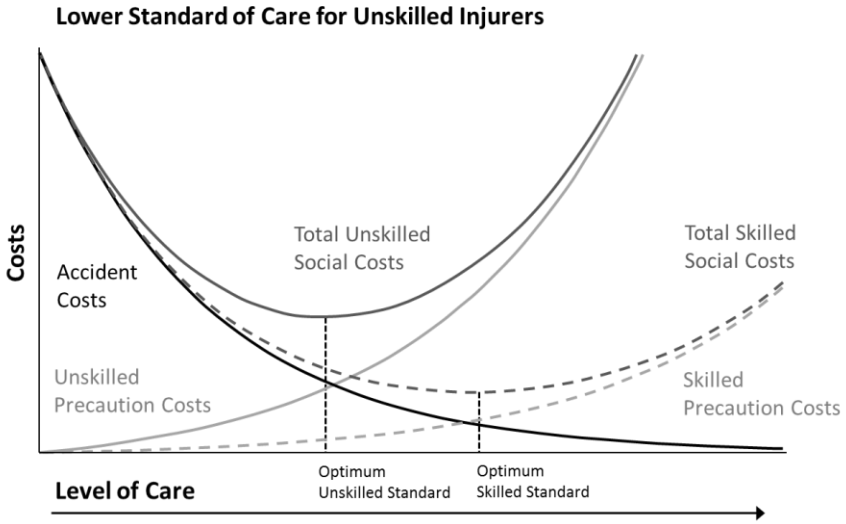

Figure 2. This graph demonstrates how skill affects the optimum level of care under the Conventional Model. Note that the level of care that minimizes social costs for the skilled injurer is higher (further to the right) than the level of care that minimizes social costs for the unskilled injurer. Note also that this graph ignores the cost, if any, of becoming skilled.

The standard results previewed in Part II flow naturally from these considerations. First, as shown in Figure 2, because skilled injurers face lower marginal costs of care but the same marginal reductions in accident costs, the optimal standard of care for skilled injurers will be greater than the uniform reasonable person standard, meaning that a tailored standard of care would require skilled injurers to exercise greater care than unskilled injurers.[97] Shavell, for example, suggests that "[i]f

95. Recall our assumption that skilled injurers are sufficiently rare as to not appreciably affect the optimal uniform standard of care.

96. *See* SHAVELL, *supra* note 8, at 86.

97. *See, e.g.*, LANDES & POSNER, *supra* note 19, at 123–24 ("A potential injurer who was very clumsy would have a low [optimal level of care] because his investment in care would be relatively unproductive and his marginal cost of care would be relatively high;

courts can distinguish the young and able-bodied person who can readily clear a sidewalk of ice from the elderly person who cannot, the first but not the second should be found negligent for failing to clear ice."[98]

Second, again because the optimal standard of care for skilled injurers is greater than the uniform reasonable person standard, a skilled injurer subject to a uniform standard of care will only exercise enough care to satisfy the uniform standard, rather than the higher, individually optimal level that would minimize total social costs.[99]

In addition, though we have been discussing a world with only two types of injurers, "skilled" and "unskilled," it is also easy to see that an unusually *un*skilled injurer—one with an abnormally high marginal cost of care, rather than an abnormally low marginal cost of care—would not generally bother living up to the reasonable person standard.[100] Because an unusually unskilled injurer would have an optimal level of care that is *less than* the uniform reasonable person standard, attempting to raise his level of care to the uniform standard would cost more in precaution costs than the liability he would avoid. As a result, under a uniform standard of care, unusually unskilled injurers will simply exercise the (lower) level of care that is individually optimal, thus exposing them to potential liability. The well-known result is that a uniform standard of care creates a "pocket" of strict liability for unusually unskilled injurers.[101]

Finally, as Endres and Friehe predict, because tailoring the standard of care would impose higher costs on skilled injurers, such tailoring would raise the marginal cost of becoming skilled and reduce investment in developing skill in the first place. That is, there are circumstances where it would be socially desirable for an individual to invest in

one who had exceptionally quick reflexes would be highly productive and his marginal cost would be low, so he would have a high [optimal level of care]."); SHAVELL, *supra* note 8, at 74 ("The socially optimal level of care of a party for whom the cost of taking care is low will usually exceed the optimal level of care of a party for whom the cost of taking care is high."); Shavell, *supra* note 23, at 159 (concluding that injurers "who are awkward or inept" will have a "low" optimum standard of care). As discussed below, Shavell identifies situations where it might be desirable to hold the "awkward or inept" to a higher standard of care, though the argument still assumes that, as an initial matter, a low-skill individual will find it more expensive to take additional precaution.

98. SHAVELL, *supra* note 8, at 74.

99. *See supra* pp. 297–99; *see also* SHAVELL, *supra* note 8, at 8 ("[I]njurers plainly would not take *more* than due care, because they will escape liability by taking merely due care.").

100. *See supra* pp. 298–99.

101. *See* MARK A. GEISTFELD, TORT LAW: THE ESSENTIALS 95–98 (2008); LANDES & POSNER, *supra* note 19, at 125; SHAVELL, *supra* note 8, at 88 (showing that unusually low-skill injurers will choose their individual-optimal level of care, rather than obeying the negligence standard); Mark A. Geistfeld, *Tort Law and the Inherent Limitations of Monetary Exchange: Property Rules, Liability Rules, and the Negligence Rule*, 4 J. TORT L. 1, 9 (2011).

becoming skilled,[102] and where they would choose to become skilled under a uniform standard, but choose to remain unskilled under a tailored standard.[103]

IV. THE PROBLEMATIC PREDICTIONS OF THE STANDARD MODEL

The discussion in Part III is decidedly abstract. Taken on their own terms, the conclusions reached seem almost inescapable, and not obviously problematic. Numerous examples can be given where they apply naturally. And, in fact, if the conclusions are stated breezily enough, they seem positively intuitive: high-skill individuals should optimally be held to a higher standard; low-skill individuals should optimally be held to a lower standard. That certainly *sounds* plausible. Yet if one digs beneath that surface plausibility, problems emerge almost immediately.

In evaluating the accuracy and usefulness of the Standard Model, it is absolutely essential to ask how exactly courts attempting to tailor the standard of due care might use the insights the model provides. Yet this is seldom done in a diligent fashion. What, in practice, would it mean for a court to require more skilled injurers to exercise a greater degree of care? Or, conversely, to require less care from less skilled injurers? For some types of precautions, the insights of the model are straightforward to apply. As a result, examples are easy to supply. A technologically sophisticated automobile manufacturer, for example, could more easily install safety features like airbags than could a technologically backwards manufacturer. The Standard Model quite appropriately suggests that a tailored negligence standard would ideally require the advanced manufacturer to adopt more safety features than the backwards manufacturer. Similarly, as suggested by Shavell, the Standard Model would suggest that it might be optimal for a healthy young homeowner to be held liable for failing to shovel their front walk, even where it may be

102. It is socially desirable for an individual to invest in becoming skilled when being skilled reduces total social costs by more than the cost of becoming skilled in the first place. Using the above formulas, it is socially desirable for an individual to become skilled when $\underline{SC}_S < \underline{SC}_U$ or, equivalently, when $I < (L_U(x_u^*) - L_U(x_s^*)) + (P_U(x_u^*) - SP_U(x_s^*))$. When $\underline{SC}_S > \underline{SC}_U$, it is socially undesirable for an individual to become skilled—the costs of the investment in skill outweigh the social benefits.

103. Just because it is *socially* desirable for an individual to become skilled does not mean it is *personally* desirable for the individual herself. It may be personally undesirable if the costs of becoming skilled are borne primarily by the individual, but the benefits accrue primarily to others. A full proof of this result is relatively straightforward, but more mathematically cumbersome than is desirable here. *See* Charles R. Korsmo, Tailoring the Negligence Standard and a New Model of Injurer Skill 17 (July 20, 2013) (unpublished manuscript) (on file with author).

inefficient to impose liability for a frail elderly homeowner in the same circumstances.

For many common activities, however, the Standard Model does not fit at all, and in fact cannot be properly squared with either intuition or actual judicial practice. The failure of the literature to spell this out early and often is puzzling. Two contradictory possibilities suggest themselves. Either economists believe (erroneously) that the contingent nature of the Standard Model is obvious and not worth emphasizing, or they simply have overlooked the limited applicability of the Standard Model's assumptions.[104] Whatever the reason, an explanation of the limitations of the Standard Model has thus far been lacking. Furthermore, as will be shown below, even if some of the immediate consequences of an alternative model are relatively straightforward, others are not and certainly demand explication.

To grasp the limitations of the Standard Model, consider as an example the single most common tort-producing activity—driving an automobile.[105] How is a court faced with a car crash to assess the level of care exercised by the drivers? Is there any sensible way for a court to require a skilled driver to drive "better" than an unskilled driver? It is commonplace to observe that courts generally confine themselves to evaluating a party's *external* conduct, rather than his internal state of mind or intentions.[106] This is another sense in which the uniform

104. I will admit that I find the idea that these important consequences have simply been overlooked to be difficult to believe. I find it less incredible, however, when I see an eminent scholar like Daniel Rubinfeld state that "individuals with slower reflexes or concentration may be forced to drive more slowly than individuals with quicker reflexes" only pages before—without explaining or even noting the contradiction—he introduces a version of the Standard Model that implies precisely the opposite. *See supra* note 10.

105. Car accident cases are by far the most common type of negligence cases. In a 2001 survey of the 75 largest counties in the United States, car accident cases made up more than 53% of all tort cases that went to trial. *See* THOMAS H. COHEN & STEVEN K. SMITH, BUREAU OF JUSTICE STATISTICS, CIVIL TRIAL CASES AND VERDICTS IN LARGE COUNTIES, 2001, at 9 (2004), *available at* http://1.usa.gov/1cNWYDI. For comparison, the next two most common types of cases—premises liability and medical malpractice—constituted only 16% and 14.5% of trials, respectively. Similarly, an earlier study found that car accident cases represented 60.1% of tort cases in state courts in the nation's 75 largest counties. *See* STEVEN K. SMITH ET AL., BUREAU OF JUSTICE STATISTICS, TORT CASES IN LARGE COUNTIES 2 (1995), *available at* http://1.usa.gov/1hty3eh.

106. The greater part of Holmes's classic work, *The Common Law*, is dedicated to establishing and defending this proposition. *See, e.g.*, HOLMES, *supra* note 2, at 50 ("[W]hen we are dealing with that part of the law which aims more directly than any other at establishing standards of conduct, we should expect there more than elsewhere to find that the tests of liability are external, and independent of the degree of evil in the particular person's motives or intentions."); *id.* at 110 ("[I]t must be borne in mind that law only works within the sphere of the senses. If the external phenomena, the manifest acts and omissions, are such as it requires, it is wholly indifferent to the internal phenomena of conscience.").

reasonable person standard is "objective"—it is concerned with the external manifestations of care, rather than internal states of mind.[107] When applied to negligence, this means that courts confronted with an accident can rarely ask how "careful" a defendant was being in the abstract—or, even more abstractly, how "well" the defendant was performing the relevant activity. Instead, they must simply ask whether the defendant exhibited the requisite external manifestations of care.

What are the external manifestations of care that a court can and will consider? They are, of course, as various as the risky activities that give rise to tort claims in the first place. What are the indicia of care a court might consider in an automobile accident case? Among the most common driver-related factors contributing to car accidents are speeding,[108] distraction by eating or cell phone usage,[109] and drinking.[110] Yet any attempt to fit these extremely common, garden-variety factors into the Standard Model quickly runs into difficulty.

First of all, what would constitute the exercise of "more care" for each of these behaviors? With respect to speeding, under most circumstances, going slower would presumably constitute more care—in

107. GOLDBERG ET AL., *supra* note 43, at 168–69.

108. According to the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS), in 2009 excessive speed was a contributing factor in approximately 31% of *all* fatal automobile accidents—and necessarily a higher proportion of the subset of accidents that are due to driver negligence. *See* U.S. DEP'T OF TRANSP., NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., TRAFFIC SAFETY FACTS, 2009 DATA: SPEEDING 1 (2012), *available at* http://1.usa.gov/qNNzCx. Speeding is routinely cited as constituting negligence. *See, e.g.*, 8 AM. JUR. 2D *Automobiles* § 762 (2011) (collecting cases); 60A C.J.S. *Motor Vehicles* § 591 (2013) (collecting cases).

109. According to the same source, approximately 20% of all injury crashes in 2009 involved distracted driving, and 18% of fatalities from distracted driving crashes involved cell phone use. *See* U.S. DEP'T OF TRANSP., NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., TRAFFIC SAFETY FACTS, DISTRACTED DRIVING 2009, at 1, 3 (2010), *available at* http://1.usa.gov/a50NTE. Not surprisingly, eating, cell phone usage, and other distracting activities are often cited by courts as evidence of negligence. *See, e.g.*, DuPree v. Terry, 273 N.E.2d 630, 632 (Ill. App. Ct. 1971) (noting that eating while driving could be evidence of negligence); Lamb v. Franklin, 976 S.W.2d 339, 344 (Tex. App. 1998) (same); Jay M. Zitter, Annotation, *Civil Liability Arising from Use of Cell Phone While Driving*, 36 A.L.R.6th 443, § 5 (2008) (collecting negligence cases involving driving while on a cell phone). Other distractions, such as "rubbernecking" and "daydreaming," are often noted as factors in accidents, though they appear to be less common grounds of negligence liability, most likely due to problems of proof. *But see* Self v. Dye, 516 S.W.2d 397, 399 (Ark. 1974) (finding that evidence of driver's daydreaming constituted "substantial evidence of [driver]'s negligence").

110. According to FARS, in 2009, alcohol was a contributing factor in approximately 32% of all fatal automobile accidents. *See* U.S. DEP'T OF TRANSP., NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., TRAFFIC SAFETY FACTS, 2009 DATA: ALCOHOL-IMPAIRED DRIVING, 1 (2010), *available at* http://1.usa.gov/ghwLtK. Driving over the legal blood alcohol limit is frequently cited as negligence per se. *See* 60A C.J.S. *Motor Vehicles* § 544 (2013) (collecting cases). An elevated blood alcohol level, even when under the established legal limit, is also commonly cited as evidence of negligence. *Id.*

that it would increase the driver's ability to avoid hazards—and going faster would represent less care.[111] With respect to distraction, reducing distracting activities—for example, eating and talking on the phone less frequently—would constitute more care, while increasing these activities would constitute less care. With respect to drinking, decreasing one's blood alcohol content would constitute more care, while increasing alcohol consumption would constitute less care.

Recall that the Standard Model predicts that, but for the information costs of creating a tailored standard, it would be socially optimal, as an initial matter, to require the skilled to take more care, and the unskilled to take less care. When applied to these everyday straightforward indicia of care, however, this prediction quickly devolves into absurdity.

That this absurdity has previously escaped comment likely stems, at least in part, from the linguistic ambiguity of the term "standard of care." The term can refer to at least two things. First, as I have been using it, it could mean the *amount of care*—the actual discrete precautions—a potential injurer is required to take. Alternatively, it could refer to the overall *degree of safety* a potential injurer is required to achieve. These are, as will soon be clear, not necessarily equivalent.[112] It is, however, all too easy to slip back and forth between the two meanings and, in doing so, become confused. To take just one example, in a well-known paper, the respected law and economics scholar Daniel Rubinfeld notes that "individuals with slower reflexes or concentration may be forced to drive more slowly than individuals with quicker reflexes, thus adding to their travel time"[113]—a sensible conclusion.

Yet the model Rubinfeld introduces in the very same paper is a version of the Standard Model. And this model, which assumes that individual injurers differ such that the unskilled experience higher precaution costs, as discussed above, implies that the unskilled should actually take *less* precaution—the reverse of his example.[114] If one speaks in the abstract about "standards of care," however, the contradiction is surprisingly easy to miss. At first blush, it sounds perfectly reasonable to say that unskilled injurers should be held to a "lower" standard of care and skilled injurers a "higher" standard of care—after all, perhaps better drivers should be required to drive "better." If even a mathematically sophisticated writer like Rubinfeld

111. This is not always the case, of course. Slowing to 25 mph on a freeway where traffic is moving at 65 mph would certainly not reduce the risk of accident.

112. To give a simple example, even if a blind person drives a car extremely carefully, he is likely to pose a greater risk than a professional race-car driver speeding while talking on her cell phone.

113. Rubinfeld, *supra* note 10, at 377.

114. *Id.* at 384–87.

can become confused, the problem is far more acute for the rest of us. The difficulty is even worse when the discussion is kept, as it often is, primarily abstract and mathematical.

In addition to avoiding confusion, the discussion above suggests another reason to keep clear whether one is speaking of "standard of care" in the sense of degree of safety or amount of precaution. Courts and regulators can usually only observe the latter in deciding whether a given defendant should be held liable—it is far easier to determine, for example, how fast a driver was going than how "well" she was driving. Degrees of risk and marginal costs of care are generally hidden, while the level of care taken is more often observable. As a result, courts will generally consider the defendant's *actions*—the external manifestations of care—rather than the overall degree of safety when determining whether or not to impose liability.

Whether a driver has been negligent will almost always be decided by looking at the driver's discrete actions—speeding, eating, talking on a cell phone, and so on.[115] As a result, it is no use saying that a court should simply require a skilled driver to drive "better," or more safely. The court (often through use of a jury) must decide what actions the driver can and cannot take without exposing herself to liability. As a result, for practical purposes, it makes far more sense to discuss "higher" and "lower" standards of care in terms of the amount of precaution required, rather than the degree of safety to be achieved. Simply by following this convention, a great deal of difficulty can be avoided.

The failure to do so has led to great confusion and a missed opportunity for law and economics. The assumptions of the Standard Model actually suggest that unskilled drivers should be allowed to drive *faster* than skilled drivers. They suggest that unskilled drivers should be allowed to engage in more distractions than the skilled. It would suggest that unskilled drivers should be allowed to drive with a higher blood alcohol content than skilled drivers. Something is evidently amiss with the Standard Model, when translated into actual legal prescriptions.

To understand what is amiss, it is necessary to return to the fundamental assumption of the Standard Model—that skilled injurers experience a lower marginal cost of additional care. In short, the problem is that this assumption is unlikely to hold for many indicia of care actually considered by courts, including each of the types of care just considered. The cost to the driver of driving slowly,[116] for example,

115. *See supra* pp. 313–14.

116. In this discussion of "costs" to the driver of certain types of care, it is important to remember that it is the *net* costs that are important—that is, the costs of exercising care *minus* any benefits the driver might gain from taking additional care. If, for example, it costs a driver $1000 in lost time to drive more slowly to work each day for a year, but he

is primarily the opportunity cost of time—the extra time spent driving rather than in some other, more desirable way. There is no reason to think, though, that these opportunity costs would be systematically lower for skilled drivers than for unskilled drivers. Similarly, there is little reason to think skilled drivers would face systematically lower costs in avoiding distraction-causing activities like talking on the phone, eating, texting, or even just daydreaming.[117] It is likewise more than a little peculiar to think that skilled drivers would face systematically lower costs than unskilled drivers in refraining from driving drunk.

The difficulties with the Standard Model are typically concealed—or at least partially camouflaged—by the linguistic ambiguity of the term "care." As noted above, it is easy to misinterpret the Standard Model as simply suggesting that a tailored standard of care would require skilled drivers to drive "better"—to achieve greater safety, rather than take greater precaution. This, however, is not what the model actually says, not what the assumptions of the model actually imply, and not something that courts could do even if they so desired. The assumptions of the Standard Model unmistakably lead to the conclusion that skilled injurers should take *greater precaution*, which is not the same thing as saying that they should generate *less risk*.[118]

The absurdity of the basic predictions of the Standard Model has also been masked by the availability of other arguments for holding low-skill injurers to a higher standard of care. Shavell, for example, argues that for the especially "awkward or inept," the social costs generated by engaging in a given activity might outweigh the benefits, even where the person is taking the individually-optimal amount of care. For such dangers to society, he suggests that a very high standard of care may be preferable, in order to prevent them from engaging in certain activities in

saves $250 in gas and $250 in reduced expected injury to himself and his vehicle, then the actual "precaution costs" associated with driving more slowly are $1000 - $250 - $250 = $500.

117. It could be argued, though perhaps somewhat implausibly, that even if such precautions may not come at lower marginal *cost* to the skilled driver, they may create larger marginal *benefits* in terms of accidents avoided. The argument would be that going slower or paying more attention allows skilled drivers to avoid a great many potential accidents, but would not do much good for unskilled drivers because even if they were going slower or paying attention, they would still be so clumsy and incompetent that they would not be able to apprehend or avoid many accidents. *See infra* pp. 322–23. This argument strikes me as implausible, but even if it is accepted, it has quite different implications than the Conventional Model. This is because the lower marginal *costs* envisioned by the Conventional Model are entirely internalized by the potential injurer in deciding how much care to exercise, while higher marginal *benefits* are at least partially positive externalities from the point of view of potential injurers. *See infra* pp. 329–31 (discussing this distinction and its consequences further).

118. *See infra* Part V (elaborating this distinction).

the first place.[119] While this argument can reconcile the problematic predictions of the Standard Model with actual practice, it still proceeds from assumption that lower-skill injurers will always generate lower marginal gains from additional care—an assumption that I will argue in the next section is unrealistic. Correcting this mistaken assumption avoids the same ludicrous prescriptions in a more straightforward fashion, and generates new and superior insights at the same time.

Again, the foregoing should not be read to suggest that the assumptions of the Standard Model are never appropriate or that they never reflect reality. The very real insight at the root of the Standard Model is that skilled injurers should be able to achieve a given level of risk at lower cost than unskilled injurers. But there are two ways of reaching this result. The Standard Model reaches it through its assumption of lower marginal precaution costs, and this is a perfectly sensible assumption for many potential precautions. In fact, it is plausible often enough to make it easy to mistakenly believe that it is universal. A large manufacturer, for example, due to economies of scale, may have a lower marginal cost of instituting stricter safety inspections for its products than a small storefront operation. Similarly, a major rental car supplier may face lower marginal costs in maintaining its vehicles than individual car owners face. Or, as Shavell returns to repeatedly, a young, able-bodied person may find it quick and easy to clear a sidewalk of ice, while an elderly person would find it onerous.[120]

But for many—by no means peripheral or inconsequential—types of precautions, the assumptions of the Standard Model break down, yielding absurd results. For precautions that impose costs on injurers that do not systematically vary as a function of injurer skill, the Standard Model is simply inapplicable. A skeptic of law and economics thinking can be forgiven for looking at the typical economics presentation of the negligence standard, comparing it to actual practice, and coming away thinking that law and economics does not have much insight to offer about tort law as it is practiced in the real world. This would, however, be a mistake. The true lesson is that abstract results must be frequently translated into concrete predictions that can be tested for plausibility. When they fail the test, the assumptions must be reconsidered.

119. Shavell, *supra* note 23, at 159. Shavell notes:

> Even if the courts can observe injurers' type k, the optimal level of due care may not be $x^*(k)$ for all k; rather optimal due care might be $\underline{x} > x^*(k)$ for all k above some threshold k'. By setting such a due care standard, engaging in the activity may become too expensive to be worthwhile for high k types, thus implicitly combating the problem of excessive engagement in the activity for these most dangerous types.

Id.

120. *See* SHAVELL, *supra* note 8, at 74.

There is, fortunately, a second set of assumptions that yields the same result of equal risk at lower cost for skilled injurers. As developed in Parts V and VI, these assumptions regarding injurer skill are more readily applicable to such precautions, and both make sense of actual doctrine and lead to surprising new possibilities.

V. THE INVERSE MODEL OF INJURER CAPACITY

In this Part, the oft-ignored second way for skill to result in lower social costs—the "Inverse Model"—is introduced, which better accounts for the types of care actually considered by courts in many common accident scenarios. Recall that under the Standard Model, the difference between a skilled and unskilled injurer is that the skilled injurer experiences lower marginal precaution costs than the unskilled injurer, while all types of injurers generate the same absolute level of accident costs at a given level of care.[121] Under the Inverse Model, these assumptions are flipped—the difference between a skilled and unskilled injurer is that the skilled injurer generates a lower absolute level of accident costs at any given level of care, while all types of injurers experience the same costs of care.[122]

To put these assumptions in everyday terms, under the Inverse Model, it costs a skilled driver just as much as an unskilled driver to drive 55 mph instead of 65 mph, primarily in opportunity costs of time. At the same time, under the Inverse Model, the skilled driver would cause fewer expected accidents than the unskilled driver at a given rate of speed—that is, a skilled driver going 65 mph would cause fewer expected accidents than an unskilled driver going 65 mph.

A direct comparison to the Standard Model is helpful in understanding the Inverse Model and drawing out its implications. The only difference is the manner in which an individual's greater skill reduces social costs. Just as before, drivers will exercise some level of care, will impose losses on others from accidents, and will bear precaution costs. Just as before, there are two types of drivers: skilled and unskilled. This time, however, both skilled and unskilled drivers experience the same precaution costs at a given level of care, with the difference between skilled and unskilled being that skilled drivers generate lower expected accident costs at that given level of care.[123] The Inverse Model retains the other assumptions of the Standard Model.

121. *See supra* p. 305.

122. That is, $L' < 0 < L''$, and $P' > 0$; $P'' \geq 0$. *See supra* note 53. For activities like driving that also pose some risk to the injurer, the assumption of positive costs of care must eventually break down for many precautions.

123. For the Inverse Model, the following equations correspond to those in *supra* note 90 for the Conventional Model: $L_S(x) = SL_U(x)$, where (S < 1), and $P_S(x) = P_U(x)$.

That is, the Inverse Model retains an assumption of diminishing returns from additional care, and positive, non-decreasing costs of care. The results of the assumptions of the new model are displayed in Figure 3.

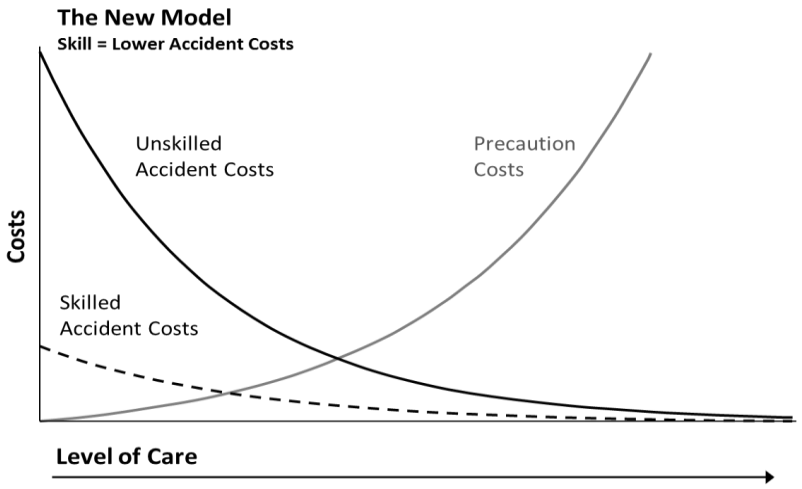

Figure 3. This graph shows the basic assumptions of the Inverse Model. Accident costs for unskilled injurers are represented by the solid black curve, while accident costs for skilled injurers are represented by the dashed black curve. Note that, in contrast to the Conventional Model, accident costs are lower for the skilled than the unskilled (the dashed black curve is always below the solid black curve), while precaution costs (the ascending gray curve) are unaffected by skill.

Again, I do not claim that the assumptions of the Inverse Model apply to all forms of precautions. As noted in Part IV, the Standard Model's assumptions are manifestly sensible and productive for many types of precautions, particularly those involving economies of scale or technological safeguards. Where the Standard Model's assumptions fail—and the Inverse Model is intended to succeed—is where greater size or skill does not generate economies of care; most prominently, where the principal cost of care is the cost of an individual's time or attention. By distinguishing between precautions where the Standard Model applies and those where the Inverse Model applies, we will be able to determine when a skilled injurer should be held to a higher standard and when he should be held to a lower standard.

The next Part discusses a potential method for determining which set of assumptions is more accurate for a given type of precaution. In general, however, it may be useful to keep in mind a distinction,

introduced by Mark Grady, between "durable" and "nondurable" precautions.[124] Under Grady's framework, a durable precaution is one that imposes an upfront precaution cost on the injurer, but then reduces accident losses over a relatively long period of time without generating additional precaution costs.[125] Installing new and improved brake pads would be a relatively durable precaution, as it would entail a single upfront expenditure, yet reduce expected accident costs over a period of days, weeks, or months. Conversely, a nondurable precaution is one that requires frequent or constant investment of precaution costs in order to remain effective.[126] Driving more slowly is a relatively nondurable precaution, as it entails a more or less continuous cost in lost time in order to reduce expected accident costs.

As a general—but by no means infallible—rule of thumb, we might expect durable precautions to be better represented by the Standard Model, and nondurable precautions to be better represented by the Inverse Model. A sophisticated manufacturer (or a skilled mechanic) may face lower costs in building (or installing) better brakes than would a technologically backwards manufacturer (or mechanically ignorant individual). Yet, there is no reason to think a skilled driver has a lower opportunity cost of time, and thus that it costs her any less than an unskilled driver to drive more slowly.

Indeed, one way to motivate the assumptions of the Inverse Model is by thinking of "skill" in some contexts as being a durable *substitute* for otherwise nondurable precautions, rather than as a factor that *reduces the cost* of durable and nondurable precautions alike. For example, the exceptionally quick reflexes or excellent situational awareness of a skilled driver can serve as a durable substitute for driving more slowly—an upfront investment in developing these skills prevents accidents that could otherwise be prevented only by incurring the continuous cost of driving more slowly. To the extent that courts ignore the costs of becoming skilled in performing the negligence analysis, we arrive at the assumptions of the Inverse Model—skilled injurers incur the same precaution costs for the precautions actually observed by courts, but generate lower accident costs at any given level of these precautions.

VI. IMPLICATIONS OF THE INVERSE MODEL

The Inverse Model allows us to make sense of departures from the uniform reasonable person standard—explaining why sometimes a

124. Mark F. Grady, *Why are People Negligent? Technology, Nondurable Precautions, and the Medical Malpractice Explosion*, 82 NW. U. L. REV. 293 (1988).
125. *Id.* at 310.
126. *Id.*

person with a physical disability or with professional training will be required to take more precaution, and sometimes will be permitted to take less precaution. The Inverse Model also sheds light on the feasibility and desirability of departures from a uniform reasonable person standard in general. This Part sets forth four major consequences of the Inverse Model of injurer capacity that differ from the Standard Model.[127] The first is relatively straightforward and intuitive. The remaining three consequences, however, are progressively more complex and less intuitive, revealing the value of economic thinking in uncovering surprising results. Most importantly, all four potentially offer practical guidance to courts and regulators in designing liability rules that take injurer skill into account.

A. Lower Standard of Care for Skilled Injurers

Recall that one of the basic results of the Standard Model is that skilled injurers would be required to exercise more care under an individually tailored standard of care.[128] By contrast, the most obvious implication of the Inverse Model is that an individually tailored standard of care would require skilled injurers to exercise *less* care than unskilled injurers.[129]

Consider again the activity of driving and a world with two types of drivers—unskilled drivers, who are relatively common, and skilled drivers, who are relatively rare. Under the Inverse Model, the social costs generated by an unskilled driver are simply the sum of the accident costs caused by the unskilled driver, plus the precaution costs experienced by the driver. Meanwhile, the social costs generated by a skilled driver are the sum of the accident costs (which are lower) and the precaution costs (which are the same) generated by a skilled driver, *plus* the costs, if any, of becoming skilled in the first place.[130] The social costs generated by an unskilled driver are unchanged from the Standard Model—the only change is in the assumptions regarding skilled

127. These differences fly in the face of Shavell's assurance that a model where injurers vary "in their cost of exercising care" would generate conclusions "similar" to those of a model where injurers vary in their "likelihood of causing harm." *See* Shavell, *supra* note 23, at 159.

128. *See supra* pp. 310–12.

129. Indeed, the evident absurdity of the Conventional Model's result when applied to common types of negligence like speeding and driving drunk is part of what motivates the assumptions of the Inverse Model.

130. Putting this into the form used in Part V, the social costs generated by driving are given by $\mathrm{SC}_U = L_U(x) + P_U(x)$ and $\mathrm{SC}_S = L_S(x) + P_S(x) + I = SL_U(x) + P_U(x) + I$, where SCU is the total social cost generated by an unskilled driver, SCS is the total social cost generated by a skilled driver, and I once again represents the cost, if any, an individual incurs in becoming skilled.

injurers—thus the optimal uniform standard of care is the same as that given by the Standard Model.

As shown in Figure 4, however, under the Inverse Model, the optimal level of care is less for skilled drivers than for unskilled drivers. This is so because the marginal benefit of additional care is actually lower for skilled drivers than for unskilled drivers—the marginal cost of additional care is the same, while the accident costs avoided are lower.[131]

To help see this, consider the following simplified example. Assume that the skilled driver, with her fast reflexes, can avoid a pedestrian if she has at least one second to react, while an ordinary driver requires two seconds to react. Assume each type of driver is driving 40 mph, or approximately 60 feet per second.[132] The skilled driver will hit any pedestrian who jumps out less than 60 feet from the front of her car, while the ordinary driver will hit any pedestrian who jumps out less than 120 feet ahead of her car. If the drivers slow to 30 mph, or approximately 45 feet per second,[133] the skilled driver will now hit any pedestrian who jumps out within 45 feet of her car, while the ordinary driver will hit any pedestrian who jumps out within 90 feet.

By slowing down from 40 mph to 30 mph, then, the ordinary driver decreases the "danger zone" in front of her car by 30 feet (from 120 feet to 90 feet), while the skilled driver only decreases her danger zone by 15 feet (from 60 feet to 45 feet). The same precaution thus avoids twice as many accidents for the ordinary driver as for the skilled driver. Facing similar opportunity costs of time, the marginal value of the precaution of slowing down is thus greater for the ordinary driver than for the skilled driver—precisely contrary to the usual assumptions. As a result of this smaller marginal reduction in social costs from additional care, a court seeking to tailor the standard of care so as to minimize the social costs generated by skilled drivers would impose a standard that is lower than the uniform reasonable person standard.

131. In mathematical terms, $\partial SC_S/\partial x < \partial SC_U/\partial x$.

132. 40 mph is actually 58-2/3 feet per second, but I am rounding for the sake of simplicity.

133. 30 mph actually equals 44 feet per second.

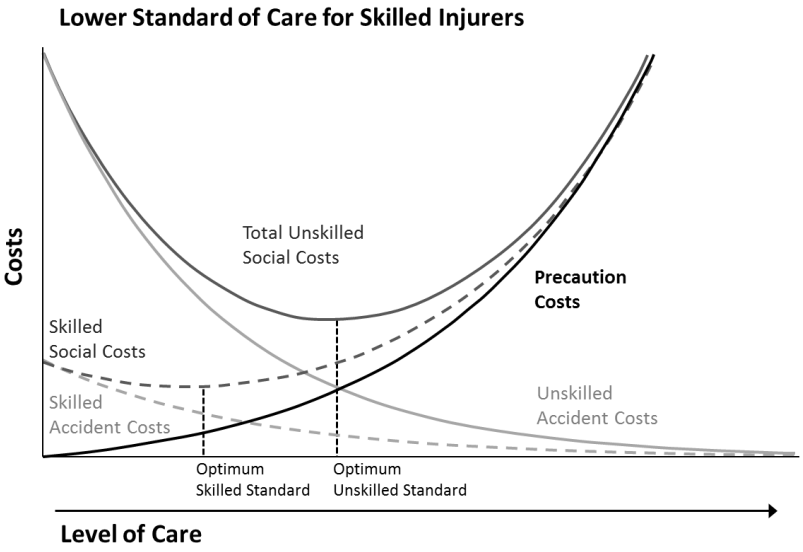

Figure 4. This graph demonstrates how skill affects the optimum level of care under the Inverse Model. Note that, contrary to the Standard Model, the level of care that minimizes social costs for the skilled injurer is lower (further to the left) than the level of care that minimizes social costs for the unskilled injurer. Note also that this graph ignores any cost of becoming skilled.

This result, unlike the result of the Standard Model, conforms to common sense for the examples considered above. To continue with the example of "driving more slowly," the Inverse Model implies that more skillful drivers should be allowed to drive faster than unskilled drivers—that, to use arbitrary numbers, a highly skilled driver should be allowed to drive 75 mph before being found negligent, where unskilled drivers would be negligent for exceeding 65 mph. As such, the Inverse Model captures the logic of many licensing requirements in a way the Standard Model does not. In general, licensing requirements permit individuals who are able to demonstrate a high degree of skill or training to do certain things—ranging from driving a semi-truck to scuba diving to performing a tracheotomy—that would be too risky for the unskilled and untrained to undertake. In doing so, licenses allow the skilled to forgo perhaps the most common and effective type of precaution of all: the precaution of not undertaking the relevant risky activity in the first place.[134]

134. As Landes and Posner put it, "the fact that a person may be incapable of a high level of care proves not that he cannot avoid an accident at reasonable cost but only that he cannot avoid it by being more careful. He may be able to avoid it by abandoning or

This discussion makes clear why it can be misleading to refer to the "reasonable blind person" standard as always constituting a lower standard of care—for many types of precautions, a blind person is, and from an economic perspective ought to be, held to a higher standard. In fact, it is only by ignoring the precaution costs of reduced activity levels that the Standard Model's prediction of a lower standard of care for the unskilled attains its surface plausibility for many scenarios. It may be true that a reasonable blind person is not required to apprehend or avoid dangers a reasonable person might be expected to avoid.[135] But it is also true that a reasonable blind person is required to incur extraordinary precaution costs by avoiding numerous common activities in which a reasonable person might freely engage, or by engaging in them only with extraordinary care. A reasonable blind person would not drive a car at all, even at the slowest speed or with the utmost care.[136] A reasonable blind person does not go jogging beside a busy street, or go bear hunting, or even walk over unfamiliar terrain without a cane or some other aid.[137]

That the precaution costs of reduced activity levels are often ignored may be because, following Shavell, the conventional wisdom has been that while, theoretically, an optimal negligence standard *should* consider activity levels, for various practical reasons the actual negligence standard does not.[138] In cases involving disabilities and professional skill, however, the negligence standard may not be as blind to activity levels as is typically assumed. In these contexts, the optimal activity level for the defendant may quite obviously be either zero or near zero. When the precaution costs associated with reduced activity levels are considered, it is evident that the blind or otherwise disabled are very frequently required to exercise far *greater* care—as predicted by the Inverse Model—rather than the superficially lesser care predicted by the

reducing the activity that produces the accident." LANDES & POSNER, *supra* note 19, at 126. The classic work describing the relationship between care and activity levels is Steven Shavell, *Strict Liability Versus Negligence*, 9 J. LEGAL STUD. 1 (1980).

135. *See* RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 11 cmt. b (2005) ("[Disability] can advantage the actor by establishing that the actor neither knew nor should have known of dangers that would have been known by others. The blind person, for example, is unable to see dangers that would be readily observed by others.").

136. *See id.* ("If, for example, an actor's vision is sufficiently impaired, it is negligent for that person to drive a car.").

137. As the Restatement notes, "[p]hysical disability can both advantage and disadvantage actors at trial as the possible negligence of their past conduct is considered. . . . [D]epending on the circumstances, a blind actor may be found negligent for walking over [unfamiliar] terrain without a cane or some other form of assistance." *Id. See also* SHAVELL, *supra* note 8, at 76 ("A nearly blind person, a child, or a mental incompetent would probably be held responsible for causing an automobile accident, even if such a person drove with all the care of which he was capable. . . .").

138. *See* Shavell, *supra* note 134, at 22–23.

Standard Model. Many older court decisions—perhaps unmuddled by modern torts scholarship—straightforwardly acknowledge that the disabled are obliged to exercise extraordinary care.[139] Many casebooks—particularly those that largely eschew an economic approach to tort law—also note the possibility that the disabled may sometimes be required to take greater precaution.[140]

This discussion also makes clear why it is similarly misleading to state that a doctor or other licensed professional, in being held to the standard of a reasonable professional, is being held to a "higher" standard of care.[141] A court will, of course, instruct a jury in a medical malpractice case to compare the defendant's conduct of, say, an appendectomy, to that of a "reasonable physician," and a reasonable physician can undoubtedly be expected to perform an appendectomy more ably than a "reasonable person." But this does not mean that a skilled professional is being held to a higher standard than that to which an unskilled layperson would be held. A layperson would almost certainly face negligence liability—and likely criminal liability—for attempting an appendectomy at all, except under the direst of emergencies. Again, the optimal activity level for a layperson performing appendectomies is going to be near zero. The same goes for other "professional" conduct, such as filling a prescription or providing

139. *See, e.g.*, Fenneman v. Holden, 22 A. 1049, 1050 (Md. 1891) ("It is text-book law, and fully sustained by decisions of high repute, that an infirmity in any of the senses makes it necessary for a person to be more vigilant and cautious in the use of his other senses."); Keith v. Worcester & B. V. St. Ry. Co., 82 N.E. 680, 681 (Mass. 1907) ("But it is also correct to say that in the exercise of common prudence one of defective eyesight must usually as a matter of general knowledge take more care and employ keener watchfulness in walking upon the streets. . . ."), *cited with approval in* Poyner v. Loftus, 694 A.2d 69, 71–72 (D.C. 1997); Winn v. City of Lowell, 83 Mass. (1 Allen) 177, 180 (1861) ("[C]ommon prudence required of [a person of poor sight] greater care in walking upon the streets, and avoiding obstructions, than is required of persons of good sight.").

140. *See supra* note 9 (collecting citations).

141. Such statements are routine. *See, e.g.*, JANE E. LEHMAN, 14 GEORGIA JURISPRUDENCE: PERSONAL INJURY AND TORTS § 36:31 (2013) ("[M]edical professionals are held to a higher standard of care than ordinary negligence."); Meredith J. Duncan, *Legal Malpractice By Any Other Name: Why a Breach of Fiduciary Duty Claim Does Not Smell as Sweet*, 34 WAKE FOREST L. REV. 1137, 1141 (1999) ("A cause of action for professional negligence differs from the typical negligence action in that a professional is held to a higher standard of care than is an ordinary member of society."); Steven A. Ramirez, *The Professional Obligations of Securities Brokers Under Federal Law: An Antidote for Bubbles?*, 70 U. CIN. L. REV. 527, 556–57 (2002) ("Courts have imposed higher standards upon professionals. . . ."); Edward G. Durney, Comment, *The Warranty of Merchantability and Computer Software Contracts: A Square Peg Won't Fit in a Round Hole*, 59 WASH. L. REV. 511, 527 (1984) ("Skilled and highly trained people are subject to a higher standard than the lay 'reasonable person.'"); Lauren Fleischer, Note, *From Pill-Counting to Patient Care: Pharmacists' Standard of Care in Negligence Law*, 68 FORDHAM L. REV. 165, 186–87 (1999) ("[P]harmacists, as professionals, must be held to a higher standard of care than defendants in ordinary negligence actions.").

legal services.[142] The illusion that skilled professionals are held to a "higher" standard of care for a given activity is maintained only by ignoring the requirement that unskilled laypeople avoid the professional activity altogether.

Thus, the Inverse Model's prediction that the unusually skilled will be allowed to exercise less care—including undertaking riskier activities—while the unusually unskilled will be required to exercise more care—including avoiding risky activities—captures and explains an aspect of the logic of licensing requirements and tort doctrine that the Standard Model does not.

B. Skilled Injurers Will Choose Not to Satisfy a Uniform Standard

Providing a coherent explanation of why existing doctrine is sensible is certainly a good thing, and reason enough to linger on a topic that has previously been treated only in passing. Further examination, however, reveals that the Inverse Model also identifies new problems, and suggests new solutions. The persistent failure heretofore to subject it to scrutiny has resulted not only in miscommunication and misunderstanding, but also missed opportunities for new insight. The next three subsections provide a sketch of a few of these insights.

As discussed in Parts II and III, under the Standard Model, an unusually unskilled injurer faced with a uniform reasonable person standard will find it too costly to bring his conduct up to the uniform standard. Low-skill injurers will instead choose to exercise a lower level of care that is individually optimal, and face de facto strict liability as a result.[143] Conversely, a skilled injurer will conform to the uniform standard, rather than to the higher level of care that would be optimal for the skilled injurer, thus leading to social inefficiency.[144]

The second major implication of the Inverse Model is that where its assumptions apply, the Standard Model gets it exactly backwards. Where the Inverse Model applies, it is unskilled injurers who have higher individually optimal standards of care, and skilled injurers who have lower individually optimal standards. As a result, the "pocket" of strict liability created by a uniform standard exists for unusually *skilled* injurers, who will find it excessively costly to conform to a uniform reasonable person standard. Because the skilled injurer's individually optimal standard of care is less than the uniform standard, raising his

142. Indeed, the unauthorized practice of law is a criminal offense in most states. *See State Definitions of the Practice of Law*, A.B.A., http://bit.ly/vKszcG (last visited Oct. 21, 2013).

143. *See supra* p. 311.

144. *See supra* pp. 297–99.

level of care from the individually optimal level to the uniform standard would cost more in precaution costs than the liability it would avoid.[145] Again, this is actually a socially efficient result insofar as the skilled injurer would be remaining at the individually optimal level of care.[146]

Conversely, where the Inverse Model applies, it will be the unusually *un*skilled for whom the individually optimal standard of care is greater than the uniform reasonable person standard. As a result, the particularly unskilled will find it in their interest to only exercise care at the level of the uniform reasonable person standard, because this is sufficient to relieve them of all liability. Any additional care would cost the injurer in precaution costs without relieving him of any losses he would otherwise bear.[147] As before, this will result in some individuals exercising less care than would be individually optimal, leading to injuries that would better be avoided.

To put it in everyday terms, the Standard Model would predict that highly skilled drivers—those with quick reflexes, acute vision, and excellent situational awareness—would generally drive the speed limit, while extremely low-skill drivers—those with slow reflexes, failing vision, and low situational awareness—would routinely (and rationally) speed.[148] The Inverse Model would predict the opposite—skilled drivers should routinely and rationally speed, while low-skill drivers should generally obey speed limits.[149]

145. *See supra* pp. 298–99 (showing that any time an injurer's individually optimal standard of care is less than the uniform reasonable person standard, the injurer will choose not to conform to the uniform standard).

146. *See supra* pp. 298–99.

147. *See supra* p. 299.

148. Note that "skilled drivers" is being used in a specific sense, and in this context is not synonymous with "drivers who cause fewer accidents." It means drivers who cause fewer accidents at a given level of precaution. A skilled driver who routinely drives 100 mph—or drunk—may cause more accidents than an unskilled driver who never exceeds 55 mph. Thus, even if it were the case that 20 year olds had a higher accident rate than 65 year olds, that would not necessarily imply that 20 year olds are less "skilled" at driving than 65 year olds, in the sense the term is being used here. Indeed, one prediction of the new model is that as injurers become more skilled, they will, all else being equal, tend to reduce their level of precaution, causing injuries at a higher rate than the Conventional Model would suggest.

149. There is some anecdotal evidence to suggest that this is the case, though I am unaware of any rigorous research on this score. Certainly professional racecar drivers—who would have to be considered highly skilled—are known for some fairly spectacular violations of the traffic laws. *See, e.g.*, Jonathan Welsh, *Nascar Driver Busch Gets Ticket For 128 MPH*, WALL ST. J.: DRIVER'S SEAT (May 25, 2011, 3:40 PM), http://on.wsj.com/1isZ2YW; Don Coble, *Speeding Off the Track Not the Ticket for NASCAR Drivers*, SAVANNAH MORNING NEWS, Aug. 21, 1999. Similarly, the cliché of a "Sunday driver"—punctilious to a fault in following traffic regulations—is generally an elderly Mr. Magoo, with senses and reflexes that have dulled with the passing of the years. *See, e.g.*, XUEHAO CHU, CTR. FOR URBAN TRANSP. RESEARCH, UNIV. OF S. FLA., THE EFFECTS OF AGE ON THE DRIVING HABITS OF THE ELDERLY: EVIDENCE FROM THE 1990

Beyond the interest this result holds in its own right, this prediction suggests a potential method for discriminating between precautions for which the Standard Model is appropriate and those for which the Inverse Model is preferable. Where the unusually *un*skilled are more likely to systematically and rationally violate an applicable uniform standard of care, the Conventional Model is superior. Where the unusually *skilled* are more likely to systematically fail to live up to an applicable uniform standard of care, the Inverse Model offers a better description of reality. By this method, policymakers can potentially determine—where it would not otherwise be obvious—which way standards should be adjusted for the unusually skilled and the unusually unskilled.

C. Uniform Negligence Standards May Stunt Innovation

The third major implication of the Inverse Model is that a failure to individually tailor the negligence standard can lead to underinvestment in developing greater skill.

As noted in Part II, the economists Endres and Friehe have defended the uniform reasonable person standard on the grounds that while it sacrifices some degree of static efficiency by failing to tailor the standard of care to individual capabilities, it may achieve dynamic efficiency in the process.[150] This conclusion is rather comforting. The traditional "information costs" explanation of the uniform reasonable person standard acknowledges that a uniform standard is socially inefficient, but treats it as a necessary evil because of the difficulty of assessing individual skill. The Endres and Friehe explanation suggests that even if courts could assess individual skill, a uniform negligence standard would still be preferable under some circumstances. Where

NATIONAL PERSONAL TRANSPORTATION STUDY (Oct. 1994), *available at* http://1.usa.gov/1bdtQD2 (finding both that the elderly "drive at lower speeds"—an average of 24% slower than middle-aged and 31% slower than young drivers—yet still "show a higher risk of crash and injury"); Shani Bromberg, et al., *The Perception of Pedestrians from the Perspective of Elderly Experienced and Experienced Drivers*, 44 ACCIDENT ANALYSIS & PREVENTION 48, 48 (2012) (finding that elderly drivers partially compensate for reduced reaction times by driving 20% slower than other experienced drivers). Of course, with rare exception, speed limits are set by statute, rather than by courts establishing a reasonable person standard. The multitude of studies showing that speed limits are almost universally disregarded would suggest that these limits are set below the optimal level for all but the very worst of drivers. A typical study by the Department of Transportation found that "lowering speed limits by as much as 20 mi/h (32 km/h), or raising speed limits by as much as 16 mi/h (24 km/h) had little effect on motorist speed." U.S. DEP'T OF TRANSP. FED. HIGHWAY ADMIN., EFFECTS OF RAISING AND LOWERING SPEED LIMITS (Oct. 1992). The same study notes that "[f]or years, traffic engineering texts have supported the conclusion that motorists ignore unreasonable speed limits." *Id.*

150. *See supra* pp. 304–05.

injurer capacity is plastic, the threat of a higher, individually tailored standard for highly skilled individuals—as prescribed by the Standard Model—will provide injurers with an incentive to remain unskilled.

Where the Inverse Model applies, the situation is reversed. Tailoring the standard of care would involve *lowering* the level of care required of skilled injurers, allowing the injurer to capture more of the benefits of developing greater skill. Thus, it is the use of a uniform negligence standard—the *failure* to tailor the standard of care—that may stifle innovation and skill-development by denying one who develops greater skill from sharing in the benefits of that skill.

This result can be demonstrated mathematically[151] but, as before, it can also be understood intuitively. Increasing one's level of skill by, for example, becoming a better driver, generates positive externalities—benefits that are not captured by the individual driver. The skilled driver inflicts fewer accident costs on the rest of society, in addition to any benefit to the driver himself. The larger these positive externalities are, the greater the underinvestment in developing skill. A tailored negligence standard would relax the standard of care faced by the skilled driver, thus allowing the skilled driver to internalize more of the benefits of becoming skilled. As a result, the degree of underinvestment in skill is reduced, as compared to a uniform negligence standard. The suggestion that the uniform reasonable person standard might achieve better results, even in the absence of information costs, no longer holds where the Inverse Model applies.

The Inverse Model therefore implies that a tailored negligence standard would be, at least for some types of precautions, an unalloyed good that should be pursued wherever information costs are not prohibitive. Furthermore, it may be the case that the information costs associated with imposing a tailored standard are not so great when the Inverse Model is applicable. Where the Standard Model applies, unusually low-skill injurers would benefit from a lower standard of care. This creates a concern that defendants, like Menlove, might "sandbag" or "play dumb" in an attempt to escape liability. Where the Inverse Model applies, however, it is the unusually high-skill injurer who would benefit from a lower standard of care. A defendant seeking to escape liability, therefore, would have an incentive to fake unusually high skill. In practice, however, this will almost always be far more difficult than faking incapacity. It is difficult to tell whether a person is pretending to be worse at an activity than he actually is. It is far easier to expose a person pretending to be better at an activity than he is in actuality. This phenomenon suggests that, for many types of precautions, tailored

151. *See* Korsmo, *supra* note 103, at 27–28.

negligence standards may be more feasible than has traditionally been thought.[152]

D. "Over-Tailoring" as an Efficient Subsidy to Skill Development

The fourth major implication of the Inverse Model is the least intuitive, and the one where abstract mathematics would most aid in comprehension. Nonetheless, the general result can be grasped without formal mathematics, and in the spirit of the overall endeavor, I will leave the equations aside.[153] The Inverse Model predicts that situations can exist where "over-tailoring" the standard of care—allowing individuals who develop skills to utilize *less* care than would appear to be individually optimal—can produce social gains. This result, which is not possible under the Inverse Model, suggests a novel method of subsidizing innovation and skill-development, avoiding some of the inefficiencies associated with more traditional methods.

The first step to understanding this result is to see that there are circumstances where it would be socially desirable for a potential injurer to invest in becoming skilled, but where even a tailored negligence standard would provide insufficient incentive for the injurer to do so. Under these circumstances, an injurer will choose to remain unskilled under a tailored negligence standard, even where it would be socially efficient for her to become skilled. That is, a tailored standard reduces, but does not eliminate, the positive externalities associated with developing additional skill, and thus reduces, but does not eliminate, the problem of underinvestment in skill.

Under some circumstances, however, it is possible—to borrow the language of Endres and Friehe—to trade static for dynamic efficiency, producing lower overall social costs by holding skilled injurers to a standard of care *lower* than the level that would be optimal for skilled injurers in a purely static world. To find these circumstances, we must determine when the following four conditions are met: (i) the total social costs generated by a skilled injurer taking an "over-tailored" level of care are less than the minimum social costs generated by an unskilled injurer; (ii) this "over-tailored" level of care is less than the level that would be individually optimal for skilled injurers in a purely static world; (iii) the

152. This is not to say that it would never be in the interests of a defendant to pretend to be unskilled under a tailored standard. In the example given *supra* of a pedestrian jumping in front of a car, feigning low skill could conceivably get the driver off the hook, not on the grounds that she was not negligent, but rather on the grounds that the negligence was not causative. *See supra* p. 323.

153. The results outlined below can be shown mathematically, though the degree of tedium is more considerable than for the other results in this Article. *See* Korsmo, *supra* note 103, at 30.

injurer would choose not to become skilled if held to the standard that is individually optimal in a purely static world; and (iv) the injurer *would* choose to become skilled if held to the lower, "over-tailored" standard. If these four conditions can be met simultaneously, it would be possible to set an "over-tailored" standard for skilled injurers that, while sub-optimal in a purely static world, leads to lower overall social costs in a world where injurers can invest in skill.

To give a concrete driving example, assume again that the precaution under consideration is moderating one's driving speed. Assume further that the optimal cruising speed for unskilled drivers—the uniform reasonable person standard—is 55 mph, and the optimal cruising speed for skilled drivers is 65 mph. In this case, becoming "skilled" can mean anything from developing better hand-eye coordination to gaining better situational awareness by taking defensive driving classes to developing computer and sensory technology to automatically avoid accidents. Assume, however, that the benefit to a given driver from being allowed to drive 65 mph is not enough to offset the cost of becoming skilled, so that the driver would prefer to simply remain unskilled and drive 55 mph like everyone else. The question posed is whether, under certain circumstances, allowing the skilled driver to go *even faster* than is optimal—say, 70 mph—can be sufficient to induce the driver to become skilled, while still resulting in lower total social costs than the alternative of the driver remaining unskilled and driving 55 mph?

Where the Standard Model applies, "over-tailoring" is never a possibility, because the benefits of becoming skilled—lower precaution costs—are already internalized by the injurer. Under the Inverse Model, however, the benefits of becoming skilled—reduced accident costs—are at least partially externalities from the injurer's viewpoint. That is, some of the benefits of a person becoming a better driver are captured by people other than the driver—pedestrians and other drivers who face less risk than they would from an unskilled driver. As a result of this externality, "over-tailoring" is a possibility. It is possible to achieve reduced total social costs by lowering the applicable standard of care for skilled injurers *below* the level that would be optimal in a static world—in effect "over-tailoring" the standard of care—in order to induce injurers to become skilled.

One might wonder what the purpose of this "over-tailoring" might be, given the practical difficulty—likely formidable—of calculating an appropriate "over-tailored" standard of care, and the apparent ease with which the same positive effects could be achieved by simply providing a direct subsidy for investment in skill. The answer is that over-tailoring might be preferable where different injurers have different costs of

becoming skilled, and it is difficult or impossible for courts or regulators to determine these costs for any given injurer, at least in advance.[154] For injurers with sufficiently high cost of becoming skilled, investment in skill is not worthwhile—the costs of becoming skilled exceed the benefits.[155] If the cost of becoming skilled cannot be observed, however, it is impossible to know who should be eligible to receive a subsidy and who should not. In such a situation, subsidies would have to be made available indiscriminately—with much attendant waste—or not at all.

A "subsidy" provided via over-tailoring could be held out to the world at large with less risk of wasteful consequences. If the injurer can prove that she is skilled, she can be provided with the lower, over-tailored standard of care. If she cannot, she is held to the unskilled standard. Such a "subsidy" costs society nothing unless it has already achieved its desired effect of inducing the injurer to successfully develop and demonstrate the requisite skill. With over-tailoring, it is the individual injurer who bears the risk of making a bad investment in skill, either because the investment costs her more than the liability she avoids, or because it fails to result in the intended skill. As a result, injurers will self-select. To the extent individual injurers are better than courts or regulators at estimating their individual cost of becoming skilled, over-tailoring will result in less wasteful investment than would an outright subsidy.

Thus, where courts and regulators are able to estimate injurer skill, but are unable to determine individual costs of becoming skilled, over-tailoring may offer an attractive alternative to subsidies.[156]

154. *See* Endres & Friehe, *supra* note 60, at 6 n.8 (noting that "it is usually the case that innovations cannot be accurately predicted by an outsider such as a policy maker" (citing Robert Cooter, *Innovation, Information, and the Poverty of Nations*, 33 FLA. ST. U. L. REV. 373 (2005); Adam B. Jaffe et al., *Environmental Policy and Technological Change*, 22 ENVTL. & RESOURCE ECON. 41 (2002))).

155. If the cost of becoming skilled is large enough, total social costs generated by skilled injurers will always exceed those generated by unskilled injurers, no matter what the applicable standard of care. Assuming that a given investment produces different gains in skill in different individuals creates the same problem.

156. As noted *supra*, this result is not possible under the Standard Model. Under the Standard Model, tailoring the standard of care means requiring *more* care of skilled injurers, which, as Endres and Friehe show, provides disincentives to becoming skilled. Where the Standard Model applies, reducing the standard of care for skilled injurers—reverse-tailoring, in effect—is always either unnecessary to get injurers to choose to be skilled, or results in greater social costs than the uniform reasonable person standard.

This result can be shown mathematically, but one way of understanding it intuitively is to realize that, under the Standard Model, the benefits of becoming skilled—the reduced costs of care—are already internalized by the injurer. It is only by tailoring the negligence standard that externalities would be created, causing inefficient investment in skill. Under the Inverse Model, the benefits of becoming skilled—the reduction in accident costs—are initially externalities, and it is only by tailoring the negligence standard that the injurer is allowed to internalize some of these benefits.

VII. CONCLUSION

An economic model is only useful when applied to circumstances where its underlying assumptions are valid. For a wide variety of precautions, however, the standard simplification in the law and economics literature regarding injurer capacity—that greater skill always corresponds with a lower marginal cost of care, rather than a lower cost of accidents at a given level of care—is misleading and often simply wrong. While these assumptions may be applicable for many durable or technological precautions, or where economies of scale are present, they are far from universal. For many of the precautions courts commonly consider in determining injurer negligence, there is little reason to suspect that precaution costs vary systematically by skill level. Precaution costs are particularly unlikely to be closely correlated to skill level for nondurable precautions taken by individuals, where the major costs involved are opportunity costs of time or attention.

The Standard Model being incomplete, the conclusions to be drawn from it are likewise misleading. The Standard Model's assumptions lead to the conclusion that particularly unskilled injurers should always be permitted to exercise less care than particularly skilled injurers while still avoiding liability. Because the term "standard of care" is ambiguous, this conclusion has at least superficial plausibility in the context of the well-known departures from a uniform reasonable person standard. Individuals with discrete physical disabilities are ostensibly held to a "lower" standard of care, while professionals acting in their professional capacity are ostensibly held to a "higher" standard. This plausibility evaporates, however, when reducing activity levels is recognized as a form of precaution. A blind person is not simply required to drive carefully, but is required to exercise the rather extraordinary precaution of not driving at all. A doctor may commit malpractice by not performing surgery to a professional level of skill, but a layperson will be negligent—or worse—for performing surgery at all.

When applied to the types of precautions routinely considered by courts, these standard descriptions of tort doctrine lose even surface plausibility. They would suggest, for example, that under a given set of circumstances, unskilled drivers should be allowed to drive faster, pay less attention, and drink more than skilled drivers. It might be argued that all the Standard Model really suggests is that skilled drivers should be required to "drive better," but this is not the case. Even if it were possible for a court faced with an accident to determine how "well" a driver was driving, the assumptions used in the Standard Model lead to a prescription of more *precaution* by skilled injurers, not simply fewer accident costs. Other predictions rooted in the assumptions of the

Standard Model—including the predictions that high-skill injurers will conform to a uniform negligence standard while low-skill injurers will be faced with a "pocket" of strict liability, and that a uniform standard will protect incentives for innovation and skill development—are less obviously dubious, but are similarly called into question by the limited applicability of the underlying assumptions.

A different set of assumptions regarding injurer capacity—what I have dubbed the Inverse Model—is equally consistent with the underlying model of social costs of accidents, but offers a more plausible interpretation for the contexts where the Standard Model fails. Instead of assuming that more skilled injurers reduce social costs by having a lower marginal cost of care, the Inverse Model assumes that skilled injurers create lower accident costs at a given level of care. Under the Inverse Model, a skilled driver driving 65 mph can be expected to cause fewer accidents than an unskilled driver driving 65 mph, all else being equal. This assumption leads to the prediction that low-skill injurers will have a higher optimal level of care than high-skill injurers for some precautions, and that particularly skilled injurers should be permitted to exercise less care with regard to those precautions (and, what is the same thing, exhibit a higher activity level) while still avoiding liability.

With these considerations in mind, we can now answer many of the questions posed at the outset. What does it even mean to hold someone to a "lower" or "higher" standard? If it is to serve as a meaningful description of judicial practice, "lower" and "higher" standards should refer to the amount of precaution required of the actor, not the degree of safety to be achieved. A physically disabled individual may be required to exercise greater precaution, and yet still create more risk of accidents than an able-bodied individual. Similarly, the law might require a professional to achieve a higher degree of safety or quality, while simultaneously allowing her to take less of certain precautions.

Might the same individual be required to take more of some precautions and less of others? Yes, absolutely. For some precautions—perhaps durable precautions—an individual will have a lower-than-average cost of taking additional care, while for other precautions—perhaps non-durable precautions—the same individual will not have a lower-than-average cost of taking additional care, but will cause fewer accidents at a given level of care. As a result, the same individual should be held to a higher standard for the first type of precaution, and a lower standard for the second. In general, an individual should be required to take more of a given precaution than average when that individual's taking additional precaution generates a larger-than-average marginal reduction in social costs. Conversely, an individual should be required to take less of a given precaution when that individual's taking additional

precaution generates a smaller-than-average marginal reduction in social costs.

This prescription, unlike the one-way prescription generally offered in the law and economics literature, comports with both common sense and existing legal doctrine. Courts and regulatory law do not *always* hold the physically disabled to a lower standard—they often require them to take extraordinary precautions, often in the form of drastically reduced activity levels. Likewise, high-skill individuals like professionals are not *always* required to exercise greater precaution—they are often permitted to exercise reduced care, often in the form of heightened levels of the risky activity in question. Similarly, risk-regulating licensing regimes often allow individuals who can demonstrate a certain level of skill to undertake activities that would otherwise be considered negligent or criminal.

In addition to correcting the main prescription of the Standard Model, the Inverse Model suggests several other avenues of inquiry. First and foremost, further work—some of it likely empirical—remains to determine which precautions are best described by the Inverse Model and which by the Standard Model. This Article suggests that one subtle way of making such a determination is to examine whether the use of a uniform reasonable person standard is creating a "pocket" of strict liability for the unusually skilled or for the unusually unskilled. Where the unusually skilled systematically choose to violate an applicable uniform standard of care for a certain precaution, the Inverse Model is likely to provide a good fit. A more comprehensive treatment would allow courts to be more consistent and accurate in holding individuals to higher or lower standards where appropriate.

Further work is also necessary to investigate possibilities for tailoring the negligence standard and designing more efficient licensing regimes. The analysis presented here suggests that tailoring the negligence standard will often be beneficial. Where the Inverse Model applies, tailoring the required standard of care would generate superior incentives for technological innovation and development of skill, in addition to superior incentives for the exercise of care. Where this is the case, the analysis also suggests that information costs may not be as formidable a barrier to negligence tailoring as is traditionally believed, as unscrupulous parties seeking to avoid liability would be required to feign *high* capacity rather than *low* capacity—a much more difficult proposition.

The ideas developed here might also be usefully applied to legal questions entirely outside the realm of tort law. To take just one example, compliance with the duty of care in corporate law—at least in Delaware—is largely evaluated in procedural terms, i.e., did the board

employ a thorough procedure? Just as courts in torts cases are generally restricted to evaluating the external manifestations of care, so too the Delaware Court of Chancery generally restricts itself to evaluating the procedural manifestations of care.[157] Perhaps the Inverse Model would provide useful insights into the desirability and feasibility of different standards for experienced and inexperienced boards. Similarly, securities law often allows sophisticated parties—such as accredited investors—to take risks that are forbidden to the less sophisticated. Other examples abound, ranging from environmental regulation to workplace safety, of topics that could be examined in light of the Inverse Model.

Perhaps most unusually, additional inquiry may profitably identify circumstances where "over-tailoring" the standard of care might generate efficiency gains, serving as a superior form of subsidy for skill and innovation. The Inverse Model suggests that this is most likely to occur where the cost of measuring an injurer's skill level is low, but where injurers are better able than regulators to estimate their cost of attaining that level of skill. Tailoring standards of care—and especially "over-tailoring" them—would involve greater administrative difficulties for courts and regulators, but could potentially yield significant societal benefits.

More generally, the analysis here highlights the difficulties that can arise from over-abstraction in the law and economics literature. A failure to consistently translate mathematical results into tangible doctrinal prescriptions has led to decades of confusion over a topic that need not be baffling. Even worse, it blinded economists from pursuing the important consequences of the Inverse Model explored above.

157. *See* Stephen J. Lubben & Alana Darnell, *Delaware's Duty of Care*, 31 DEL. J. CORP. L. 589, 593 (2006) (noting that the notion that the duty of care is a purely procedural matter "is often expressed in recent Delaware decisions").