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## Calculating Compensation Sums for Private Law Wrongs: Underlying Imprecisions, Necessary Questions, and Toward a Plausible Account of Damages for Lost Years of Life

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**CALCULATING COMPENSATION SUMS FOR PRIVATE LAW  
WRONGS: UNDERLYING IMPRECISIONS, NECESSARY  
QUESTIONS, AND TOWARD A PLAUSIBLE ACCOUNT OF  
DAMAGES FOR LOST YEARS OF LIFE**

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Michael Pressman\*

ABSTRACT

*The ubiquitous corrective-justice goals of “making a party whole” or “returning a party to the position she was in” are typically understood in monetary terms, and in this context it is fairly clear what these terms mean. If, as this Article argues, these corrective-justice goals should instead be understood in terms of something that has intrinsic value, such as happiness, various imprecisions come to the fore. This Article identifies and explores these imprecisions and, in so doing, articulates a novel framework that can be used for understanding and systematizing our approach to private law remedies. This is the Article’s first task.*

*Next, the Article focuses on the imprecision that the law must grapple with whose implications are most salient: how to aggregate happiness across years of a life. This imprecision becomes significant in the context of torts that shorten a person’s life. The Article explores the appropriate measure of damages (under a corrective-justice theory) in cases in which a victim has her expected future shortened by a tort (e.g., medical malpractice or exposure to carcinogens), but in which she has not yet died. The fact that the victim is still alive makes it possible to compensate the victim herself directly for the value of life-years. Should she be compensated? The question, already critical in a number of cases, will substantially increase in prevalence with developments in science and technology in the coming years. This Article argues, contra current law in most states, that the law should take these types of cases seriously and that victims should be compensated if their loss of life-years constitutes a loss of happiness. The contrary position is in great tension with the commonsense intuition that losing life-years is one of the most (if not the most) serious harms that one can incur. But is our commonsense intuition correct?*

*The Article proposes a three-step framework that can be used for addressing these questions of loss and getting to the appropriate measure of monetary*

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compensation: (1) Determine which “happiness aggregation function” to espouse, (2) determine how much happiness (if any), according to one’s happiness aggregation function of choice, a plaintiff lost as a result of the harm; and (3) determine how much monetary compensation will bring about a transfer of happiness to the plaintiff that will equal the amount that she lost (according to one’s happiness aggregation function of choice).

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## INTRODUCTION

Arguably<sup>1</sup> the entire purpose of private law remedies is to make an aggrieved party whole, or, said differently, to make it the case

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1. I say "arguably" because while this formulation reflects a backward-looking account of private law remedies (espoused, in the context of tort law, by corrective justice theorists), there also is another account: a forward-looking account (espoused by law-and-economics

that a person who is aggrieved can (as best as possible) have the harm he incurred be undone. Or, said differently still, the purpose of private law remedies arguably is to bring a person back to “where he was,” to “the position that he was in,” or to “*the level that he was at*” before incurring the harm that he incurred. Different remedies in different areas of private law have different doctrines, but they all employ this notion of bringing a person back to the level that he was at.

But what does it mean to bring a person back to where he was or the level that he was at? Although it is a notion that sits at the very core of private law remedies—and, indeed, is ubiquitous across all areas of the law—the concept of “the level that one is (or was) at” turns out to be under-described, imprecise, and vague in various ways—even though these imprecisions have seemingly gone unnoticed.

This Article identifies these imprecisions, and it explores the various ways and contexts in which the law confronts them and is, as a result, forced to grapple with how best to articulate more precise formulations. The main context in which the law confronts these imprecisions is in “different-numbers cases,” a category of cases that this Article will introduce, and the most important example of which involves the determinations that courts must make regarding how to compensate plaintiffs in tort law for having their lives shortened by a defendant’s tortious behavior. More specifically, the determinations at issue here are about how to compensate for a particular component of a claim arising out of the tortious shortening of life: how to compensate for the harm of failing to experience the years of life that were lost (the victim’s “hedonic loss”<sup>2</sup>). After showing how the imprecisions come to the fore in this context, this Article explores the law’s treatment of these cases, which reveals that the law generally fails to compensate plaintiffs for the lost life-years themselves.

The legal system could confront cases of plaintiffs seeking a remedy for the harm of lost life-years in two contexts: First, a case might be brought after a victim has died. In such a case, although a remedy for the lost life-years arguably might be warranted in order to bring about optimal incentives for future tortfeasors,<sup>3</sup> it could be

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theorists). I explain in Part I.B, *infra*, the various reasons for why it is defensible and, indeed optimal, for this Article to proceed through a backward-looking lens.

2. For usage of the term “hedonic loss,” see, e.g., Cass Sunstein & Eric Posner, *Dollars and Death*, 72 U. CHI. L. REV. 537, 544–45 (2005).

3. See, e.g., Jennifer Arlen, *An Economic Analysis of Tort Damages for Wrongful Death*, 60 N.Y.U. L. REV. 1113, 1119–20 (1985); Sunstein & Posner, *supra* note 2, at 556; Michael Pressman, *Hedonic-Loss Damages that Optimally Deter: An Alternative to “Value of a Statistical Life” that Focuses on Both Decedent and Tortfeasor* (unpublished manuscript) (on file with author).

argued that plaintiffs should not recover for this harm because this harm was to a victim who is no longer alive and therefore cannot be compensated.<sup>4</sup> This Article, however, primarily explores a second context in which plaintiffs might seek a remedy for the harm of lost life-years: cases in which a victim has her expected future shortened by a tort (e.g., medical malpractice or exposure to carcinogens), but in which she has not yet died. In a case of this type, the fact that the victim is still alive makes it possible to compensate the victim herself directly for the value of life-years. Thus, even if compensation for lost life-years is not warranted in cases where the victim is dead, it might still be warranted in cases where the victim is still alive.

The fact that the law generally fails to compensate plaintiffs for lost life-years even when the victim is alive and able, herself, to be compensated is in great tension with the commonsense intuition that having one's life shortened is one of the most (if not *the most*) serious harms that one can incur. If this commonsense intuition is correct, the rule against compensation for a person whose life is shortened seemingly is an egregious gap in the law that needs to be filled.

This Article explores the appropriate measure of damages for situations where a victim has her expected future shortened by a tort but in which she has not yet died, and it argues, contra current law in most states, that the law should take these types of cases seriously and that victims should be compensated if their loss of life-years constitutes a loss of happiness.<sup>5</sup> Although this Article does not provide a conclusive answer to the questions of whether, and, if so, how much, a person should be compensated for having her life shortened, the Article's analysis of the imprecisions in the concept of "the level that one is at" enables us to recognize the existence of and identify important unanswered questions—and, indeed, *un-asked* questions—in this area of the law, and provides us with the theoretical framework and tools to answer them. These questions are not only theoretical, but also practical—with our answers having important tangible impacts on the lives of many. Further, not only is it already crucial that we articulate plausible answers now, but the Article argues that developments in science and technology in the coming years will substantially increase the frequency with

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4. Some might argue, however, that, even if the victim cannot be compensated for the lost life-years, it would be appropriate for her estate to be compensated for this harm.

5. Although this Article focuses on situations in which the victim is still alive at the time of the suit, the analysis in this Article will also apply to cases where the victim is no longer alive if one is of the view that plaintiffs should indeed recover for a victim's "hedonic loss" even in cases where the victim is dead at the time of the suit.

which the law confronts these questions, thus making the current inquiry all-the-more urgent.

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The Article proceeds as follows:

Part I provides two brief preliminary discussions. First, it provides descriptions and examples of “different-numbers problems” so that the reader can more vividly grasp the nuts and bolts of these problems, the issues they raise, and why they are so difficult to satisfactorily resolve. Second, Part I (1) provides descriptions and clarifications regarding forward-looking and backward-looking accounts of tort law (and of private law more generally)—which correspond, respectively, to the positions of the law-and-economics theorist and of the corrective-justice theorist; (2) explains the interactions between the two accounts; and (3) explains the assumptions that this Article will be making regarding these issues.

With these preliminary discussions aside, Part II then begins the Article’s inquiry by describing the concept of “the level that one is (or was) at” and showing that this notion sits at the core of private law remedies (as well as being employed across all other areas of the law). It then explains how the notion is imprecise in various ways. The first step in identifying the imprecisions is to recognize that the law’s typical focus on a person’s financial position is merely a proxy for one’s position in terms of happiness (or, perhaps, some other feature of a person’s welfare that similarly might be thought to be intrinsically valuable).<sup>6</sup> Part II shows that, once the shift is made to understanding “the level that one is (or was) at” in terms of happiness, three key imprecisions come to the fore: (1) how to quantify the happiness level of a moment of experience, (2) the temporal question of which portion of one’s life—be it one’s whole life, a temporal chunk thereof (e.g., one’s future), or single moments—should be the relevant portions of a person’s existence used for determining the position that one was in, is now in, or will be returned to, and (3) if the relevant portion of one’s life is a period extended over time that includes more than one conscious moment, what function to use (be it sum-aggregative,

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6. The questions that I address in this Article will be just as relevant and important to answer even for those who think that things other than happiness have intrinsic value and that not everything boils down to happiness. Although, going forward, I will explore the issues here through a happiness lens, readers could instead substitute in for happiness another feature of experience that they believe has intrinsic value, and my discussions will have similar force in that other context. Theorists operating with other accounts of value will confront the same questions that I will be raising here. Thus, this Article’s discussions are equally important for those who do not think that all value boils down to happiness.

averaging, or something else) to determine the value of the whole, given the value of its parts.

With respect to each of the identified imprecisions, this Article assesses (1) whether the law must be more precise or if it can get by with the current imprecision, (2) if it must be more precise, which situations require this greater precision, and (3) if the law requires that the formulations be more precise, what the law's more precise formulations should be.

Part II concludes, with respect to the second imprecision, that it cannot be sidestepped, but it offers a solution to what the question of what the law's more precise formulation should be. Part III then addresses the question of whether the law must be more precise with respect to the first imprecision, and it argues that it need not be, and thus that the law is able to sidestep this question.

Ultimately, the bulk of the Article is devoted to exploring the third imprecision (about which aggregation function to use to determine the value of the temporal whole, once we know—and taking as given—the values of the individual temporal parts), because, unlike the first imprecision (but like the second), it cannot be sidestepped, and, unlike the second imprecision, it is extremely difficult to resolve. The third imprecision is addressed in Part IV.

As Part IV shows, the law does have to address the third imprecision if the law confronts “different-numbers problems”—in short, cases where two wholes are being compared, the goodness of both of which is a function of the goodness of their respective parts, but where the two wholes are made up of a different number of parts. Further, Part IV argues that the law *does in fact confront* different-numbers problems, and that it does so when a person incurs a harm that shortens his expected future (e.g., among other things, cases of (1) medical malpractice, (2) torts of exposure to dangerous substances, such as asbestos or smoking, (3) torts of accidents, such as car accidents or construction accidents, and (4) intentional torts, including but not limited to intentional killings).<sup>7,8</sup> Thus, these are cases where the law will need to answer the question of which aggregation mechanism to espouse.

As will be shown in Part IV, the third imprecision (unlike the second imprecision) is extremely difficult to satisfactorily resolve. It

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7. Or, more generally, when the length of his future is affected either by having it made longer or shorter. This Article will focus, however, on cases where a person incurs a harm that shortens his expected future.

8. As already stated, situations where one's life is shortened by a tort could come in two stripes: those where the victim is dead at the time of suit and those where the victim is still alive. This Article focuses primarily on the latter—though the analysis applies to the former as well if one thinks that plaintiffs should recover for a victim's harm of lost life-years even if the victim is already dead.

is extremely difficult to provide a plausible account of what our aggregation function should be. Said differently, it is extremely difficult to articulate a plausible account of how to value lost years of life, and this, in large part, is due to the fact that it is extremely difficult to articulate a plausible account of how to trade off quantity of life against quality of life.

Next, Part V proceeds to explore the law's treatment of these cases. It turns out that the law almost as a rule does not allow a person to be compensated in situations where a person is harmed by having his life shortened—irrespective of whether the victim is dead or alive at the time of the suit. *Prima facie*, this suggests that the law is saying that a person is not harmed by having his life shortened. Part V explores various practical reasons why we might not allow a person to be compensated for having his life shortened even if we do think that he is harmed by having his life shortened (including, among other things, the fact that victims are often dead at the time of the suit and thus often unable to be compensated themselves), but Part V concludes that these reasons are not sufficient for denying compensation across the board to people who have their lives shortened. Part V thus suggests that courts are indeed saying that a person who has his life shortened is not harmed. This, however, is in great tension with commonsense intuitions that having one's life shortened is one of the most serious harms that one can incur. If our commonsense intuitions are correct and we are not allowing compensation for what is in fact a serious harm (if not the *most* serious harm) that a person can incur, then the law's rule against compensation for a person whose life is shortened is an egregious gap in the law that needs to be filled.

Thus, to determine if commonsense intuitions are correct, and thus whether there in fact is an egregious gap in the law, the next steps are to explore the questions of (1) whether a person can be harmed by having his life shortened, (2) if so, how much of a harm this is, and the related, and, indeed, corresponding, questions of (3) whether a person should be compensated in tort for having his life shortened, and (4) if so, how much a person should be compensated for having his life shortened. I explore these topics in depth elsewhere,<sup>9</sup> but provide a brief summary of them here—sketching out the two key analyses involved in answering these questions: (1) determining which aggregation mechanism is most plausible, and (2) converting the answer to the happiness questions into a measure of compensation for the aggrieved person.

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9. See, e.g., Michael Pressman, *Aggregating Happiness: A Framework for Exploring Compensation for Lost Years of Life*, 69 DEPAUL L. REV. (forthcoming 2020).

Lastly, in Part VI, the Article considers various extensions and further implications of the foregoing discussions. Perhaps the most important of these is as follows: while the number of cases caught within the net of the discussions of the Article is already significant, the Article provides reasons to think that, with time and further development of technology, the number of cases that confront the issues that this Article grapples with will grow substantially and precipitously. Thus, though these questions are already of great importance, their importance will continue to grow. In light of this, it is all-the-more crucial that we address these questions, and that we do so as soon as possible.

After addressing this extension as well as the others in Part VI, the Article concludes.

The contributions that this Article makes are both theoretical and practical. The theoretical: The discussions and conclusions of this Article provide analysis and insight in areas where there have been gaps in legal theory. Noticing that these gaps exist and showing them to the reader is the key first step that this Article carries out. Second, the Article attempts to provide answers to many of the questions, and to at least lay the foundations for answers to others.

The theoretical contributions also result in practical contributions. Most important are the practical implications associated with potential compensation for a person who has his life shortened. Since the current state of the law—which does not provide for compensation to a person for his having his life shortened—is in great tension with commonsense intuition, it may well be in need of significant changes. These changes would affect private law remedies and affect the lives of very many people.

Lastly, the goals of this Article can also be described at a higher level of generality: to bring about a legal system that better furthers both fairness and efficiency. My hope is that the considerations in this Article and the changes to the law that they set in motion can make progress with respect to both fairness and efficiency.

## I. TWO PRELIMINARY DISCUSSIONS

Part I provides two brief preliminary discussions intended to clarify what follows. First, it provides descriptions and examples of different-numbers problems so that the reader can more vividly grasp the nuts and bolts of different-numbers problems, the issues they raise, and why they are so difficult to satisfactorily resolve. Second, Part I (1) provides descriptions and clarifications regarding forward-looking and backward-looking accounts of tort law (and of private law more generally)—which correspond, respec-

tively, to the positions of the law-and-economics theorist and of the corrective-justice theorist; (2) explains the interactions between the two accounts; and (3) explains the assumptions that this Article will be making regarding these issues.

#### A. Numerical Examples of Different-Numbers Problems

Before proceeding further, the following provides examples that introduce and explain different-numbers problems.

Suppose that the happiness of a life is a function of the happiness of each of the moments of conscious experience that the life is composed of. Further, let's make the simplifying assumption that any particular period of time for any person always contains the same number of conscious moments. Now consider two examples, each of which compares the lives of two people.

Example 1: Suppose that Person 1 lives for 100 years and that each of his conscious moments is of happiness level five. Suppose that Person 2 also lives for 100 years but that each of his conscious moments is of happiness level seven. Which life is happier? Which life would one rather live? Person 2's life. This is an easy question to answer, and this is because it involves a "same-numbers" problem. The number of components making up the whole in both of the states of affairs being compared was the same: 100 years of conscious moments.

A "different-numbers" problem, however, is not always easy to answer.<sup>10</sup> Example 2: Suppose (again) that Person 1 lives for 100 years and that each of his conscious moments is of happiness level five. Suppose that Person 3 lives for 50 years and that each of his conscious moments is of happiness level eight. This is a different-numbers problem, because the comparison is between two wholes that are composed of a different number of components. Which life is happier, Person 1's or Person 3's? Which life would one rather live? Here, the answer is not obvious. It depends on what aggregation mechanism (i.e., function) one employs for going from the values of the parts to the value of the whole.

If one uses what I will call total-utilitarianism-type (TU-type) aggregation, the happiness of a life is the sum of the happiness values for each conscious moment. Thus (if we label a year's worth of conscious moments of level  $x$  as summing to  $x$  units of happiness<sup>11</sup>), Person 1's life will have a happiness value of 500 (i.e.,  $5 \times$

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10. See Part IV.B, *infra*, for a more in-depth discussion of this topic.

11. If we were to be more precise, and if there were, say, one billion conscious moments in a year, then if each moment were at level five, then there would be five billion

100), whereas Person 3's life will have a happiness value of 400 (i.e.,  $8 \times 50$ ). If one uses what I will call average-utilitarianism-type (AU-type) aggregation, the happiness of a life is the average of the happiness values for each conscious moment, and thus Person 1's life will have a happiness value of five, whereas Person 3's life will have a happiness value of eight. Thus, our determination of which life is happier (or better) will be a function of which aggregation mechanism we employ (because TU says Person 1's life is happier, but AU says Person 3's life is happier).

Importantly, it's not immediately obvious which aggregation mechanism is the more plausible one. As this Article will show, although TU-type aggregation and AU-type aggregation both have attractive features, they are both also afflicted by seemingly devastating counterintuitive implications that appear to render each of them (and their various respective temporal sub-versions, to be described later) implausible.<sup>12</sup> Various accounts that are hybrids of TU-type aggregation and AU-type aggregation also can be offered, but they too seem to be afflicted by devastating counterintuitive implications.<sup>13</sup> Perhaps one could come up with some other more plausible option for an aggregation mechanism, but it's not clear what other views there might be that do not fit within one of the categories just described. Thus, not only do different-numbers problems force us to choose among the various possible aggregation mechanisms, but it's extremely tricky to articulate a single aggregation mechanism that can satisfactorily handle all cases.

In same-numbers problems, on the other hand, however, we need not choose between AU-type and TU-type aggregation (or other, hybrid, theories), because they will always yield the same comparative assessments between the states of affairs that are being compared.

As we can now see, different-numbers problems are tricky. However, although different-numbers problems are a problem that philosophers confront, it has not been recognized that they are a problem that the law also must confront. As far as I can tell, there has not been a single discussion about different-numbers problems in the context of the law—not in academic literature, in case law, or anywhere else. This is concerning, because there are situations

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happiness units in the year. Or, if one wants to say that there are five units in the year, then one could say that what we had called happiness level five was actually happiness level five-divided-by-one-billion. I'll opt for the first of these two possibilities here, meaning that the number I give to a person's annual total happiness units is actually in, say, billions. This detail does not affect the analysis here, though, so it suffices to employ the simplified terms.

12. See Part IV.B, *infra* for a more in-depth discussion of this topic.

13. See generally DEREK PARFIT, REASONS AND PERSONS 119-41 (1984); Michael Pressman, *A Defence of Average Utilitarianism*, 27 UTILITAS 389 (2015).

in which the law must confront different-numbers problems, and it is of great importance (1) that we become aware of how and when the law confronts them and (2) that we come up with a solution that ensures the law will resolve such situations satisfactorily. This Article carries out the first task, and it attempts to lay the foundations for the second.

B. *Backward-looking and Forward-looking Accounts of Tort Law  
(and of Private Law more Generally)*

In the Introduction, I wrote that “[a]rguably the entire purpose private law remedies is to make an aggrieved party whole, or, said differently, to bring a person back to ‘where he was,’ to ‘the position that he was in,’ or to ‘the level that he was at’ before incurring the harm that he incurred.” This, indeed, is the lens through which this Article will proceed, but, before proceeding, it is important to note a wrinkle and to explain the assumptions under which I will be operating.

The underlying rationales for tort law (and private law, more generally) ultimately actually fall into *two* main camps: forward-looking theories (typically espoused by law-and-economics theorists)<sup>14</sup> and backward-looking theories (espoused, in the context of tort law at least, by corrective-justice theorists).<sup>15</sup> Forward-looking theories maintain that the law is and should be determined by what brings about optimal incentives for future actors. Backward-looking theories maintain that the law is and should be determined by what brings about corrective justice to the harmed parties in any particular case (i.e., what makes these parties whole).

In this Article, I will explore the doctrines in question exclusively through the backward-looking lens. Doing so is defensible for three reasons.

First, I have argued elsewhere that, contra popular belief, forward-looking and backward-looking accounts of tort law are entirely compatible and coextensive.<sup>16</sup> Thus, from my perspective, exploring the doctrines in question through the backward-looking

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14. See, e.g., GUIDO CALABRESI, *THE COSTS OF ACCIDENTS* (1970); Richard Posner, *Wealth Maximization and Tort Law: A Philosophical Inquiry*, in *PHILOSOPHICAL FOUNDATIONS OF TORT LAW* (David G. Owen ed., 1995).

15. For examples of well-known articulations of corrective justice theory, see JULES COLEMAN, *THE PRACTICE OF PRINCIPLE* (2001); ERNEST WEINRIB, *CORRECTIVE JUSTICE* (2012); Jules Coleman, *The Practice of Corrective Justice*, in *PHILOSOPHICAL FOUNDATIONS OF TORT LAW* 53 (David G. Owen ed., 1995); Ernest Weinrib, *Corrective Justice*, 77 *IOWA L. REV.* 403 (1992).

16. Michael Pressman, *The Compatibility of Forward-Looking and Backward-Looking Accounts of Tort Law*, 15 *UNIV. N.H. L. REV.* 45 (2016).

lens also simultaneously satisfies exploring them through a forward-looking lens.

Second, even if my compatibility hypothesis were false, exploring the doctrines in question through a backward-looking lens is important, because even if the backward-looking lens doesn't constitute the whole picture of what is relevant, the vast majority of theorists would think that it constitutes at least (an important) *part* of what is relevant to the analysis of whether a private law doctrine (e.g., a tort doctrine) is good.

Third, even if my compatibility hypothesis were false *and* one didn't think that corrective justice was at all important in and of itself, I think that the determination of what would make the plaintiff whole is often the key first step in determining what the optimal damages would be from a forward-looking perspective (i.e., in terms of creating the optimal incentives). While the economist would likely consider other factors as well, a key component even of the forward-looking analysis is to quantify the externalities imposed by the behavior that the defendant engages in, and this sum typically is the amount that it would take to make the plaintiff whole (i.e., bring him back to the level that he was at before incurring the harm that he incurred).

Additionally, *even if each of the three foregoing reasons were not persuasive*, the backward-looking framework employed by this Article would *still* be an important exploration, albeit one that in that case would thus not speak to all readers. There are indeed many who do view the purpose of private law remedies exclusively through a backward-looking lens, and, for them, exploring the issues through a backward-looking lens would constitute the whole picture.

For these reasons, this Article will proceed by discussing the issues exclusively through a backward-looking lens and assume that the purpose of private law remedies is to make a harmed person whole.

## II. THE LAW'S GOAL OF RETURNING A PERSON TO "THE LEVEL THAT ONE WAS AT," AND HOW THIS IS AN IMPRECISE NOTION

### A. *The Notion of "the Level that One Was at" and Its Ubiquity in the Law*

A large number of areas of the law employ the notion of "the level that one was at," or "the position that one was in" to describe some aspect (be it financial, happiness-related, or something else)

of a person's situation before the occurrence of an event (such as an event that causes the person harm).<sup>17,18</sup> This is especially the case in private law areas—including contracts, torts, property, and unjust enrichment—and, in particular, in private law remedies, but it is the case in various (and diverse) other areas of law as well, including, to name just a few, tax law,<sup>19</sup> constitutional law,<sup>20</sup> criminal law,<sup>21</sup> and family law.<sup>22</sup>

Within private law, the notion of “the level that one is at” is particularly ubiquitous. Private law areas govern the interactions among private citizens, and the entire purpose of private law remedies is (arguably, and speaking loosely) to make it the case that a person who is aggrieved or wronged can have this grievance or

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17. In many areas (especially in the private law areas), the notion is employed explicitly, though in other areas it is employed implicitly. See, e.g., Richard Craswell, *Against Fuller and Perdue*, 67 U. CHI. L. REV. 99, 101 (2000); L.L. Fuller & William R. Perdue, Jr., *The Reliance Interest in Contract Damages: I*, 46 YALE L.J. 52, 54 (1936).

18. As will be discussed below, in Part II.B, these notions seem to generally be understood to refer to either the *financial* level that one was at and the *financial* position that was in or the *happiness* level that one was at and the *happiness* position that one was in. See, e.g., Craswell, *supra* note 17, at 102; Fuller & Perdue, *supra* note 17, at 54. While there are occasions where it is made clear whether the terms “the level that one was at” and “the position that one was in” refer to the position and level in “financial” or “happiness” terms, this is rarely the case. Thus, until Part II.B, below, where I address head-on whether the terms are meant to refer to “financial” or “happiness” levels and positions, I will simply use the generic form of the terms—which is how they typically are used. I mention here what the two main options are for giving content to the “position” and “level,” though, because otherwise it might be somewhat mysterious what these phrases might be referring to.

19. Virtually all doctrines in tax law are premised on identifying the position a person is in and then taxing him accordingly. This is apparent from an income tax's basic premise of taxing a person based on the level of income he receives, but this is also apparent from other less central doctrines—including, just to name two, rules regarding imputed income and deductions for medical expenses. See generally Michael Pressman, “*The Ability to Pay*” in *Tax Law: Clarifying the Concept's Egalitarian and Utilitarian Justifications and the Interactions Between the Two*, 21 N.Y.U. J. LEGIS. & PUB. POL'Y 141 (2018); William Andrews, *Personal Deductions in an Ideal Income Tax*, 86 HARV. L. REV. 309 (1972); Mark G. Kelman, *Personal Deductions Revisited: Why They Fit Poorly in an “Ideal” Income Tax and Why They Fit Worse in a Far from Ideal World*, 31 STAN. L. REV. 831 (1979).

20. Among other examples: in order to determine if a plaintiff is the proper party to bring a matter before a federal court, four requirements must be met, one of which is that the party must allege and prove that he has been injured. See, e.g., *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 560 (1992). The inquiry into whether the party has been injured involves, among other things, a comparison between the position that he was in before the event in question and the position that he was in after the event in question.

21. Among other examples: many sentencing enhancements for white-collar crimes involve determinations of how great the losses caused by the defendant were. See U.S. SENTENCING GUIDELINES MANUAL § 2B1.1 (U.S. SENTENCING COMM'N 2019). These involve setting as a baseline the position that a victim (be it a person or an entity) was at prior to the crime, and then comparing this position to the victim's position after the crime. See *id.*

22. For the purposes of determining spousal support after a divorce, the law often strives, in various ways, to put a spouse in the position he or she was in before the divorce. As one example, California courts base spousal support, in part, on the standard of living established during marriage. Cal. Fam. Code § 4330(a). This standard of living is used as a baseline for the purposes of determining spousal support under the Cal. Fam. Code § 4320(a) circumstances.

wrong undone—at least as best as is possible. In other words, the goal of private law remedies is to put the plaintiff back into the position where he would have been but for the violation of his legal right. That this is the goal of a remedy can be seen from its etymology: the word “remedy” derives from the Latin “re” (meaning “again” or “back”) and “medeor (meaning “to heal”), and “medeor” in turn comes from the Proto-Indo-European root “med” (meaning “take appropriate measure,” “measure,” “heal,” “allot,” or “give”).<sup>23</sup> Thus, very literally, a remedy is something that aims to measure back or again, or to allot (or give) back or again. Or, phrased only slightly differently: a remedy, very literally, is something that aims to give a person back what he had, or to put a person back to where he was—back to where he was before one or more of his legal rights were violated.

Of course, different areas of private law have different subject matter and different doctrines, and thus remedies in different domains may appear to be quite different. Despite these differences, however, they all seek to remedy the violation of a right by bringing a party back to where he would have been but for the wrong.

For instance, in contracts, the three typical metrics for damages for breach of contract are the expectation interest, reliance interest, and restitution interest.<sup>24</sup> While each of these metrics is different, each of them employs the notion of returning a party to the level that he was at, albeit employing this notion with respect to different times and different people. Expectation damages and reliance damages focus on the position of the non-breacher, and they aim to put the non-breacher in the position that he would have been in given a particular counterfactual situation. With expectation damages, we seek to put the non-breacher in the position he would have been in if the contract had been performed; with reliance damages, we seek to put the non-breacher in the position he would have been in if the contract had never been en-

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23. See *Remedy*, ONLINE ETYMOLOGY DICTIONARY, [https://www.etymonline.com/word/remedy#etymonline\\_v\\_10401](https://www.etymonline.com/word/remedy#etymonline_v_10401) (last visited Jan 5, 2020).

24. See generally Craswell, *supra* note 17; Fuller and Perdue, *supra* note 17. Specific performance is also a remedy used in contract law. Unlike the three damages measures, specific performance is an equitable remedy, and it simply requires that a breacher do as he had promised he would. Thus, specific performance does not employ the notion of bringing the non-breacher back to where he had been before the breach, and thus it also does not employ the notion of “the level that one was at.” To the extent that specific performance is performed, however, and to the extent that there either are no consequential losses or the non-breacher is compensated for them, specific performance presumably does bring the non-breacher back to where he had been before the breach, and to the (financial or happiness) level at which the non-breacher was, because the non-breacher does end up receiving the very thing he was promised. Thus, specific performance is consistent with the goal of returning a non-breacher to the (financial or happiness) level that he was at before breach, even if it does not explicitly employ these terms.

tered into. The restitution interest employs the notion of the “level that he would have been at” as well, but it tracks this level for the breacher. With restitution damages, we seek to put the breacher back at the level at which he would have been if he had not entered into the contract, and the disgorged gains that bring the breacher back to this level are then transferred to the non-breacher.

The notion of the level at which one would have been is also a key notion in torts. According to the corrective justice theory of torts, the underlying goal of torts is generally to make the aggrieved party whole and to compensate him for his losses.<sup>25</sup> Thus, the goal is to put the aggrieved party in the position that he would have been in but for the tortious activity of the defendant. Even economists who deny that corrective justice is the goal—or the fundamental principle—of tort law will generally recognize that a collateral benefit of tort law is that it brings an aggrieved party back to the level that he would have been at but for the tortious behavior.<sup>26</sup>

The notion of the level at which one would have been is also a key concept employed throughout other private law areas, including property and unjust enrichment. In requiring a party to compensate another party for losses arising due to property claims, remedies seek to bring the aggrieved party back to the position he would have been in if not for his property-related harm. In unjust enrichment and restitution cases,<sup>27</sup> too, remedies focus on bringing

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25. For examples of well-known articulations of corrective justice theory, see COLEMAN, *THE PRACTICE OF PRINCIPLE*, *supra* note 15; Coleman, *The Practice of Corrective Justice*, *supra* note 15; Weinrib, *Corrective Justice*, *supra* note 15; WEINRIB, *CORRECTIVE JUSTICE*, *supra* note 15.

26. On a different, but related note, for an explanation of why the economist’s account can be understood to require and employ corrective justice, see Richard A. Posner, *The Concept of Corrective Justice in Recent Theories of Tort Law*, 10 J. LEGAL STUD. 187, 201 (1981) (“Once the concept of corrective justice is given its correct Aristotelian meaning, it becomes possible to show that it is not only compatible with, but required by, the economic theory of law.”). For my exploration into the long-standing debate between economists and corrective justice theorists regarding whether tort law is and or should be forward-looking or backward-looking, and for my argument that the debate rests on a false assumption, see Pressman, *supra* note 16.

27. While some unjust enrichment and restitution claims arise out of other substantive areas of private law, there are also some that arguably are free-standing claims. Whether and the extent to which they constitute their own substantive area of the law has been a topic of much recent debate. See Richard Epstein, *The Ubiquity of the Benefit Principle*, 67 S. CAL. L. REV. 1369 (1994); Andrew Kull, *Restitution as a Remedy for Breach of Contract*, 67 S. CAL. L. REV. 1465 (1994); Doug Rendleman, *Measurement of Restitution: Coordinating Restitution with Compensatory Damages and Punitive Damages*, 68 WASH. & LEE L. REV. 973 (2011); Chaim Saiman, *Restitution in America: Why the US Refuses to Join the Global Restitution Party*, 28 OX. J. LEGAL STUD. 99 (2008); Ernest J. Weinrib, *Restitutionary Damages as Corrective Justice*, 1 THEORETICAL INQ. L. 1 (2000).

the unjustly enriched party back to the position that he would have been in if not for his having unjustly enriched himself.

Further, there is also a whole body of recent literature about the alleged asymmetry in the law's treatment of gains and losses (e.g. torts versus unjust enrichment),<sup>28</sup> and these debates constitute yet another area that makes use of the notion of "the level that one is at." Indeed, without this notion, these debates could not even get off the ground. All of the quantifications for both torts and unjust enrichment are determined to be gains or losses with respect to a particular baseline value. It is taken as a given that there is a baseline level (be it a baseline level of happiness or a baseline financial position), and the questions raised and addressed in these debates are about how and why shifts from the baseline brought about by others can or should be treated similarly or differently.

In addition to these areas of private law employing the notion of returning an aggrieved party to "the level that the person was at," there are also various non-private-law areas that seem to have the same remedial goal. One such example is the compensation statutes that many states have for people who have been wrongfully convicted and incarcerated.<sup>29</sup> Although some have argued that these statutes actually can or should track principles of restitution,<sup>30</sup> the most straightforward way of understanding them is providing tort-like compensation that seeks to compensate those who were wrongly incarcerated for the wrongs (and disutility) that were incurred. To the extent that this is the case—and even to the extent that principles of restitution explain these statutes—these statutes invoke the same remedial principle of returning a party (be it the plaintiff or the government) to the position that the party was in before the harm (or unjust enrichment) occurred. Thus,

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28. See generally Richard Epstein, *The Ubiquity of the Benefit Principle*, 67 S. CAL. L. REV. 1369, 1371 (1994) ("It is commonplace in modern discussion to dispute the usefulness of any line between harm inflicted and benefit conferred and by implication the distinction between restitution and tort, between, as it were, the harm principle and the benefit principle. Everything is said to turn on the choice of the appropriate baseline by which these calculations are made."); Saul Levmore, *Explaining Restitution*, 71 VA. L. REV. 65 (1985); Ariel Porat, *Private Production of Public Goods: Liability for Unrequested Benefits*, 108 MICH. L. REV. 189 (2009).

29. These compensation statutes typically allow exonerees to obtain compensation without having to file a lawsuit and without having to show that official misconduct caused the incarceration. See Adele Bernhard, *A Short Overview of the Statutory Remedies for the Wrongly Convicted: What Works, What Doesn't and Why*, 18 B.U. PUB. INT. L.J. 403 (2009). Different states offer different amounts of compensation (and some states do not have compensation statutes at all). See, e.g., ALA CODE § 29-2-159(a) (Westlaw through Act 2016-54 of the 2016 Reg. Sess.); N.C. GEN. STAT. § 148-84(a) (LEXIS through 2015 Reg. Sess.); TEX. CIV. PRAC. & REM. CODE ANN. § 103.052(a) (West, Westlaw through end of the 2015 Reg. Sess. of the 84th Leg.).

30. See generally Erik Encarnacion, *Why and How to Compensate Exonerees*, 114 MICH. L. REV. FIRST IMPRESSIONS 139 (2015).

these statutes also invoke the notion of “the level that the person was at.”

In sum, the notion of “the position that one was in” or “the level that one was at” is ubiquitous in the law. This notion is particularly prevalent in private law areas, and especially so in private law remedies—the entire purpose of which is arguably to return a party to the position that he was in or the level that he was at but for a harm that he incurred. In light of the term’s ubiquity, it will serve us well to further probe it to ensure that we understand its meaning.

B. *“The Level that One Was at” Is a Notion Both in Terms of Money and Happiness, but the Happiness Version Has Intrinsic Importance and the Money Version Has Mere Instrumental Importance*

Up until now, I have been referring to the remedial notion as returning a person to the “position he was in” or to the “level he was at” before the harm. As I will argue, this phrase is vague, imprecise, and under-described in various ways—many of which are not immediately apparent. One, however, is somewhat more apparent than the rest, though it too typically goes unnoticed: are we talking about returning a person to the “position he was in” before the harm in terms of money, happiness, or something else?

After all, on the one hand, it seems that remedies awarded by courts are typically economic and that the harms for which one might seek a legal remedy are usually economic. On the other hand, some harms for which one might seek a legal remedy are non-economic in nature. These non-economic harms are typically harms associated with the loss of happiness or the infliction of pain or suffering. Furthermore, it seems that one’s economic position is only valuable to the extent that it affects one’s position in terms of happiness.

In light of the fact that these related but non-identical domains (money and happiness) both potentially could be a good that “the position he was in” or “the level he was at” refers to, which is it that we are after in the law? When the law seeks to use a legal remedy to return a person to “the position he was in” or “the level he was at,” is it happiness or money that it has in mind? In short, I think that the answer is that we are generally referring to money, but that money is used merely because it is a good proxy for what we actually care about—returning a person to “the position he was in” or “the level he was at” in terms of happiness.

As a practical matter, we generally speak in economic terms. We talk about putting a party back into a financial position that he

would have been in and label the level that a person was at in terms of his financial position. Further, not only do we label the position that the person was at in terms of finances, we also determine the amount of the remedy in terms of money. Money is the currency of our legal system. If someone owes a transfer to a party that he harmed, we generally require the party that has done the harming to make the aggrieved party whole by paying money to the aggrieved party. Furthermore, this is the case even if the harm done to a person is not only (or at all) financial. Even if the harm done is more than financial—as perhaps is the case in torts where there is a claim for pain and suffering or non-economic damages of this sort—the transfer from the harming party to the harmed party is still typically made in terms of money.

Money, however, is clearly a mere proxy for what we actually care about—be it happiness or some other feature of what we experience in life—and even law-and-economics theorists will in almost all cases agree to this.<sup>31</sup> After all, money does not have intrinsic value. It has merely instrumental value. Money has value because of the goods it enables a person to buy, and these goods are valuable because of how they affect a person's life. More specifically, these goods are valuable because of how they affect a person's conscious experiences—e.g., how a person's happiness is affected. It can be contested that everything of value boils down to happiness, but this is not an unreasonable or outlandish assumption, and it is one under which I will operate. Furthermore, while there might be some who do not believe that everything of value boils down to happiness (perhaps instead maintaining that things such as health or friendships or things of this nature have intrinsic

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31. Even Richard Posner, whose original view was that tort law's goal is to maximize wealth—as opposed to happiness or something else that has clear value—has changed his view over the years. Instead of espousing a view of tort law according to which tort law seeks to maximize economic efficiency (i.e., maximize wealth), he now espouses a view according to which tort law seeks to maximize happiness. See Richard Posner, *Wealth Maximization and Tort Law: A Philosophical Inquiry*, in *PHILOSOPHICAL FOUNDATIONS OF TORT LAW* (David G. Owen ed., 1995). In switching to this view, Posner adopted the typical view shared by members of the law and economics movement both then and today. Of course, the fact that Posner previously endorsed a view according to which the goal of tort law is the maximization of wealth does not necessarily speak to what he viewed as being of intrinsic value and what he viewed as being of merely instrumental value. After all, one could think that the goal of tort law is to maximize wealth even if one views wealth (i.e., money) as merely of instrumental value. The fact that one seeks to maximize something in the domain of tort law does not mean that it is what one seeks to maximize overall, summing over all domains of society and life. Notwithstanding this, however, the change in Posner's view about the purpose of tort law is notable.

As for what constitutes the general position of economists about the value of money, it seems fair to say that it is a consensus view, even among economists, that money does not have intrinsic value, but, rather, that it merely has instrumental value. See, e.g., Sunstein & Posner, *supra* note 2.

value), even people in this camp will likely agree that money is not one of the things that has intrinsic value. And, crucially, the questions that I address in this Article will be just as relevant and important to answer even for those who think that things other than happiness have intrinsic value and that not everything boils down to happiness. Thus, although, going forward, I will explore the issues here through a happiness lens, readers could instead substitute in for happiness another feature of experience that they believe has intrinsic value, and my discussions will have similar force in that other context. Theorists operating with other accounts of value will confront the same questions that I will be raising here. Thus, this Article's discussions are equally important for those who do not think that all value boils down to happiness. Notwithstanding this, I will continue to carry out my discussions through a happiness lens.

Despite happiness being what we actually care about, we operate in terms of money because it works better in two respects. First, it works better for assessing "the level a person was at" and the level that the person now is at, or described differently, the distance from a person's original level that a person was shifted due to having his legal rights violated by someone else. Money works well both because many—if not most—harms that one can get a legal remedy for are purely economic harms, and because even for non-economic harms, money is, in (very) broad strokes, a decent proxy for happiness—even if not in every way.<sup>32</sup> As for why this works just as well as if not better than assessing the amount of happiness lost (or the levels of happiness before and after the harm): in cases of pure financial loss, the return to one's financial position will fully<sup>33</sup> remedy the loss so a happiness metric would, at best, do equally well as the financial metric; and in cases where there is non-

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32. Surely, as a general matter, money is not a fantastic proxy for happiness. After all, except, perhaps, in cases of extreme poverty, we would have very little sense of how happy a person is by looking at his overall wealth. Despite this, in the context of many types of loss of happiness due to a harm, it seems that providing money can do a decent job, in broad strokes, of transferring happiness to a plaintiff. People do generally prefer more money to less money, and thus we can assume in typical cases that money has value. Thus, typically a transfer of money will bring about a transfer of happiness to a person, and the correlation between awards of money and awards of happiness would thus likely be positive. It seems that money is at least as good of a proxy as anything else that the legal system could use.

33. There are of course important questions that can be asked about whether a party is truly made whole even when the loss is purely financial and the party is then compensated for the full financial amount. A party could seemingly still be (and in fact usually still is) worse off after the whole ordeal, and this could be for various reasons, including, for example, the hassle and stress and time spent in the attempt to get compensated for the loss. While these are important concerns, I leave these types of concerns aside for the purposes of simplifying the current discussion. Thus, I assume (counterfactually) that being compensated for a purely financial loss in the amount that was lost would indeed make a party whole.

economic loss, while perhaps a happiness metric could be more tailored to happiness than the monetary proxy, happiness presents (at least *prima facie*) various difficulties regarding quantification (especially in the context of quantifying the happiness level of a single moment of conscious experience), so the financial proxy seems to be our best bet.<sup>34</sup>

Second, money works better as a currency for transfer. While perhaps happiness could be transferred in non-monetary ways from a defendant to a plaintiff, happiness is hard to quantify and hard to transfer, and money is a tangible thing that can be easily quantified and easily transferred. Thus, even if money is a proxy for happiness and thus not perfectly tailored to what we care about, using it for transfers has important practical benefits.

Despite these good reasons for operating in money, however, it is important to be clear that money is used as a proxy for happiness. Happiness is what we do and should care about intrinsically. Thus, while we typically talk in terms of money when we talk about returning a person to ‘the level that he was at’, what we really want is to bring a party back to the happiness level that he would have been at but for the event that harmed him, and what we really want is for this to be brought about by the defendant transferring a certain amount of happiness back to the plaintiff.

Thus, in sum, “the level that one is at” is a notion both in terms of money and happiness, but the happiness version has intrinsic importance and the money version has mere instrumental importance.

C. *Ways in Which the Notion of “the Level that One Was at” in Terms of Happiness Is Imprecise*

I’ve said that the goal of private law remedies is to bring a person back to “the position that he was in” or “the level that he was at,” and since I have established that money is just a proxy for happiness, the goal of private law remedies is to bring a person back to this position in terms of happiness. Thus, if we want to explore and understand the notion of “the position that a person was in” or “the level that one was at,” we must do so in the context of happiness.

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34. These “various difficulties regarding quantification (especially in the context of quantifying the happiness level of a single moment of conscious experience)” that using the domain of happiness would at least *prima facie* present—be they true difficulties or not—will be addressed throughout this Article, but, in particular, in Part III.

Once we shift gears and focus on understanding this notion in terms of happiness instead of money, however, it becomes a bit less clear what the phrase means. In terms of money, it's fairly clear what the phrase means. "The financial position that a person is in" and "the money level that one is at," while not completely specific, pretty clearly refer to the amount of money that a person has at the time in question. Perhaps there could be some questions about how this financial position should account for things such as expected future income or one's potential future earning capacity, but generally speaking, it seems pretty clear how to assess a person's financial situation: sum up a person's assets and liabilities and calculate on net how much money the person owns.

It is much less clear how to understand the notion of "the position that a person is in" and "the level that one is at" in terms of happiness. This is for three reasons, all of which have to do with ways in which the phrase is quite under-described, and thus vague. First, we confront questions about how to quantify and measure the amount of happiness of a particular moment—both as a theoretical matter and as a practical matter. Second, we confront questions about which moment and perhaps which *group of moments* are the ones that we are trying to quantify the happiness of. Third, if it is a *group of moments* that we are trying to quantify the happiness of, there is a question of what aggregation mechanism (i.e., function) to use to determine the value of the whole, once we know (and taking as given) the values of the individual parts.

### 1. The First Imprecision: Quantifying the Happiness at a Particular Moment

If we are going to be talking about a happiness level, it seems that we will need to be able to articulate a metric for quantifying happiness and that we will also need some way of identifying what level of happiness a person is at, using that metric. Articulating the metric is a theoretical task and identifying what level of happiness a person is at, using that metric, is a practical task. These two tasks are related, however. Leaving aside the question of identifying what level of happiness a person is at, at least for the time being, as a practical hurdle, we can focus on the theoretical question of articulating a metric for quantifying happiness. What is the unit of happiness? Supposing we call a unit of happiness a "util," what is one util? How much happiness is that? Absent a metric of some sort that is articulated, it is unclear how we could go about referring to a level of happiness, and it is even less clear how one could

go about articulating or picking out a particular level of happiness that one attributes to a particular person at a particular moment.

We seemingly do not currently have a metric for happiness, but that does not mean that one cannot be articulated. If we are going to be referring to happiness levels, however, it seems that articulating a metric for quantifying the level of happiness at a particular moment is something that we probably have to do first.

## 2. The Second Imprecision: the Temporal Component of the Account of Happiness Quantification, and a Preliminary Attempt to Specify the Temporal Component

Even if the first question is answered (i.e., even if we articulate a metric for quantifying happiness, and even if we solve the practical problem of how to identify how much happiness a particular person has at a particular time using that metric), there is still a second question about what precisely we mean when we refer to a person's happiness level. In particular, there seems to be a key question of what we mean in terms of the dimension of time. After all, it seems that a person's happiness level is a property of a conscious experience at a particular moment of time. In light of this, we need to be more precise when we say that we want to return a person to a particular level of happiness.

In saying that we want to return a person to a level of happiness, what moment in time of a person's life is the relevant moment for assessing the level of happiness that a person was at before the harm? The moment right before the harm occurred? Additionally, since a level of happiness is a property of a particular moment of experience, which moment of a person's life is it that we are trying to increase the happiness of to match that prior moment? In light of these questions, it seems that we need to make sense of two things: (1) the temporal component of the happiness level that a person was at before the harm, and (2) the temporal component of the happiness level that we are attempting to bring a person to (since we obviously cannot go back and change the happiness level at any moment in the past).

There seem to be various possible answers to these questions about the temporal nature of the phrase "the happiness level that one is at," some of which are the following.

First, as just mentioned, one option would be that we want to return the happiness of a particular moment to what it would have been if not for the harm. As just stated, however, this option is not possible because we cannot change the past.

Second, another option is that we are seeking to increase the happiness of a particular moment in the future as a remedy for the harm that occurred to a different moment, which occurred in the past. There are various ways in which one might attempt to carry out this option. One might seek to return a person to the happiness level he was at by (1) returning a person's happiness level at one particular moment in the future to the level that some past moment, which was affected by the harm, would have been at but for the harm, or (2) increasing the happiness of some future moment, above what it otherwise would have been, to compensate for the harm (i.e., the decrease in happiness) to some past moment as a result of the harm. It seems pretty clear, however, that neither of these two ways (or other possible ways) of making sense of bringing a single future moment to some increased level as a remedy for a harm (i.e., decrease in happiness) to a single past moment, is what we are after.

Focusing on a decrease to only single moment and then focusing on an increase to only a single moment, regardless of how this is carried out, does not seem to fully capture the harms and remedies that we are after. It seems that we need to broaden our temporal focus beyond a single moment and beyond a pair of moments.

In line with my hypothesis that we need to broaden our focus beyond a moment or a pair of moments, I offer two additional options that capture extended periods of time. First, perhaps we are seeking to return a person's happiness level for his *whole future* to what it would have been if not for the harm. Second, perhaps we are seeking to return a person's happiness level for his *whole life* back to what it would have been if not for the harm.

These two temporally extended options seem to be much better candidates for what we are talking about when we talk about seeking to return a person's happiness level to what it would have been if not for the harm. Which one is more plausible? Given that we can't change the past, it seems that these two temporal accounts are quite similar, and they might even be identical for all practical purposes (i.e., they might give us the same prescriptions in all possible cases). Seemingly, whatever brings a person's happiness level for his future back to what it would have been if not for the harm, will also be what brings a person's happiness level for his whole life back to what it would have been if not for the harm. I will discuss later, in Part V, why this is not quite true, and I will at that time explore differences between the two accounts. For the time being, however, in light of the great similarity between these two accounts, I will treat them interchangeably. Further, for the sake of

simplicity, and since we cannot change the past, I will for the time being refer to both views as the view that considers the “happiness level one is at” to refer to the happiness level of a person’s *future* (and not of his *whole life*, which would also include his past).

What we seem to care about is the happiness level of a person’s future. Thus, the current hypothesis under exploration is that what we mean by returning a person to the happiness level that he would have been at if not for the harm is: First, we estimate the happiness level that a person had in store in his future before the harm occurred. Second, we look at the person’s life where the harm has occurred and estimate the happiness level that the person now has in store for his future. We then seek to return the happiness level of the person’s future in the second case to the happiness level of the person’s future in the first case, and we seek to do so by adding an amount of happiness to the person’s future in the second case that will bring about the result that the happiness level of the future in the second case is equally as good as the happiness level of the person’s future in the first case.

Before continuing this discussion, I now offer a brief aside about money and how this second imprecision that I’ve stated affects an account of happiness (regarding the temporal component of the analysis of “the level that a person is at”) in fact does apply to that analysis in the context of money as well.

### 3. An Aside About How the Imprecision Regarding the Temporal Component Also Applies to an Account of “the Level that One Was at” in Terms of Money

#### a. *A Similarity Between Happiness and Money with Respect to the Temporal Component*

Recall that, in the context of money (unlike in the context of happiness), it seems fairly easy to make sense of the notion of “returning a person to the level that he was at.” As I stated, it seems that in the context of money we can simply calculate a person’s financial position or “level” by summing his assets and liabilities and coming to a net sum of money that he has, and it seems that this constitutes the financial position or “level” that the person is at. Interestingly, however, upon further examination, it seems that the temporal characterization of what we actually mean by the phrase “returning a person to the happiness level that he was at” (i.e., referring to the happiness level of one’s whole future) is a characterization that symmetrically would apply to the phrase in the finan-

cial context. Just as in the context of happiness what we seem to care about is one's happiness *going forward*, it seems that what we care about in the financial context is one's financial capability *going forward*. Although it does seem that happiness and money are symmetrical in this case, I don't think that this means that I was wrong to say that the financial context could (generally) be calculated by looking at how much money a person has in the present. It seems that a person's financial capability for his future consists of future income plus his current amount of money owned. Further, for many financial harms, it is one's currently possessed money that is depleted. Thus, it seems that in most cases a person can be returned to the financial position that he was at (which I'm now saying we should understand as his financial position for his *future*) by merely returning his currently possessed money to the amount that it would have been if not for the harm.

While the focus of the following discussions will be happiness and not money, it is important to have clarified that in both contexts, when we talk about the notion in remedies of "returning a person to the position he was in" or "returning a person to the level he was at," this refers to making it the case that we are attempting to provide the person with a whole *future* of the same level of money or happiness that he would have had if not for the harm incurred.

It's also important to be clear that I'm not saying that the ubiquitous remedial notion of "returning a person to the position he was in" or "returning a person to the level he was at" is mistaken. It's not. It's just that it is a somewhat misleading term if one does not realize that it is shorthand. The goal of providing a remedy seems to be not exactly returning a person to the level that a person *was at before* the harm, but, rather, returning the level (be it in terms of happiness or money) of a person's *expected future* after the harm to the level of the person's *expected future* before the harm was incurred. This important clarification not only will pave the way for the discussions and findings later in this Article, but it is also worth taking note of in its own right.

b. *A Difference Between Happiness and Money with Respect to the Temporal Component, and the Beginnings of a Lead-in to the Third Imprecision Regarding Happiness*

Despite the fact that it seems that what we care about in both the money and happiness contexts is one's future, there is an important difference between money and happiness (and identifying this difference also begins to put us on notice about something re-

lated to the third imprecision in the context of happiness; it thus serves as a bit of a lead-in to that topic). We can seemingly calculate a person's financial position for the future by looking primarily at the present moment, whereas we cannot do this for happiness. (I've said that in the context of money we also must consider future income and expenses etc., but, leaving that aspect aside, looking at a person's current net financial assets will dictate how much money a person has for his future.) The inquiry into happiness, however, does not admit of the short cut of looking primarily at the present and determining how much happiness a person currently possesses that can be used as a store of happiness to be distributed over one's future years. The difference is that the money that a person will spend in his future can be possessed by the person now in the present, whereas the happiness that a person will experience in his future is not in any sense possessed by the person now in the present. Money can be collected and possessed before it is spent, but happiness does not have an analogous feature.<sup>35</sup>

Leaving behind this subsection's aside regarding money, however, I now return to the discussion of happiness and the hypothesis that the goal of a remedy is to provide a person with a future of the same happiness level that his future would have had if not for the harm incurred.

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35. While I think that the clarification that I've made about the "level a person is at" even in the money context is one that should be understood as one that applies temporally to one's future, I think that the observations in this paragraph about how current money (unlike happiness) can serve as a store for future spending helps perhaps explain what might have led to our typically using the shorthand that we do use in the context of money. Since the money that we possess at a single moment can actually represent the money that one will be able to spend in the future (or at least some portion of it, which in some cases might be a large portion of it), this means that in the money context there is less of a difference between one's situation for a single moment and one's situation for one's future. Therefore, in the money context (but not in the happiness context), there is good reason for using one's "financial position in the current moment" as shorthand for one's "financial position for the future." These notions are more closely tied together than my discussion might have made them seem, and the shorthand can be understood even if it is interpreted literally and not interpreted as shorthand. Because of the differences between money and happiness discussed in the textual paragraph that this footnote accompanies, however, using the current happiness level to refer to one's future happiness level is a maneuver that does not make sense unless one understands it purely as shorthand. It is this difference between money and happiness that originally led me above, in Part II.C.1, to state that while understanding the notion of the "the level that one was at" in terms of money is straightforward enough, it is much less clear how to understand this notion in the context of happiness, and, in particular, this is because the notion in the context of happiness is under-described and thus vague in various ways—three of which I have been and will be describing in Part II of this Article.

#### 4. The Third Imprecision: The Existence of Different Possible Ways to Aggregate the Happiness of Component Moments to Determine the Happiness of a Temporal Chunk of Moments

I've argued that the notion of "the level of happiness that one was at" is vague and under-described in two ways. First, we have not yet articulated a metric for quantifying happiness. Second, even if we were to articulate a metric for quantifying happiness, I argued that the notion of "the level of happiness that one was at" is vague and under-described because it did not articulate the temporal context that it applies to. In this past subsection, however, I argued that the temporal context that we have in mind is a person's future.

While this notion of bringing a person's happiness for the remainder of his life to the level that it would have been at if not for the harm seems like a straightforward notion, even this notion is not as precise as it might seem. Even if we have articulated a metric for quantifying happiness and even if we have determined that the relevant temporal context is the remainder of a person's life, the notion of a person's happiness level is still under-described.

Given the happiness level of a particular moment, and given the decision about which group of moments are the relevant ones (i.e., all of those in a person's future), we still have a question of what our aggregation mechanism or function is for assessing the value of the whole (i.e., the remainder of the person's life) given the value of the parts (i.e., the values of each of the moments in the remainder of the person's life). In other words, even assuming we have a way to quantify happiness at a particular moment, and even if we know which moments are the ones that are relevant, there is a question of what the best way is to quantify the happiness of a temporal chunk of life that includes many moments. How do we aggregate the happiness of the moments when assessing the happiness of a chunk of time that is composed of many moments? This type of a decision about how to determine the value of a whole always has to be made when one is trying to determine the value of a whole but one only has, as inputs, the values of the parts.

There are various aggregation mechanisms or methods that could be used. Perhaps the most straightforward option would be to use TU-type aggregation, which employs sum aggregation. According to this aggregation method, the value of a portion of a life is equal to the sum of the units of happiness that one experiences at each moment during the portion of life in question. Another option, however, would be to use AU-type aggregation. According to this aggregation method, the value of a portion of a life is equal

to the average of the values of units of happiness that one experiences at each moment during the portion of life in question. Hybrid combinations of AU-type aggregation and TU-type aggregation provide further possibilities. Further still, there might be some alternative functions for going from the value of the parts to the value of the whole that are neither AU-type aggregation, TU-type aggregation, nor even a hybrid of these two aggregation types. Perhaps some other function could be used.

In light of these different options, even if we have a metric for quantifying happiness at a particular moment, and even if we are operating within a framework of having a “person’s happiness level” refer to the temporal period that includes the remainder of a person’s life (which itself was not an obvious or foregone conclusion), it still would not be completely clear how one would quantify the happiness level of the remainder of one’s life. There are different options for what should be one’s aggregation function, and it is not obvious which is the correct one.

If, however, we are to have a sound theory of returning a person to the level he was at, it seems that we must answer all the questions I have raised, including the last one regarding which aggregation mechanism to choose. We seemingly cannot merely use vague terms and let our analysis stop there. It seems that we must be more precise: It seems that we must have an account that explains precisely what it is that we mean when we say “the level that a person was at.”

D. *Despite the Imprecision in the Account of Happiness Quantification, Private Law Remedies Appear to Still Do Just Fine and Get the Right Results*

If we are to have a coherent account of “the level that a person was at,” it seems that we need to answer the questions that I raised above. Further, as I say, it seems that a more precise account has not been offered. Despite this, however, it seems that the law might be doing just fine. Why is this? How is the law able to provide remedies that seem to bring a person back to the “position that he was in” or “the level that he was at” if these terms are vague, under-described, and lacking content?

It seems that the answer is that, in typical cases, we do not need to have a more precise theory in the ways I say we should, and this is because the choice of which more precise theory to offer does not have a bearing on the result in most cases. In other words, all of the more precise theories would prescribe the same result in most cases, and thus it does not seem to matter which of the more

precise theories we espouse. Further, it seems that it is this very fact—that the choice of a more precise theory seemingly does not affect our prescriptions—that has made it the case that we have not articulated a more precise theory. Cases don't seem to require that we be more precise, and if we aren't required to be more precise, it is both the case that (1) we might not realize that there is some lingering vagueness, and (2) even if we were to notice the lingering vagueness, we might not feel the need to put in the effort to be more precise than we need to be.

So how and why is it the case that there seemingly is usually no need to be more precise with our theory, and how is it the case that all of our potential theories would seemingly yield the same prescriptions in most cases? I will now show why this is the case.

### 1. Cases of Economic (Financial) Loss

The most typical cases (be they in contract, tort, or some other area in private law) involve a person suffering a harm that is purely economic—a financial loss. If a person's losses are merely financial, it seems that being compensated financially in the amount of the financial loss will put the person back to the happiness level he was originally at, regardless of which precise happiness theory we use.<sup>36</sup> This seems to be the case even though we do not even attempt to articulate a theory in terms of happiness (much less, a theory of happiness that is fully specific in the ways that I've discussed in the previous sections). Further, this seems to be the case even though we do not attempt to articulate (1) what the happiness level of the person was before the loss, (2) the happiness level of the person after the loss, or (3) the amount of happiness lost.

Consider, for example, a car with a suitcase in it. Suppose that the suitcase is removed from the car, but we then want to return the car to the weight it was when it contained the suitcase. In order to do so, we need not necessarily know the pre-removal weight of the car, the post-removal weight of the car, or even the weight of

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36. There are of course questions that can be asked about whether a party is truly made whole even when the loss is purely financial and the party is then compensated for the full financial amount. A party could still be (and in fact usually still is) worse off after the whole ordeal, and this could be for various reasons, including, for example, the hassle and stress and time spent in the attempt to get compensated for the loss (and, perhaps most significantly, the large portion of a plaintiff's judgment that goes to the plaintiff's attorney!). While these all are very important concerns, I leave these types of practical concerns aside for the purposes of the current discussion. While these concerns are very real, they are orthogonal to and do not bear on the topic being discussed here. Thus, I assume (counterfactually) that being compensated for a purely financial loss in the amount that was lost would indeed make a party whole.

the suitcase. Instead, we can avoid inquiries into these amounts by either putting the suitcase itself back in the car, or by putting something in the car that we have deemed to be of equal weight to the suitcase. (We could in various ways deem something to be the same weight of the suitcase without knowing what this weight is. Among these methods would be putting the suitcase and the new object on a balance to determine that they are the same weight—whatever weight that might be.)

Thus, in cases where the loss is only financial, it seems that any happiness theory that we might espouse would yield the same prescriptions. And regardless of which theory we espouse, giving the aggrieved party the money that he lost would bring the party back to the level of happiness at which he had been prior to incurring the loss.

## 2. Cases of Non-Economic Harms (e.g., damages for pain and suffering)

Not all cases have losses limited to financial losses, however. Some tort cases, for example, involve claims for non-economic damages such as pain and suffering (be these the only claims in a case or be they in addition to claims for financial losses).<sup>37</sup> Perhaps, one might think, these cases would require us to articulate an account of “the level that one was at” in terms of happiness—and perhaps even an account of happiness quantification that is fully specific in the ways that I’ve discussed in the previous Section. While it might seem *prima facie* as though this is the case, I do not think that it is in fact the case. Just as with the cases where losses are only financial, cases of non-economic harms do not seem to require us to choose among the theories of happiness quantification.

The difference between the case of non-economic damages and the case of economic damages is that in the economic case the loss has already been quantified in terms of money, whereas in the non-economic case it has not. But this, however, does not mean that we are confronted with any of the questions I’ve discussed

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37. It is of course also the case, however, that even cases of straightforward financial loss might in fact involve a loss of happiness more than simply the lost funds. After all, it seems *ceteris paribus* preferable never to lose one’s money than to lose it and be refunded later, especially in light of the fact that this might take considerable time as well as involvement in legal proceedings. Notwithstanding this important practical wrinkle, I will assume, for the purposes of my discussion, that the compensatory sums in purely financial cases do indeed make a party whole and also that the compensatory sums here in cases of non-economic damages also do indeed make a party whole.

above in terms of articulating a theory of happiness and in terms of how to precisify the theory of happiness. We need not articulate a theory of how to articulate or quantify happiness at a particular moment, and we also need not articulate a theory of how to quantify the happiness of a period of time consisting of many moments once we have happiness values for each of the time-period's component moments. The reason that we do not need to articulate these things is that we need not articulate (1) what the person's happiness level was before the loss, (2) what the person's happiness level was after the loss, or (3) how much happiness was lost.

Why is this? This is for the same reasons as in the purely economic case, and as illustrated by the example of the car and the suitcase in that context. Here, we need only figure out what the monetary value of the lost happiness is.<sup>38</sup> (In the context of money, we needed only figure out how much money was lost, or to put it in a parallel—but more awkward—form: In the context of money, we needed only figure out what the monetary value of the lost money was.) Since the damages measure is an economic one even in the case of non-economic harms, we need only determine how much money it will take to bring the person back to the happiness level that he was at (or, similarly, how much money it will take to bring the person the amount of happiness that he had lost). We need not articulate how many units of happiness this happiness transfer amounts to, and we also need not articulate what levels of happiness the person was at before and or after the loss.

Interestingly, even if the remedy in court were non-financial and amounted somehow to a transfer of happiness in some other way, it might still be that we could avoid the various above questions. It could be that we would then simply need to somehow do something akin to putting the happiness loss on one side of a balance (i.e., a "happiness balance") and figure out what would even the balance if it were put on the other side, and then give the plaintiff whatever this is. There are further questions about whether a maneuver of this sort actually would amount to determining a measure of happiness and thus determining what amount of happiness was lost (because it is not immediately obvious what would consti-

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38. For the purposes of this discussion, the "we" who is figuring out the monetary value of the lost happiness could be anyone. It is meant to refer to anybody at all who attempts to estimate how much money the correct amount is. For example, an estimate of this sort could be made by the aggrieved party himself, by the courts, or by anybody else whatsoever. Of course, the more that a person knows about the facts of the situation and about the facts about the aggrieved party, the more likely that it probably is for one's estimate to be accurate. For further discussion about questions related to how this estimate of the correct compensation amount is made, see Part V, *infra*. For further discussion about questions related to *who* should be making this estimate for the purposes of private law, see Part V, *infra*.

tute the determination of a happiness measure, and the balancing maneuver just mentioned very well might implicitly amount to the determination of a happiness measure), but I will leave these further questions aside here.

In sum, even in cases of non-economic harms, despite it perhaps seeming as though we might need to articulate an account of happiness (and perhaps even an account of happiness that is precise in the ways discussed in the previous Sections), it turns out that we can avoid these questions. The only way in which cases of non-economic harms differ from cases of economic harms is that they require us to determine what the financial equivalent is, for an aggrieved party, of the non-economic loss in the case. This may not be an easy determination to make, but it nevertheless does not confront any of the further questions associated with happiness quantification.

#### E. *Summary*

The law employs the notion of returning a person back to the “position that he was in” or “the level that he was at,” but I have argued that these terms are vague, under-described, and lacking content. Despite these notions not having specific meanings, however, it seems that courts are still able to do just fine as is. They are seemingly able to successfully bring it about that parties are brought back to the “position that he was in” or “the level that he was at.” How is it that the courts are able to pull off this magic trick and bring it about that parties are brought back to the “position that he was in” while avoiding the underlying questions of how to articulate a coherent account of these notions? As the above discussion has shown, the law seemingly can avoid these underlying questions because the choice of which more precise theory to offer does not seem to have a bearing on the result in most cases. In other words, all the more precise theories seemingly would prescribe the same result in most cases, and thus it does not seem to matter which of the more precise theories we espouse.<sup>39</sup>

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39. Although I will argue later in this Section and in the remainder of the Article that we (i.e., the law) cannot, after all, avoid answering all of the questions about how to precisify our account of happiness and of the “the level that a person was at,” at this point I am arguing that it certainly seems *prima facie* (and even after giving the topics here some thought) that we *can* avoid answering the questions about how to precisify our accounts, and this seemingly is because all of the more precise accounts we might have seemingly would not affect any prescriptions. They would yield the same results in all situations, and thus, there’s a sense in which it seems as though the differences between the various possible more precise accounts are smoothed over, like with a blanket of snow, obscuring and removing all differences that existed between the various sub-accounts and thus removing any need to

Despite these findings, however, the underlying questions remain, and three types of thoughts come to mind regarding them. First, a theoretical account of the underlying questions is valuable and interesting in itself. How do we measure and quantify happiness—in the moment and over time? Second, could it really be that the law can adequately return someone to the “level that they were at” prior to a harm, without knowing either the magnitude or the

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choose which precise account to espouse. It seems that money is smoothing over any differences between happiness theories (i.e., differences with respect to how to quantify the happiness of a moment, and also differences regarding temporal questions, and further, it could even maybe seem as though money can smooth over AU and TU even in the context of different-numbers cases). As discussed in the suitcase example, above, it seems that one can simply figure out how much money to give a plaintiff and that by focusing on money in this way we can smooth over the happiness questions.

One might think at this point, though, that there indeed is a context, similar to those that I’ve been discussing, that might avoid this smoothing over, and this context is the context of gains (i.e., benefits), as opposed to losses (i.e., harms). Or, to put it this into the category of a private law topic, this is the context of unjust enrichment. It might seem that the context of returning a person *back down to* the level he was at rather than returning a person *back up to* the level he was at would avoid the smoothing effect. It might seem as though the gain to a person’s happiness due to, say, hearing a free violin concert in the subway, is something that, unlike a harm, would have to be quantified in an amount of happiness that was gained and we thus could not sidestep the question of how to quantify happiness—whereas a harm (of, say, having one’s car stolen) would be able to sidestep the happiness by just employing money values.

Although it might seem as though the context of gains (and unjust enrichment) might be relevantly different from the context of harms and might thus require us to confront the happiness questions, this is not the case. The mistake was to compare a case of non-economic gains to a case of economic losses. Both gains and losses, when appropriately compared, are the same for the purposes of this discussion. Both gains and losses can be in economic values or in non-economic values. Cases of economic gains and losses allow the same smoothing over as each other (and as discussed in the first illustration of the suitcase example). So too, cases of non-economic gains and losses allow the same smoothing over as each other, and, as discussed in the second illustration of the suitcase example, non-economic cases involve smoothing over of the happiness questions just as the economic cases do. The difference is that in the economic cases we just give the amount of money lost back, whereas in the non-economic cases we have to put on one side of a balance the happiness or unhappiness that was caused by the event, and on the other side, an amount of money to be given or taken (depending on whether it’s a gain or loss) that will cause happiness or unhappiness that balances the scale. As discussed in the second instance of the suitcase example, though, non-economic cases still allow us to sidestep the happiness questions, because we do not need to do anything to quantify the happiness in any way. Instead, what we do is simply put the happiness or unhappiness on a balance to see what amount of money it seems to be equivalent to.

Importantly, however, all of the above analysis applies just as much to the context of gains (or benefits) as it does to losses (or harms). Thus, even if it might have seemed as though the context of gains would force us to confront questions about happiness that we could sidestep in the context of losses, this is a mistake. We seemingly can still sidestep these questions in both contexts.

Although I conclude here that the context of gains is not an area that prevents us from sidestepping all of the happiness questions, and it thus seems that we still might be able to sidestep them all, as I explain later in this Section and throughout the remainder of the Article as a whole, it turns out that there indeed is a context that prevents us from being able to sidestep all of the questions. It’s just that this context is not the context floated in this footnote (i.e., gains)—though, the context I will say *does* prevent us from sidestepping all of the questions could apply in the context of gains, just as it could in the context of losses.

harm *or* the “level they were at” prior to that harm? After all, it is an understatement to say that the conjunction of the following claims is a bit mysterious: (1) in providing remedies, we seek to bring a person back to the happiness level that he was at before the harm was incurred, yet (2) we are unable to articulate or quantify what happiness level a person was at before the harm was incurred, and (3) we are unable to articulate or quantify how much happiness a person lost due to the harm incurred. Third, it seems that even if the law could avoid answering these questions in most cases, perhaps there could be cases where it must confront them.

As I will now show, there indeed is an important set of cases where the law indeed must confront these theoretical questions.

Three underlying imprecisions about the notion of “the level of happiness that one is at” have so far been identified: (1) imprecision regarding quantifying happiness at a particular moment, (2) imprecision regarding the temporal component of quantifying happiness, and (3) imprecision regarding which aggregation mechanism to employ for quantifying the happiness of a period of time composed of component moments (if the time-period in question is composed of more than just a single moment). Going forward, I proceed as follows with respect to these three questions.

I assume that the answer to the temporal question (imprecision number two) is that what we care about is the level of happiness in a person’s future. I will in Part V, scale back this assumption and probe the temporal question further. Until then, though, I will assume that the answer to the temporal question is that what we care about is the happiness level of a person’s future.

Part III addresses imprecision number one (which is about quantifying happiness at a particular moment). It concludes that, even after a substantive exploration of the topic (i.e., even after an exploration that is more in-depth than the brief introduction in Part II), the law seemingly can avoid this question. This is because (a) a metric for quantifying happiness at a moment can be articulated, and (b) all metrics seemingly *provide the same prescriptions*. This question about whether the law can avoid imprecision number one does get revisited in Part V in a circumscribed discussion, but Part III constitutes my general conclusion on the matter.

Part IV then addresses imprecision number three (regarding aggregation mechanisms). I conclude that law *cannot* avoid answering this question, because there are cases where *our choice of aggregation mechanism will affect our prescriptions*. This conclusion then paves the way for the analysis in the later Parts in this Article.

III. WHY WE DO NOT NEED TO SETTLE ON A PRECISE METRIC FOR  
QUANTIFYING HAPPINESS AT A PARTICULAR MOMENT: I.E.,  
WHY OUR CHOICE OF A METRIC DOES NOT AFFECT  
OUR PRESCRIPTIONS IN THE LAW

Here in Part III, I address the question of how to quantify the happiness level at a particular moment. More specifically, I address whether the law can in fact avoid addressing this question, as it seemed in Part II that the law might. It turns out that the law *can* avoid this question. This is because: (1) despite the fact that we as a society do not have a commonly used metric for quantifying the happiness of a moment of experience, this does not pose a problem for the law because we can in fact articulate a metric to quantify the happiness of a moment of experience, and (2) not only does the lack of a metric not pose a problem for the law, but it turns out that we do not need to articulate any specific metric, because it doesn't matter for the purpose of any prescriptions or assessments which metric we adopt. The results would be the same regardless of which metric we choose to employ.

Thus, for these reasons, the law can avoid addressing the question of how to quantify happiness at a particular moment.

A. *Articulating a Metric (i.e., Unit) for Measuring Happiness Can Be Done and It Is Not Importantly Different from Articulating a Metric for Physical Properties Like Length and Mass*

While it might initially seem different, the task of defining a metric (i.e., a unit) for quantifying the happiness level of a particular moment is in many ways the same as the task of defining a metric for quantifying any other property, such as mass or length. In each of these cases, the initial choice of a unit to be used to measure the property is arbitrary.

Supposing, for example, that the “foot” was the first unit of length, if one were to ask how long a “foot” was, one could do nothing other than point to the physical object (perhaps King George’s left foot) that was used as the benchmark for this quantity. This choice of the length of the unit (and the name of the unit) would be arbitrary, and all other quantities of length would be made in terms of relativistic statements making comparisons to this unit (for example, a mile is equal to 5,280 feet).

This is precisely the same type of endeavor that could be used to define a unit of happiness. For example, I could have a sip of juice and then define the happiness of this sip of juice (and perhaps the “typical sip of juice”) as the unit for happiness—namely what I am

experiencing when I have this “typical sip of juice.” Just as with the unit for length, the unit for happiness is arbitrary. And just as is the case with length, one can then make comparisons between quantities of the property (be it lengths or be it happiness) and introduce new units in statements relative to the arbitrary unit. For example, one could say that the steak meal one had was “equal to seven ‘sips of typical juice.’” One could even then define a unit called “the typical steak meal” as being equal to seven “sips of typical juice.”

Of course, there are important ways in which defining a unit of happiness (as, for example, a “typical sip of juice”) is different from defining a unit of length (as, for example, a foot). One such difference relates to the observability of the quantities in question, and the other (related) difference relates to how assessments comparing relative quantities are made, and I’ll mention both in turn.

The difference relating to observability of the quantities in question has two components, an interpersonal one and an intrapersonal one.

With assessments of length, a person can easily demonstrate the length of something to someone else by visually showing how the length of the object compares to the length of a benchmark. For example, one can place a ruler next to a piece of paper to show that the length of one of the sides is eleven inches. This enables another person to observe that the side is eleven inches. Not all measurements of length would be as simply demonstrated as this, but demonstrations of length are similar in how they can be observed by a second person. If, on the other hand, I say that the experience I just had was “eleven typical sips of juice” of happiness, there does not seem to be any analogous way for someone other than myself to observe or verify this.

Further, this difference between measurements of happiness and of length does not only apply to the gap between one person and another person—it also applies to the gap within a single person, between the person at one time and the same person at a later time. If a person, in year one, measures a table and determines that it is nine feet long, this same person can observe again in year two the determination that was made in year one. If, however, a person makes a happiness measurement of his experience of a particular meal on an evening in year one, there does not seem to be a way that even this same person can re-observe this assessment in year two. The person in year two may of course remember the experience that he had had in year one, but this would not constitute

a direct observation of the experience in year one.<sup>40</sup> Thus, not only are there differences between the observation of measurements of length and of happiness in an interpersonal context, but there also are differences between measurements of length and of happiness in an intrapersonal context.

There is another way in which measurements of length and measurements of happiness are different, and it relates to the ways (discussed in the foregoing paragraphs) in which there are differences in the context of observability. This additional difference concerns how assessments comparing relative quantities are made. In the context of length, suppose that we have already defined the basic unit as the “foot.” We can then determine that something is three feet long if it is equal in length to an object that consists of three one-foot-long objects that are placed one after each other length-wise with the objects flush against each other. Thus, with length, we can determine how many feet long an object is by essentially stacking objects of shorter lengths together and adding up the lengths of the shorter objects to determine the length of the longer object. In the context of happiness, however, while perhaps this can be done, it is much less clear how this works. Certainly, there is no physical placing of one experience spatially next to another. Perhaps the experiences are somehow hypothetically superimposed. How this is done is an interesting question and it is far from clear. This is not to say that it cannot be done in the happiness context, though. Surely it can be done, and surely it is done all the time. After all, we engage in practical reasoning and decision making all the time that show that we can weigh the relative goodness of experiences. We at the very least can see this from revealed preference, but there is also no reason to think that we cannot also make the comparisons about happiness experiences themselves. It is clear that we do make these comparative assessments. How exactly these comparative assessments are made, though, is not completely clear, and it seems that even if we use a mechanism that bears analogies to the mechanism in the context of length, it will be a mechanism that is quite different.

Despite the clear differences between the measurement of length and the possible measurement of happiness, there are also key similarities. Importantly for our purposes, there is no reason to think that we cannot articulate a metric for quantifying happiness or that happiness cannot be quantified. Although properties like length and happiness have key differences, they still are similar in

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40. Many interesting questions arise in the context of intrapersonal comparisons and of memory of past experiences, but these are beyond the scope of this Article, so I will leave them aside here.

that a similar approach can be used to provide a metric for quantifying them.

Despite the fact that there is no theoretical difficulty with articulating a metric for quantifying happiness, this does not mean that there are no challenges practically. Various difficulties exist in explaining or showing, even to oneself, what one “sip of typical juice” of happiness is, and this provides us with difficulties not only with conveying to oneself or others how much happiness an experience had, but it also makes it particularly difficult to attempt to make assessments of the quantities of happiness being experienced by other people—whose conscious experience we do not and never did have access to. Despite these being difficulties, however, these difficulties are mere practical difficulties. They, at least at the time being,<sup>41</sup> might make the unit of happiness one that is not as useful as we might like, but these difficulties do not make it the case that we are unable to define a unit of happiness.<sup>42</sup> While we do not currently in our society<sup>43</sup> have any single commonly used or well-established metric for quantifying happiness at a particular moment (as we do in fact have for properties like length), there is no theoretical reason why we cannot create and develop a single commonly used and well-established metric. The obstacles are only practical.<sup>44</sup>

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41. It seems quite likely that our (practical) ability to quantify happiness will drastically improve with technological developments in the years to come.

42. Interesting further questions abound, but the current discussion will have to suffice for the purposes of this Article.

43. Although the United States does not have a single commonly used or well-established metric for quantifying happiness, some other countries do employ metrics for quantifying happiness. Consider, for example, Bhutan. Bhutan employs a notion called “gross national happiness,” instead of the economic indicator “gross national product,” and the details of how the “gross national happiness” metric works are readily accessible online. See GROSS NATIONAL HAPPINESS COMMISSION, <https://www.gnhc.gov.bt/en/> (last visited Feb. 14, 2020). Bhutan’s system does not purport to quantify happiness at a particular moment, and in that sense it differs from the type of metrics I am discussing in this Article. Notwithstanding this difference, however, Bhutan’s system is still a metric for quantifying happiness. Further, we could extrapolate from Bhutan’s system to articulate a version of that system that does boil down to a metric that quantifies happiness at particular moments.

44. Some people might disagree with me on this point. For example, some are of the view that not all experiences necessarily are commensurable in terms of their goodness level or happiness level. For example, some might think that the experience of listening to Bach is different in kind and not just in magnitude from the experience of having a sip of juice, and thus there is no single happiness scale by which we can measure experiences. Many philosophers, including John Stuart Mill and James Griffin, have espoused positions of this sort. See, e.g., John Stuart Mill, *Utilitarianism*, in THE BASIC WRITINGS OF JOHN STUART MILL (J. B. Schneewind & Dale E. Miller eds., 2002), JAMES GRIFFIN, *WELL-BEING: ITS MEANING, MEASUREMENT AND MORAL IMPORTANCE* (Oxford: Clarendon Press, 1986). In my view, however, even if certain experiences might appear, prima facie, to be incommensurable in terms of goodness or happiness, they can indeed still be compared and a single scale can indeed be implemented. In my view, we can infer commensurability and a single scale by appealing to revealed preference—observing people’s choices when confronted with choices among the allegedly incommensurable experiences.

B. *We Need Not Articulate a Metric for Quantifying Happiness of a Moment, Because Regardless of What Metric We Choose, Our Prescriptions Will Not Be Affected*

Not only was it a key point that we can in fact articulate a metric for measuring the happiness of a particular moment, but there is a second key point.

What matters for our purposes is simply that a metric can be articulated. We do not need to actually articulate any particular metric for happiness. The reason for this is that, regardless of what the metric is, we seemingly<sup>45</sup> will have the same prescriptions. The prescriptions will be the same both for questions related to quantifying the happiness in a particular moment and for questions related to quantifying happiness in a period of a person's life that is composed of component moments. Therefore, and importantly for our purposes, the prescriptions will be the same for questions addressed in private law remedies, and the choice of which metric to use will not affect prescriptions in any direction. It does not matter what the unit is that is used for happiness in a given moment.

The reason for why the choice of unit does not matter—and for why only the fact that a unit *can* be articulated is what matters for these questions—can be seen by exploring a property such as length. Our reason for why we need not articulate a unit and for why it is only important that a unit *can* be articulated is the same as the reason that in doing an analysis about the concept of length, it does not matter whether the basic unit is the meter or the foot. Questions in, say physics, can be addressed with either system of measurement. What matters is simply that there exists a system of measurement that is coherent.

For the concept of happiness, the fact that a metric can be articulated means that there is a system of measurement that is coherent. In fact, the metric employing “a typical sip of juice” and “a typical steak dinner,” which I articulated above, would itself suffice as a coherent metric. We need not develop any metric further than this, because regardless of which metric we articulate, it will not affect any of our prescriptions, and this is for the same reasons as the fact that the laws of physics work equally well regardless of whether we use feet or meters as our basic unit of length.

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45. I will address below, in Part V (in a discussion of the existence or non-existence of “zero points” and what the implications of this question are for the plausibility of AU-type and TU-type aggregation), why it is not quite the case that we can leave this question aside. Despite that (fairly circumscribed) discussion, however, my conclusion here in Part III (that different choices of metrics for quantifying happiness in a moment do not affect our prescriptions) does constitute my general conclusion on the topic.

### C. *Summary*

Despite the fact that we as a society do not have a commonly used metric for quantifying the happiness of a moment of experience, it turns out that this does not pose a problem for private law remedies and the goal of bringing a person back to “the happiness level that he was at.” As I’ve shown, we can in fact articulate a metric to quantify happiness, and the way in which we could do so is very similar to the way in which we articulate metrics for physical properties such as length and mass.

Not only does the current lack of a metric not pose a problem for private law remedies, but it turns out that we do not need to articulate any specific metric for quantifying the happiness of a moment. This is because, as with the case of length, it doesn’t matter for the purpose of any prescriptions or assessments which metric one adopts. The results will be the same regardless of which metric we choose to employ.

For the foregoing reasons, I will now leave aside the question of how to quantify the amount of happiness in a particular moment. I will simply assume not only that we can articulate a metric for quantifying happiness at a particular moment, but that we in fact already have such a metric that is commonly used, and that we can employ this metric to determine how much happiness exists at a particular moment of a person’s conscious experience.

In Part V, I will briefly scale back this assumption and probe further some questions related to how we quantify happiness of a particular moment, but, leaving aside the purposes in that specific Part, I will assume throughout the remainder of this Article that we need not further probe or question how we can or do quantify the happiness of a particular moment.

## IV. WHY WE DO NEED TO BE MORE PRECISE IN ARTICULATING AN AGGREGATION MECHANISM: I.E., WHY THE CHOICE OF AGGREGATION MECHANISM CAN AFFECT THE LAW’S PRESCRIPTIONS

### A. *Introduction*

Two of the three imprecisions of the phrase “the happiness level that one is at” have now been addressed and resolved. I already determined<sup>46</sup> (preliminarily at least) that “the happiness level that

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46. See *supra* Part II.

one is at” refers to the happiness level of one’s future (as opposed to the happiness level at a single particular moment, for one’s whole life, or for some other temporal (or non-temporal) grouping of moments in a person’s life). I have now also addressed<sup>47</sup> the question of articulating a metric for quantifying the happiness at a particular moment, and I have argued that we can leave this question aside and proceed as though we not only can articulate such a metric, but that we in fact already have such a metric that is commonly used.

I thus can now address the most important topic of this Article: the question of what our aggregation mechanism should be—i.e., what function we should use to derive the happiness value of a portion of a person’s life, given (and taking as inputs) particular happiness values of each of the component moments in this time period.

In Part II, above, I argued that it seemed as though the law’s failure to choose an aggregation mechanism for determining the happiness level of a person’s future doesn’t affect or interfere with the law’s ability to provide a person with a future of the level it would have been if not for a harm incurred. It seemed as though we could avoid determining what the happiness level of a person’s future would have been if not for the harm and what the happiness level of a person’s future would be after the harm if there were no remedy. Similarly (and relatedly), it seemed that we could avoid determining how much happiness the person lost as a result of the harm.

It turns out, however, that it only seemed that we could avoid answering the question of which aggregation mechanism to choose. It turns out that there are situations where we will need to answer this question. Although it seemed as though the choice of aggregation mechanism would not affect our prescriptions in any cases, it turns out that there are some cases where the choice of aggregation mechanism will affect our prescriptions. Because of this, we are unable to avoid answering the question of which aggregation mechanism is most plausible. This Part shows why this is the case.

I begin by (re-)introducing “different-numbers problems,” and I explain that it is these types of cases, if we in fact confront them in the law, that would require us to choose which aggregation mechanism is most plausible. I then explain how private law remedies could confront and in fact do confront different-numbers cases. As I explain, the situations where private law remedies confront dif-

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47. See *supra* Part III.

ferent-numbers cases are cases where a person incurs a harm that results in the person's life being shortened (and this shortening of a person's life could be brought about either by an immediate death or by a death, which, though non-immediate, nevertheless will result in a person's life being shorter than it otherwise would have been).

B. *Types of Cases Where We Will Have to Probe Further: "Different-Numbers Cases" (as Distinguished from "Same-Numbers Cases")—and Why They Are Tricky*

1. "Different-Numbers Cases"

The types of situations that require us to choose which aggregation method to espouse are cases that I will call "different-numbers cases," and these are to be distinguished from what I will call "same-numbers cases." Both different-numbers cases and same-numbers cases have the following features. Both cases are cases where we are comparing two (or more than two, but for simplicity's sake, I'll focus on two) possible states of affairs, both of which contain a number of parts (or "components"), and in both of which the goodness or value of each of the whole states of affairs is a function of the goodness or value of each of the components that exists in that state of affairs. These types of cases can arise in various contexts where the components are various different types of things, but the two main types are (1) cases where a component is a person's life and where the whole is, say, a world, and (2) cases where a component is a single conscious moment that a person experiences and where the whole is, say, a person's whole life.<sup>48</sup> Further, to keep things simple, I'll focus in particular on the second of these two types of cases—cases where the components in question are single conscious moments of a person. Thus, in the cases that I'm considering, we're comparing the goodness of two states of affairs, and each state of affairs is made up of nothing oth-

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48. Although these two examples involve a world (the whole) that is made up of people (the components) and a person (the whole) that is made up of conscious moments (the components), all sorts of other possible same-numbers and different-numbers cases exist. For example, to name just a few other types of data that could give rise to different-numbers and same-numbers cases: They could involve things such as wins and games played for a sports team, or shots made and shots taken by a player in basketball, or numbers of pieces one has in a game of checkers and whether the pieces are kings or not. In this Article, however, I will focus on cases where the whole is a person's life (or a portion thereof), and where the components are his moments of conscious experience.

er than conscious moments experienced by a person.<sup>49</sup> Further, the goodness or value (here, happiness level) of a whole state of affairs is a function of the goodness or value (here, happiness level) of its components. The foregoing features are what same-numbers cases and different-numbers cases have in common.

The way in which same-numbers cases and different-numbers cases differ is (perhaps unsurprisingly in light of the names I've given them) that in same-numbers cases, the numbers of components in the two states of affairs being compared are the same, whereas in different-numbers cases, the numbers of components in the two states of affairs being compared are different.

Taking as our two basic aggregation methods the two aggregation methods that I introduced in Part II, TU-type aggregation and AU-type aggregation, we can now see that while same-numbers cases will not require us to choose between these two methods, the different-numbers cases will require us to do so.

Let's first consider a same-numbers case. Take, for example, a case where a state of affairs, call it s1, is made up of a person named Bill's future. Suppose that s1 involves ten conscious moments. Each conscious moment is at a happiness level of seven. Suppose that a different state of affairs, s2, is a different possible future that might be in store for Bill. It also involves ten conscious moments, but due to a harm that befell Bill, all of the conscious moments in s2 are at a happiness level of five. In assessing the happiness levels (or levels of goodness or value) of s1 and s2, and in assessing whether s1 or s2 is the state of affairs with a higher happiness level (or a higher level of goodness or value), we need not choose between AU-type aggregation and TU-type aggregation. According to both aggregation methods, the happiness level of s1 is higher than that of s2, and by the same ratio: According to AU-type aggregation, the happiness level of s1 is 7 and the happiness level of s2 is 5, and according to TU-type aggregation, the happiness level of s1 is 70 and the happiness level of s2 is 50. Further, in same-numbers cases, it will always be the case that AU-type aggregation and TU-type aggregation provide the same determination of which state of affairs is better and provide the same ratio by which this is the case. The reason for this is simple: the AU-type aggregation value for a state of affairs is equal to the total number of units divided by the number of components, and since the same number of components exist in both states of affairs in a same-numbers case, the AU-type aggregation value for each state of af-

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49. Or, more specifically, the two states of affairs are made up of *nothing that's relevant for our inquiry* other than conscious moments experienced by a person. I'm not denying that other things exist in this state of affairs, such as trees, air, buildings, etc.

fairs will be arrived at by taking the TU-type aggregation sum in each case and dividing it by the same number in each case. Thus, if a TU-type happiness level number for  $s_1$  is higher than a TU-type happiness level number for  $s_2$ , and by a ratio of, say, seven to five, dividing the TU-type happiness level numbers for  $s_1$  and  $s_2$  by the same number<sup>50</sup> preserves both the fact that the  $s_1$  number is bigger than the  $s_2$  number, and the ratio by which this is so. In light of this, in same-numbers cases, we need not make a choice between espousing a TU-type aggregation mechanism or an AU-type aggregation mechanism.

In different-numbers cases, however, we generally do have to choose between espousing TU-type aggregation and AU-type aggregation, and this is because the two aggregation methods do not always provide the same assessments of states of affairs. Take, for example, two possible futures for Bill. In  $s_3$ , which is identical to  $s_1$  (above), Bill's future includes ten conscious moments, each of which is at a happiness level of seven. In  $s_4$ , however, there are fewer moments in Bill's future, because Bill dies sooner. In  $s_4$ , however, Bill has a higher level of happiness in the moments that he does have. In  $s_4$ , there are only five conscious moments, but each one is at a happiness level of ten. Given these two possible states of affairs, which one has a higher happiness level (or, stated slightly differently, which state of affairs has *more* happiness? Or, stated in another way, which of these two states of affairs is better?) One's answer to this question will depend, crucially, on whether one espouses TU-type aggregation or AU-type aggregation, because they will not say the same thing. According to TU-type aggregation, the happiness level of  $s_3$  is 70, and the happiness level of  $s_4$  is 50. According to AU-type aggregation, however, the happiness level of  $s_3$  is 7, and the happiness level of  $s_4$  is 10. Thus, TU-type aggregation says that  $s_3$  has a higher happiness level than  $s_4$ , but AU-type aggregation says that  $s_4$  has a higher happiness level than  $s_3$ . While in this case TU-type aggregation and AU-type aggregation have differing assessments of which state of affairs has a higher happiness level, this is not always the case. Even in many cases where they do not have differing assessments of which state of affairs has a higher happiness level, though, they still may provide different assessments, because even if both say that one state of affairs is the better one, one of the mechanisms might say that the happier state of affairs only has slightly more happiness,

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50. This holds true because the number of components will always be a positive number. Also, though the following feature is not required for the statements in question to hold true, it's worth noting that the number of components will also always be a whole number.

whereas the other mechanism might say that the gap in happiness level between the two states of affairs is huge.

These examples illustrate that different-numbers cases require us to choose between TU-type aggregation and AU-type aggregation. It's important to note, though, that these different numbers-cases need not be comparisons between states of affairs where the components are conscious moments of a person's life. Instead, perhaps, the numbers in the examples above could be applied to an example where the numbers represent years of life in one's future (which, of course, could also be considered to be shorthand for, say, one billion conscious moments). Further, leaving aside the context where a state of affairs consists of one life, similar examples can be provided where the state of affairs consists in the whole population and where the components (of which there are different numbers in the two states of affairs) are the people alive in each possible population. Similarly, in different-numbers cases in these contexts, we need to choose between AU-type aggregation and TU-aggregation.

## 2. Why "Different-Numbers Cases" Are Tricky

The choice about which aggregation mechanism to espouse is not an easy one to make, and this is because all possible views are seemingly afflicted by devastating counterintuitive implications. I address the question of which aggregation mechanism to espouse in much greater depth elsewhere,<sup>51</sup> but I here provide a brief preview of some of the seemingly devastating counterintuitive implications that appear to render TU-type aggregation and AU-type aggregation implausible (despite their otherwise attractive features). Consider the following points that show some of the main difficulties that afflict TU-type and AU-type aggregation. First, as to TU-type aggregation.

Despite the prima facie plausibility of TU-type aggregation, it seems as though there are some considerations that cast doubt on

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51. See Pressman, *supra*, note 9; see also Michael Pressman, *A Defense of Average Utilitarianism*, 27 UTILITAS 389 (2015); see generally Gustaf Arrhenius, *An Impossibility Theorem in Population Axiology with Weak Ordering Assumptions*, in PHILOSOPHICAL CRUMBS. ESSAYS DEDICATED TO ANN-MARI HENSCHEN-DAHLQUIST ON THE OCCASION OF HER SEVENTY-FIFTH BIRTHDAY 11 (Rysiek Sliwinski ed., 1999); GUSTAF ARRHENIUS, *FUTURE GENERATIONS: A CHALLENGE FOR MORAL THEORY* (2011); Gustaf Arrhenius, *The Impossibility of a Satisfactory Population Ethics*, in 3 DESCRIPTIVE AND NORMATIVE APPROACHES TO HUMAN BEHAVIOR 1 (H. Colonius & E. Dzhafarov eds., 2011); JOHN BROOME, *WEIGHING LIVES* (2004); Parfit, *supra* note 13; LARRY S. TEMKIN, *RETHINKING THE GOOD* (2012); Thomas Hurka, *Value and Population Size*, 93 ETHICS 496 (1983); Jeff McMahan, *Problems of Population Theory*, 92 ETHICS 96 (1981).

the plausibility of TU-type aggregation. Consider the following two (similar) thought experiments.

First, consider the “The Single-Life Repugnant Conclusion.” If TU-type aggregation is the correct measure for assessing the goodness of a life, then the following is an implication of this view: for any life of however many moments, each of fantastically high happiness level, there is a better possible life that exists that is composed only of moments (as long as there are enough of them) of a positive value, where that value is so infinitesimally small that a person is almost indifferent to being alive. At every moment, this person would be just the slightest notch above the happiness level at which one would prefer to not be alive. Nevertheless, TU-type aggregation implies that this would be better than the shorter life wherein every moment is fantastically happy, because if there are enough moments of the positive yet tiny value, they will outweigh the number of units of happiness in the shorter life, despite all the moments in the shorter life being of a fantastically high happiness level. This conclusion is thought to be repugnant, though, and thus the fact that this is an implication of TU-type aggregation provides some reason to think that TU-type aggregation cannot be correct.<sup>52</sup> It elicits the intuitions that there is at least some importance of and relevance of the happiness level that one experiences at the different moments of one’s life and that everything does not boil down to the total number of units of happiness experienced.

While this thought experiment was couched in fairly abstract terms and also in terms of a person whose moments of experience are at such a low level that they are just a notch above the level at which the person would prefer not to be alive, I can offer an additional thought experiment that elicits the same intuitions, but which is slightly more applied and which does not necessarily employ a person being quite so close to the level where he would prefer to not be alive. This thought experiment, Haydn and the Oyster, asks: would one prefer to have the life of the composer Haydn, who lives a good life and dies at the age of 75, or would one prefer to live a two-thousand-year life as an oyster?<sup>53</sup> This thought experiment, like the Intra-life Repugnant Conclusion, is meant to elicit the intuitions that TU-type aggregation cannot be correct, and that there is at least some importance of and relevance of the happiness level that one experiences at different moments of one’s life and

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52. See TEMKIN, *supra* note 51, at 119.

53. This thought experiment originated with Roger Crisp. See ROGER CRISP, *MILL ON UTILITARIANISM* (1997).

that everything does not boil down to the total number of units of happiness experienced.

Second, as to AU-type aggregation.

Despite there being reasons to support AU-type aggregation, there are also reasons to find that AU-type aggregation is not plausible.

The main problem with AU-type aggregation is that, while it seemingly gets the right answer in the case of the single-life repugnant conclusion and Haydn and the oyster, it is susceptible to a similar argument that shows that the implications of espousing AU-type aggregation are quite unpalatable. According to AU-type aggregation, the goodness of a life is determined by the average happiness of the moments in the life, and it does not matter how long or short a life is. This means that given, say, a life that is 80 years long and where each moment is at level 8, each of the following lives, which is made up of moments of happiness level 8.01, is a better life than the one that is 80 years long: A life of level 8.01 that lasts twenty-five years, a life of level 8.01 that lasts ten years, a life of level 8.01 that lasts one year, a life of level 8.01 that lasts for one day, a life of level 8.01 that lasts for one minute, or even a life of level 8.01 that just consists of one single conscious moment. That each of these lives would, according to AU-type aggregation, be better than the one that is at a level of 8 and lasts for 80 years, will for many people be highly unpalatable.

Further, another implication of AU-type aggregation is that, if one's future would be of the same happiness level as one's average level of happiness so far, the shortening of one's life would not harm a person at all. This is an implication that for many people will be highly unpalatable, and, in fact, it was the intuition that a person can be harmed by having his life shortened that gave rise to our whole inquiry into AU-type aggregation and TU-type aggregation. This was because it seemed as though our intuitions were at odds with the current policy of the courts—a policy which says that when a person has his life shortened, this does not harm the person.

This is only the tip of the iceberg about the topic of which aggregation mechanism is most plausible,<sup>54</sup> but this should give the reader a sense of the difficulties that one confronts in the attempt to choose which aggregation mechanism is most plausible.

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54. See Pressman, *supra* note 9.

C. *How Private Law Remedies Could Confront and  
Do Confront Different-Numbers Cases*

1. How Private Law Remedies Could  
Confront Different-Numbers Cases

The question now becomes: Does the law (and private law remedies in particular) ever confront different-numbers cases? The answer is “yes.”

Of course, this whole domain of questions—of same-numbers cases and different-numbers cases alike—only arises when we’re attempting to make a comparison between two possible states of affairs. Thus, the first task is to determine what the possible states of affairs are that we’re comparing. In our context, the first state of affairs is the person’s “expected”<sup>55</sup> future in the state of affairs where no harm is incurred. The second state of affairs is the person’s “expected” future in the state of affairs where a harm is incurred. Thus, in comparing these two possible states of affairs, we’ll have a same-numbers case if the two possible futures are of the same length, and we’ll have a different-numbers case if the two possible futures are of different lengths.

Typical cases that the law confronts are same-numbers cases. Typically, a harm that is incurred by a person (be it a financial harm or otherwise) does not affect the length of one’s expected future. Of course, every event in one’s life affects the trajectory of one’s future and thus even the occurrence of the most seemingly insignificant event can have enormous effects on what transpires in one’s future. Further, these effects on one’s future often will affect how long one lives (i.e., how long one’s future is). Despite this, however, these effects are usually highly unpredictable and there’s usually no way of predicting whether a particular event will lengthen one’s life, shorten one’s life, or have no effect at all on the length of one’s life. In light of this, when a harm is incurred by a person, the “expected” effect that this harm has on the length of the person’s life is typically zero. Thus, the typical cases that private law remedies confront are same-numbers cases.

Private law remedies will confront a different-numbers problem, however, if the harm brings about a change to the expected length

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55. The word “expected” can refer to an estimation or guess, but it also can refer to a probabilistic expected value, i.e., an expectation in a more rigorously calculated sense. Although there is overlap between these two senses of the word “expected,” here and in the rest of the Article I intend to refer to the second of these two senses of the word “expected” (unless I indicate otherwise).

of the person's life. An event that is a harm could bring about either an increase or a decrease in the expected length of the person's life. I'll focus here on cases where the harm causes a decrease in the expected length of life, but it's important to note that there could also be harms that could create a different-numbers problem by increasing the length of a person's expected life. These cases where a harm causes an increase in length of life could either be due to the fact that the person is suffering and the increase in life length is something that is itself a harm for the person, or it could be due to the increase in life length being a benefit, but one which comes along with and which is outweighed by a harm. I will leave these possibilities aside, however, and focus on cases where there is a harm and where we get a different-numbers case because the harm decreases the length of a person's life.

There is another interesting distinction to note here: among these cases where there is a harm and where the harm causes a decrease in the expected length of the person's life, it seems that there are at least three categories of cases: those in which the only harm to the person is due to the loss in years of life (and in which there is no harm due to effects on the years that are still lived), those in which the only harm to the person is due to effects on the years that are still lived (and in which there is no harm due to the lost years), and those in which there is harm due to the lost years *and* due to the effects on the years that are still lived.

Regardless of the various ways to categorize these types of cases, the bottom line here is that private law remedies can indeed confront different-numbers cases. These are cases where a harm is incurred and where the harm that is incurred also affects the expected length of the person's life. While this is in fact the bottom line here, we will soon see that the distinction between the cases above is important. I will continue to leave aside the cases where the harm involves an increase in the person's expected length of life, but there will be important points made about the two types of ways in which there could be harm in the cases where there is harm and where the person's expected length of life decreases—(1) harm due to the loss in years of life, and (2) harm due to harm experienced during the years that are still lived.

The foregoing has showed how private law remedies can confront different-numbers cases. To further explore not only how they can do so, but also how they do so, I will now consider some specific factual situations that private law remedies confronts that involve different-numbers cases.

## 2. How Private Law Remedies Do Confront Different-Numbers Cases: The Situations in Which a Person Is Harmed by Having His Life Shortened

Situations in which lives are shortened are numerous and occur in various forms.

As stated earlier in this Article,<sup>56</sup> the legal system could confront cases of plaintiffs seeking a remedy for the harm of lost life-years in two contexts. First, a case might be brought after a victim has died. In such a case, although a remedy for the lost life-years might be warranted in order to bring about optimal incentives for future tortfeasors, it could be argued that plaintiffs should not recover for this harm because this harm was to the victim herself who no longer is alive therefore cannot be compensated. This Article, however, primarily explores a second context in which plaintiffs might seek a remedy for the harm of lost life-years: cases in which a victim has her expected future shortened by a tort, but in which she has not yet died. In a case of this type, the fact that the victim is still alive makes it possible to compensate the victim herself directly for the value of life-years. Thus, even if compensation for lost life-years is not warranted in cases where the victim is dead, it might still be warranted in cases where the victim is still alive. Thus, going forward, this Article focuses primarily on situations in the latter category—where the victim is still alive at the time of suit.

The following are some examples of situations that can result in lives being shortened: (1) medical malpractice, (2) torts of exposure to dangerous substances, such as asbestos, smoking, or other carcinogens, (3) torts of accidents, such as car accidents involving reckless driving, or construction accidents, and also (4) intentional torts, including but not limited to intentional killings. Of these various examples, all can shorten lives, and some of them can also involve variants where not only is a life shortened but it is brought to an immediate end. The foregoing are some of the main examples of situations in which lives can be shortened, but other examples exist as well.

To elaborate on one of these categories of cases, and to see how it might be an example of a harm that shortens a person's life, consider medical malpractice. An example of a typical fact pattern might be the following: A doctor negligently fails to correctly diagnose a disease or negligently fails to call for a procedure that would show the existence of a disease. The patient then discovers the disease a year later, at which point the disease is at such an advanced

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56. See Introduction, *supra*.

stage that nothing can be done to cure the disease, and it is estimated that the patient has one year left to live. If, however, the patient had become aware of the disease a year earlier, it could have been easily treated and cured and the patient, based on his age, would have an expected remaining life length of thirty years. Thus, as a result of the doctor's negligence, the patient's expected length of remaining life at the time of the negligence was shortened from thirty-one years to two years.

Additionally, as stated above, all four of the categories mentioned in the non-exhaustive list could result in a shortening of life that is brought about by an immediate death or by a death that is not immediate. The example of medical malpractice happened to involve a non-immediate death, but a variant of that case could involve immediate death. To further illustrate a possible case where the shortening of life is brought about by an immediate death, though, I offer additional examples from the third and fourth category above. On the one hand, in the context of negligence, there are situations in which a person is killed immediately by another person's negligent operation of a motor vehicle. On the other hand, in the context of an intentional tort, there are situations in which a person murders another person and where the murderer is the defendant in a civil case arising out of the murder. In both of these types of cases, as with the original example of medical malpractice, a person's life has been shortened. In these two latter cases, however, a person is not left with any remaining life at all.

Thus, there are various categories of cases in which a person can have his life shortened. Further, for all of these categories, the death that brings about the shortening of the person's life can be an immediate one or a non-immediate one, and if it's a non-immediate one, the death can happen at any possible point in time in a person's future—be it in the near future or be it in the distant future.

Before continuing, it's important to be clear about how prevalent these cases of a person having his life shortened are. These types of cases where a person's life is shortened certainly do not constitute the majority of cases where a person is harmed. Much to the contrary, they constitute the vast minority of cases in which a person is harmed. Notwithstanding this, these cases are not to be ignored. They are still numerous and important. Further, although the following point is not one that is necessary for justifying the focus on these types of cases (cases where a harm shortens a person's life), I will explain in Part VI of this Article that there is reason to believe that the prevalence of these cases is likely to grow significantly in the future as various technologies develop. Even leaving

aside this conjecture, the prevalence of these cases today is still substantial enough to deserve our close attention, focus, and analysis.

#### D. *Summary*

In sum, although in most cases we could do fine without articulating which mechanism we espouse for aggregating happiness, there are cases in which we must be more precise and we must articulate which aggregation mechanism we espouse. These cases that require us to be more precise are what I call “different-numbers cases.” In the context of private law remedies, we could encounter different-numbers cases if we have a tort that harms a person by shortening his life. Not only *can* private law remedies theoretically encounter different-numbers problems, but private law remedies in fact does confront different-numbers problems and I have described some examples of the fact patterns in which it does so. Thus, it turns out that we do indeed need to be more precise; we need to be able to articulate a plausible account of which aggregation mechanism we should espouse for aggregating happiness.

### V. THE LAW’S POSITION ON SHORTENING-OF-LIFE ISSUES AND HOW TO ASSESS WHETHER IT IS A GOOD POSITION

This leaves a number of important questions about shortening-of-life cases unanswered. First, can plaintiffs currently recover for having their lives shortened? What is the current state of the law with respect to such cases? Second, why might the law be the way it is? Third, is the current state of the law satisfactory? I explore these various topics in depth elsewhere.<sup>57</sup> I do, however, provide a brief summary of these topics here.

#### A. *The Law Regarding Situations in Which a Person Is Harmed by Having His Life Shortened: Whether Recovery Is Allowed*

Although there are various claims that can arise out of a tortious shortening of a life, these claims typically cannot be brought until the harmed individual has died. Further, the vast majority of these claims are for the harms to the family of the decedent (both for

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57. See Pressman, *supra* note 9.

economic and non-economic harms). There also can be recovery for the decedent's economic and non-economic losses incurred before his death. There is a huge omission in the claims that can be brought, however: what in many cases is quite possibly the worst of all the harms incurred by the person is something that a legal claim typically cannot be brought for (both, by him, while he is alive and aware of the fact that his life has been shortened, and, by his family, after his death): the harm to the decedent of the lost years of life themselves.

There are, however, a few examples of cases where courts have allowed recovery for a claim for the harm specifically of having one's life shortened. This, however, is extremely rare, and two of the very few examples are *Alexander v. Scheid*,<sup>58</sup> an Indiana Supreme Court case, and *Downie v. United States Lines Co.*,<sup>59</sup> a Third Circuit case.<sup>60</sup> As for how these few courts calculated the amount of compensation for having one's life shortened, seemingly very little analysis went into the decision of how much compensation to provide. The courts simply assumed that the amount of compensation should be calculated by employing something functionally equivalent to (what I call) TU-type aggregation, and they provided a certain amount of compensation for each year by which the person's life was shortened.<sup>61</sup>

Thus, in sum, although the general rule is that courts do not allow a person to recover compensation for having his life shortened, there are a (very) few courts that have provided compensation to a person for having his life shortened. Even these courts that have provided compensation to a person for having his life shortened, however, provided very little insight into both (1) why a party should be compensated for having his life shortened, and (2) given that a party should be compensated for having his life shortened, how to quantify the value of this harm, and how to deter-

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58. *Alexander v. Scheid*, 726 N.E.2d 272 (Ind. 2000).

59. *Downie v. United States Lines Co.*, 359 F.2d 344 (3d Cir. 1966).

60. As for the state of the law regarding recovery for lost life-years in cases where the victim has already died, almost no states permit recovery for such losses. A small minority of "hedonic-loss states" (Arkansas, Connecticut, Hawaii, New Hampshire, and New Mexico) do allow compensation for "hedonic loss" incurred by the decedent as a result of his lost years of life. See *Durham v. Marberry*, 156 S.W.3d 242 (Ark. 2004); *Katsetos v. Nolan*, 368 A.2d 172 (Conn. 1976); *Montalvo v. Lapez*, 884 P.2d 345, 364 (Haw. 1994); *Marcotte v. Timberlane/Hampstead School District*, 733 A.2d 394 (N.H. 1999); New Mexico St. § 41-2-1; *Smith v. Ingersoll-Rand Co.*, 214 F.3d 1235, 1245 (N.M. 2000). But, even in these states, courts do not always provide recovery for the hedonic loss caused by the lost years, and, where they do, there is no clear system for calculating these damages, and the courts' opinions are rife with confusion.

61. As I will discuss in Part V, below, a measure of compensation of this sort could very well turn out to be a plausible (or correct, or good) measure of compensation, but this is far from obviously the case.

mine how much financial compensation is the appropriate amount to compensate for having one's life shortened.

B. *Making Sense of the Law's Treatment of  
(i.e., Identifying Its Position on)  
These Shortening-of-Life Issues*

The law generally does not allow recovery for a claim for the harm *to the person whose life is shortened* for the lost years of life. As for how to make sense of the law's treatment of these cases and identify its position on why no recovery is permitted, the inferences we can make in the context of cases of immediate death are different from those that we can make in the context of cases of non-immediate death.

In the context of immediate death, it is unclear whether the failure to allow recovery for the lost years is due to practicalities of the situation or a theoretical position; after all, the person is dead, so he cannot be compensated even if we think he deserves compensation. In the context of non-immediate death, however, where the practicalities of the situation do not prevent a person from suing and recovering, it becomes clear that the inability of a person to recover is due to a theoretical position of the courts that a person should not be able to be compensated for having his life shortened. Further, given that private law remedies seek to compensate a person for the harm he has incurred, the law seems to be telling us that a person is not harmed by having his life shortened (i.e., by losing years of life).

Various objections, rooted in practical considerations, could be made to this inference, however.

For instance, one might argue that the reason courts do not allow a person to get compensated for having his life shortened is not that the person is not harmed by this, but rather, that we just aren't equipped to make life expectancy estimates with any confidence when a person's life expectancy might be affected by an event but the death is not immediate.<sup>62</sup> While this explanation

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62. Another point that is related to this is that perhaps we do not think we are equipped to make estimates with any confidence about a person's future happiness levels. This topic will be further discussed in Part VI. This on its own, however, does not provide a plausible explanation for why we might not allow a person to be compensated for having his life shortened. As long as we think that a person would be happy enough that he would be benefited by additional years of life, then an inability to accurately estimate exactly how happy the person would be doesn't seem to be a reason to withhold compensation to a person. Difficulty in articulating future happiness levels would more appropriately come into play in determining *how much* compensation a person should receive for having his life shortened, not the prior question of whether he should be compensated at all.

might have some prima facie plausibility, it fails for two reasons. First, we do make life expectancy estimates all the time. These estimates are made both (a) in society in general, and also (b) specifically by the courts, albeit in other contexts.<sup>63</sup> Second, even if it weren't for the fact that we do make estimates in various type of cases, there are some cases that are so clear cut in terms of it being obvious that a person has had his life shortened, that even if we usually do not have confidence in our estimates about life expectancy, these cases would and should constitute exceptions.

A second possible explanation for why courts might not allow recovery for the harm of having one's life shortened is the following: in order for a person to be able to bring a claim for having his life shortened, he will have to be alive (i.e., the harm will have to be due to a non-immediate death), but in the cases in which a person is still alive, not only is the life expectancy estimate often difficult to make, but it also will often be difficult to know whether the event in question will in fact lead to future death at all. Accordingly, there is a concern about pre-emptive suing and whether a claim would be ripe.

Thus, the problem for some of these shortened-life claims seems to be that on the one hand, they're only certain when the death occurs, but, on the other hand, the person can only be compensated while he is still alive. Thus, it seems that a person should at least potentially be able to be compensated earlier on in life even if the death is not certain, but, on the other hand, we typically do not award compensation for claims that are conjectural, probabilistic, and not yet ripe.

This type of conundrum, it seems, might be a practical reason that courts have typically not allowed compensation for a person whose life has been shortened.<sup>64</sup> Even this, however, could only be a partial explanation of the current law, because there are various cases that avoid these concerns by having a future death that for one reason or other is particularly certain, despite its being in the future.

Thus, it seems that to the extent that a person should be compensated for a shortened life, these concerns about preemptive-

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63. Life expectancy estimates are made, even in the context of wrongful death cases, for the purpose of determining the financial support that a spouse would have received from the decedent. *See, e.g.*, In re Delmoro, 2015 NY Slip Op. 25146 [48 Misc.3d 628, 631] (2015).

64. I think that this might very well play at least some role in explaining the inability to recover for having one's life shortened. Further, to the extent that a conclusion of this Article is that there should be compensation for a person whose life is shortened, the consideration here will be a potential obstacle, and a topic that will be relevant to consider when we determine the details of how to compensate a person for his having his life shortened.

ness, speculativeness, ripeness and lack of certainty should not stand as a bar that prevents a person from recovering compensation for having his life shortened. Notwithstanding this, these concerns are important, and I will return to discuss them in Part VI.

In sum, it seems that there are some important possible practical explanations for why it might be that we do not allow recovery of compensation for a person who has his life shortened. To the extent that one or more of these explanations (or perhaps multiple explanations jointly) were to explain our disallowance of recovery for these claims, it then would not necessarily be the case that the law is stating that a person is not harmed by having his life shortened. As I have argued above, though, it seems as though the practical explanations do not cover all cases, and thus it seems that even if these practical considerations are important and relevant, they do not fully explain our disallowance of recovery for having one's life shortened. Thus, it does seem that the law likely in at least some cases is saying that a person is not harmed by having his life shortened. For this reason alone, it will be crucial to explore the question of whether the law is right about this: is it the case that a person in fact is not harmed by having his life shortened?

The various foregoing points justify my inquiry (in Part V) into whether a person is harmed by having his life shortened. However, in light of the fact that I've stated that the practical considerations do not fully cover all cases and thus do not fully explain our disallowance of recovery, I will assume throughout the rest of this Article that the law currently is stating that a person is not harmed by having his life shortened.<sup>65</sup>

C. *Next Steps: How to Assess Whether the Law's Position on Shortening-of-Life Issues Is a Good One*

The question now is what we should make of the fact that the law says that a person is not harmed by having his life shortened. *Prima facie*, it seems that this is a mistake. After all, most people would view the shortening of one's life—be it via an immediate death or by a death that is further into the future—to be among the most severe harms that one could possibly incur.

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65. It may or may not be the case that the law is stating this, but (1) given the considerations that I have discussed, see discussion here in Part V.B, it is not an unreasonable assumption, and (2) not much hangs on the assumption. Not much hangs on the assumption because even if it is not true, the inquiries in this Article will be just as important as if the assumption were correct.

Thus, the next step is to turn to the question of whether a person is harmed by having his life shortened, and, if so, how much of a harm this is. The answers to these questions will be a function of which aggregation mechanism we espouse, which in turn will be a function of which aggregation mechanism is the most plausible.

Although providing an answer to these questions is a time-consuming and arduous task that is beyond the scope of this Article, this Section sketches out how I address this task elsewhere.<sup>66</sup> Here, I consider briefly (1) which aggregation mechanism is the most plausible, and (2) how we can convert our answers to the happiness questions into a measure of compensation for the aggrieved person.

### 1. Determining Which Aggregation Mechanism Is the Most Plausible

We can determine whether a person is harmed by having his life shortened by choosing which aggregation mechanism we think is most plausible for determining the value of a temporal portion of a person's life. The choice of aggregation mechanism enables us to do this, because it enables us to aggregate and quantify the happiness that the life would have contained if not for it having been shortened, and also to aggregate and quantify the happiness that the life will contain given that the event that caused the shortening did in fact occur. Even though these determinations are mere estimates (because we cannot predict the future), the aggregation mechanism provides the function to go from the values of the parts to the value of the whole (a temporal period of a life or a sub-part thereof). Armed with a metric for quantifying the value of the person's life in both possible states of affairs (the one in which the harm is incurred and the one in which no harm is incurred), we can then quantify how much happiness a person lost as a result of his having his life shortened.

Depending on one's aggregation mechanism of choice, it might be the case that having one's life shortened cannot be a harm, or that it can be. Further, if one's aggregation mechanism gives one the result that a person can (in general) be harmed by having his life shortened, applying the aggregation mechanism to the facts of a particular case would enable us to make an estimate about whether there in fact was a harm to the person in the particular case due to his having his life shortened. Further, if there was a

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66. See generally Pressman, *supra* note 9.

harm to the person, applying the aggregation mechanism to the facts of the case would also enable one to determine *how much* the person was harmed (in terms of happiness) by having his life shortened.

Thus, our determination of the aggregation mechanism will tell us whether—and, if so, how much (in terms of happiness)—a person is harmed by having his life shortened.

Our, question, then, will be whether we should espouse TU-type aggregation, AU-type aggregation (and if so, which sub-version of AU-type aggregation, because it turns out that, based on one's choice of the relevant temporal "reference class," AU-type aggregation can take a number of different forms), or some hybrid alternative aggregation type (or, further, some other type of aggregation mechanism altogether).<sup>67</sup>

As I have argued elsewhere, it turns out that unless we espouse what I will call the "lost years" temporal sub-version of AU-type aggregation, we will think that a person can be harmed by having his life shortened. Thus, unless one espouses the lost years version of AU-type aggregation, one will think that there can be cases where there should be compensation for a person for his having his life shortened. This is an important finding, especially in light of the fact that the status quo of the law is that courts almost as a rule do not compensate people for having their lives shortened.<sup>68</sup> Unless we espouse a particular theory (namely AU, and the version of AU that compares the lost years themselves), the status quo must change. We should compensate people for having their lives shortened.

As we see, the first step in exploring what the law should do about cases involving the shortening-of-life issues is to determine which aggregation mechanism to espouse. The second step is to determine how much happiness this aggregation mechanism says that a person lost. I have now touched on these steps. The third step, which I carry out elsewhere but touch on briefly below, is then to determine how much money will bring about a happiness transfer that will return to a person the amount of happiness that he lost.

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67. The very few courts that have allowed recovery have used TU-type aggregation but have not grounded that application in any analysis. See *supra*, note 58, 59 and accompanying text.

68. See Pressman, *supra* note 9.

## 2. Converting the Answer to the Happiness Questions into a Measure of Compensation for the Aggrieved Person

While espousing the version of AU that compares the lost years themselves would prescribe that there be no remedy for having one's life shortened, the various other theories of happiness do not yield obvious prescriptions in terms of what the appropriate remedy should be for a person whose life is shortened. Further inquiry and analysis are required to convert the assessments (be they absolute or relative) of these other theories into remedy quantities to award to the person whose life was shortened.

Thus, carrying out this further inquiry and analysis is the next step: That is, the inquiry is into how to translate the information regarding (a) the facts in terms of happiness of a particular case, combined with the information about (b) the choice of aggregation mechanism and the choice of a temporal reference class (leaving aside the lost years version of AU, for which we already know the answer to the inquiry), into (c) a determination of what remedy (i.e., how much compensation) we should give to the person whose life has been shortened to bring them back to the level that they would have been at if not for the harm that they incurred.<sup>69</sup>

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In sum, the foregoing sketches the analysis required to be carried out in order to answer the questions of (1) whether a person is harmed by having his life shortened, (2) if the person is harmed by having his life shortened, how much a person is harmed by having his life shortened (in terms of happiness), and (3) if the person is harmed by having his life shortened, how much he should be compensated in tort to bring him back to the level that he was at. The three steps to carry out in order to answer these questions involve (1) determining which aggregation mechanism is most plausible, (2) determining how much happiness, according to the aggregation mechanism of choice, has been lost by the person as a result of the lost years, and (3) determining how much of a money transfer to the plaintiff would bring the plaintiff's to the level of happiness that it would have been at (according to the aggregation mechanism of choice) had the plaintiff not incurred the harm that he incurred.

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69. *Id.*

## VI. EXTENSIONS

As we have seen, the conclusions of this Article carry both theoretical significance and matter concretely for a significant number of cases, including all those where remedy is sought for the shortening of a life. That set of cases is already substantial, since it includes, among others, cases of (1) malpractice, (2) torts of exposure to dangerous substances, (3) torts involving accidents, and (4) intentional torts.

In this Part, I raise and address three important sets of extensions to this Article's conclusions. First, I show that technological advances are likely to expand significantly the set of cases where courts must confront shortening-of-life cases. Second, I show that courts must confront different-numbers problems (and thus choose an appropriate aggregation mechanism) even in some cases where no shortening of life is involved. Third, I show that different-numbers problems in the population-wide context are already confronted by the law and by society in a wide range of areas—even if not by courts—and it is crucial to articulate a solution to different-numbers problems in this context as well. All three expansions will show that the problems addressed in this Article extend farther and wider than has been apparent so far.

A. *Various Ways in Which the Development of Technology Is Likely to Increase the Prevalence of Situations that Confront the Topics of This Article (Regarding Different-Numbers Problems and the Shortening of a Person's Life)*

For various reasons, it seems as though the prevalence of cases of shortening of life (i.e., different-numbers problems) in the law is likely to be much greater in the future than it is now. This is primarily due to various ways in which technology might affect things. In particular, it seems that technology will provide us with greater and greater ability to be accurate and precise in our estimates of how long a particular person will live.

1. *Technology Is Likely to Bring About More Knowledge About Life Expectancies, and thus There Will Be More Cases Where One Can Know that One's Life Has Been Shortened*

With the current state of our technology, it is often very difficult to make good estimates of how long a person will live—be it either absent a life-shortening harm having been incurred or be it after

the occurrence of, and taking into account the existence of, a life-shortening event. As I discussed in Part IV.D.2, this inability of ours to make good estimates of how long a person will live is, I think, perhaps one of the main reasons that the law has been able to avoid seriously considering the questions about remedies for shortened life that have been the subject of this Article. In most situations it seems all but impossible to make an estimate with any confidence about how long a person will live or about how a particular event in a person's life will affect the length of his life. (Of course, as I've argued, while this may have contributed to the law's failure to consider these questions, the failure to consider these questions has still been a glaring omission, because even with our current technology there are cases where we are able to make estimates, and in many of these cases we are able to make estimates with high confidence about the number of years a life has been shortened by, because the facts are clear and stark.)

The various situations discussed in this Article have been cases where it seems that we are able, with greater confidence, to make estimates about how much an event shortens a person's life: These estimates we have considered have generally been a result of the clear and stark contrast between (1) the general remaining life expectancy of a person given his current age and what the life expectancy is of human beings, and (2) the drastically shorter remaining life expectancy that we have high confidence in our estimate of, be it due to an immediate death or due to confident assessment that a person will only have six months or a year to live as a result of having a cancer that is advanced and the effects on life expectancy of which are well known.

If, however, our estimates were able to get more precise and accurate, due to developments of technology, then it seems that the number of cases where we can know with confidence that an event causes an increase or decrease in life expectancy will grow, and along with this increase there will be an increase in the number of people seeking to be compensated for decreases in the length of their lives.

Further, there does seem to be reason to think that technology will enable us to have better and better estimates regarding how long a particular person will live. Our scientific and technological capacities grow every year and there is no reason to think that these developments will not yield a more exact science regarding life expectancy. Further, it might not only be that we will become better able to predict the effects on life expectancy of serious events such as traumatic injuries and failures to correctly diagnose diseases at an early stage, but we might even become able to pre-

dict with accuracy and precision the effects on life expectancy of more and more seemingly trivial events (such as catching a cold or undergoing a stressful week at work) as our science and technology advances even further.

Additionally, not only might our scientific and technological developments enable us to make better estimates about life expectancy, but so too might these developments enable us to better predict the levels of happiness that a person will experience in his future. While information about future happiness will not directly lead to more cases of different-numbers problems that the law will confront, it might do so indirectly. This is because, while perhaps with our current state of knowledge it might seem as though huge uncertainty and variance in our prediction of the future happiness level of a person might overwhelm and obscure any information we might have about a small difference in the expected length of one's future, if we have more accurate and precise estimates of happiness levels in the future, this might change things. If we have more accurate and precise estimates of happiness levels in the future, this might make it the case that a loss of a small amount of one's length of life would still be clear enough in terms of how much of a happiness loss one would incur during the lost period of life that one might then be able to bring a suit that one otherwise would not if there were less information about one's future happiness levels. (If the disparity between the two states of affairs in terms of length of life lost were large, however, it seems that even imprecise estimates of future happiness levels would not prevent there from being fairly clear cases of losses to one's expected future happiness.)

In sum, it seems that developments in science in technology are likely to lead to much better estimates of how long a person will live, and this will likely make it the case that, in the future, more people will have claims about specific losses to their life expectancy. In light of this, the questions raised in this Article will grow in importance going forward, and they will be brought to the forefront of both theoretical and practical legal discussions and debates.

## 2. Inventions that Give Rise to the Need for Policy Decisions that Confront the Topics of this Article

There is an additional way in which technology might bring questions associated with different-numbers problems and the shortening of a person's life to the forefront. Developments in science and technology might give rise to inventions that force us to

make policy decisions reflecting a decision about which aggregation mechanism is most plausible.

Consider, for example self-driving cars. In deciding how to program the cars to handle certain types of situations (such as an impending accident that could be avoided but only by causing a different type of accident), decisions must be made about how we value quantity and quality of life. This type of weighing in these cases can be about weighing quantities of *lives* versus quality of *lives* (in cases where different numbers of people could be killed or injured by different actions taken by the self-driving car), but this type of weighing in these cases can also be about weighing quantity of moments in a single life versus the quality of moments in a single life (if, say, weighing two different types of injuries to the same person).<sup>70</sup> These latter cases of intrapersonal weighings are the types of different-numbers problems I have been addressing in this Article.

To the extent that developments in science and technology lead to the need for decisions of this sort, this is another way in which developments in science and technology can lead to the increased prevalence and importance of the questions at issue in this Article about which aggregation mechanism is the most plausible.

### 3. The Advent of Technology Increasing Lifespans Will Increase the Prevalence of Situations that Confront the Topics of this Article

There are also other examples of ways in which developments in science and technology might give rise to increased prevalence of the questions regarding different-numbers problems associated with different lengths of a person's life that I discuss in this Article. One other such example is that there are starting to be discoveries about drugs that might increase people's life span, and there is reason to think that these technologies will develop and that we might have the ability to greatly increase a person's lifespan by having them undergo a particular treatment.

If it does turn out that we will start to be able to greatly increase people's life spans, there are various ways in which this might increase the prevalence and importance of the questions regarding

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70. The European Union is establishing several fora for the research of just such questions. See, e.g., *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions: On the Road to Automated Mobility: An EU Strategy for Mobility of the Future*, at 17, COM (2018) 283 final (May 2018), [https://ec.europa.eu/transport/sites/transport/files/3rd-mobility-pack/com20180283\\_en.pdf](https://ec.europa.eu/transport/sites/transport/files/3rd-mobility-pack/com20180283_en.pdf).

different-numbers problems associated with different lengths of a person's life. The following are among them.

(1) This technology would introduce an additional way in which a person's life expectancy can be varied, thus introducing ways in which a person can be harmed by having his life expectancy shortened, (2) there would be greater possible amounts of life that could be lost, and thus people might pay more attention to the need for compensation for a person who has his life shortened, (3) different people might not have equal access to these treatments, and thus different lives might be of very different lengths, thus making it harder (i.e., a more flagrant mistake), for the purposes of private law remedies, to just treat all lives as being of the same length and to thus ignore length of life altogether (as we currently do).<sup>71</sup> Lastly, perhaps more broadly and more generally, but also most importantly, (4) as we start to have more options for different lengths of lives, we will more frequently and in various ways and various contexts confront questions about how to value chunks of life for a person and how to trade off quantity of life versus quality of life for a person.

#### 4. Summary

For the various reasons provided in this Section, there are strong reasons to think that developments in science and technology are likely to lead to growing importance, going forward, of the questions discussed in this Article regarding different-numbers problems and the shortening of a person's life. As we move forward, it seems likely that these questions will become more and more prevalent in life, the legal system (including private law remedies), and in and for policy in general. In light of this, although it is already of great importance to address these difficult questions now—even leaving aside my discussion of the future—my hypotheses about how science and technology in the future will increase the prevalence and importance of these topics make it even more important that we address these questions head-on now. If we do so, we will then be armed with greater clarity on these issues for when their prevalence becomes even greater and more pervasive in the future.

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71. Of course, as discussed in this Article, not only do we currently ignore lengths of lives and treat all lives as being of the same length, but, as a general rule, we also do not compensate people for having their lives shortened. The two topics mentioned here are issues that are related but distinct.

B. *Situations Confronting the Choice Between Aggregation Mechanism that Do Not Fall into the Same Category as Those Addressed Throughout This Article (i.e., Situations that Do Not Involve the Shortening of a Person's Life)*

Recall that the point throughout this Article has been that it is cases of different-numbers problems—and not cases of same-numbers problems—that give rise to the need to decide which aggregation mechanism we find most plausible. In same-numbers problems, we don't seem to have to choose which aggregation mechanism to employ, because all aggregation mechanisms have the same prescriptions. While these points are true, I think that there are some situations in which same-numbers cases might behave like different-numbers cases, and in these situations, it seems that we will have to choose which aggregation mechanism to employ. This might occur in a few types of situations, one of which is the following.

Suppose that there are two plaintiffs who are harmed by a defendant, and that the harm incurred does not affect the life expectancy of either plaintiff. Because life expectancies are not affected, we would seemingly have a same-numbers problem. Suppose, however, that the defendant does not have enough money to fully compensate both plaintiffs.<sup>72</sup> Suppose further that in a case of this sort, where we cannot bring both plaintiffs one hundred-percent of the way back to the level that they were at, that what we want to do is to treat both plaintiffs equally. Treating the plaintiffs equally in a case like this, however, could be defined in different ways.

One way in which one might define bringing about equal treatment in a case like this would be to use the available funds of the defendant to move the two plaintiffs an equal number of units of happiness in the direction of the level that they were at. If this were the principle that we employed, we would be forced to address the question of which aggregation mechanism is most plausible. For the purposes of the following, in order to focus in on the question I'm addressing, I will make the simplifying assumption that the plaintiffs have the same conversion rate between money and happiness.

On the one hand, if we espoused TU, then we would provide the amounts of money to both plaintiffs that we think would provide them with the same number of sum-aggregative units of happiness

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72. And perhaps the defendant also does not even have enough money to compensate either one of the plaintiffs fully. Regardless of whether this is the case, though, what's relevant here is that the defendant does not have enough to compensate both of the plaintiffs fully.

to add to the amount of happiness units that they will experience going forward. Because I'm assuming that the two plaintiffs have the same conversion rates between utility and money, they would then receive the same sums of money.

If, on the other hand, we espoused AU, the analysis about how much money to give to the two plaintiffs might be different than it was with TU. With AU, we would provide the amounts of money to the plaintiffs that we think would bring about an increase in the same number of units of happiness, as quantified by AU—i.e., an increase in the average happiness for the person over the relevant period of time. Of course, what the relevant period of time is would be a function of which version of AU one espouses, and the relevant period might be one's whole life, or one's future. Regardless of which version of AU one espouses, more information regarding that chunk of time (for both plaintiffs) would be relevant for the determination of how to divide the defendant's funds to bring about an equal gain in units of average happiness to the two plaintiffs. Again, we are assuming that the conversion rate of happiness to money is the same for both plaintiffs, and, in light of this, we will not need to know what the happiness level (or financial wealth) is for the plaintiffs during the respective chunks of time (be it their futures or their whole lives). Their happiness level will not come into play. What will be relevant to know, however, is how long this chunk of time is for the two plaintiffs respectively. This is because if we are to bring about an increase in average happiness for a chunk of time for two people, and person one's chunk of time is twice as long as person two's chunk of time, it will take twice as many sum-aggregative units of happiness added to person one's chunk of time to increase his chunk of time by a certain number of units of average happiness as it would to increase person two's chunk of time by the same number of units of average happiness.

In light of this, for cases of the sort that I am considering, if we are trying to treat two plaintiffs equally by bringing them the same amount of an increase in happiness, we will confront the question of which aggregation mechanism is most plausible, and this is because different aggregation mechanisms will yield different prescriptions about how to divide the defendant's money. TU would suggest splitting it equally and ignoring information about lengths of any lives or the lengths of any parts of any lives, whereas a "whole-life" version of AU would determine how to divide the money based on what the expected life length will be of the two plaintiffs, whereas a "future" version of AU would determine how to divide the money based on what the expected length of the two plaintiffs' futures will be. Thus, in the scenarios I'm considering,

and on the definition of “treating the plaintiffs equally” that I’ve been considering, we would be forced to determine which aggregation mechanism we think is most plausible.

Now let’s consider another possible definition of “bringing about equal treatment” for the two plaintiffs—i.e., a definition other than providing them with equal amounts of happiness (however that phrase, in turn, gets defined). Another way in which one might think that we bring about equal treatment in the cases we are addressing would be to bring both plaintiffs an *equal percentage* of the way back to the level that they were at, given the constraints of how much money the defendant has. While this type of a situation could arise in the context of a tort suit, this method of providing the same percentage of a plaintiff’s loss to the various plaintiffs (a loss which in some cases could be quantified financially, but which here we are quantifying in terms of loss to a plaintiff’s happiness level) is akin to the way matters are handled in other areas of the law, including, among others, in bankruptcy. In bankruptcy, there are often different creditors that have a claim of the same priority to the debtor’s assets, and when this is the case, the available funds are distributed among the creditors so that they each receive the same percentage of the money they are owed by the debtor. Since these creditors are of the same priority level, we strive to bring each of them back the same percent of the way to the level that they were at before the debtor’s defaulted on the loans and filed for bankruptcy.<sup>73</sup>

If this were the way we defined treating the plaintiffs equally, we would not need to address the aggregation mechanism question. This is because the prescriptions for how to divide the defendant’s money between the two plaintiffs would be the same regardless of which aggregation mechanism we thought was most plausible.<sup>74</sup> On TU, both plaintiffs suffer a certain amount of a loss in sum-aggregative units of happiness (be it directly through a tort that is a non-economic harm, or be indirectly through a tort that is an economic harm), and then they will be returned (via a monetary sum) an equal percent of the loss in sum-aggregative units of happiness. On AU, even though the loss in AU is calculated in part by looking at how long the relevant chunk of time is for the person (be it his whole lifetime or his future), it is also a function of how many sum-aggregative units of happiness we think that the person, as a result of the harm, has lost for that time chunk. Thus, regardless of which

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73. See generally, David A. Skeel, Jr., *The Empty Idea of “Equality of Creditors,”* 166 U. PA. L. REV. 699, 700 (2018).

74. Recall again that I’m assuming that both plaintiffs have the same conversion rate between money and happiness.

time period we say is relevant and regardless of how long these respective time periods are for the two people, the loss in AU units for both people will be proportional to the loss of sum-aggregative happiness units that they incur for that time period. Thus, the way to return the two plaintiffs an equal proportion of their losses in happiness according to either version of the AU theory will, just as with TU, require a return of a number of sum-aggregative happiness units to one plaintiff that is the same percentage of his total loss of sum-aggregative happiness units as is the other plaintiff's percentage recovery of his total loss of sum-aggregative happiness units.

Hence, if we are employing an "equal percentage of loss" recovery theory of equal treatment of the plaintiffs, we need not address the happiness aggregation mechanism question, because the prescriptions of all the different aggregation mechanisms come out as being the same.

In sum, if one adopts the theory of equal treatment of plaintiffs that involves giving each plaintiff the same amount of happiness back, then, in the scenarios I'm considering, we will confront the question of which aggregation mechanism is most plausible. If, however, we instead adopt the "equal percentage of loss" recovery theory of equal treatment, then we will not confront the question of which aggregation mechanism to espouse. These two definitions of equal treatment of plaintiffs might not be the only possible definitions in these scenarios that I'm considering, however. As for whether other definitions would require us to confront the aggregation mechanism question, it seems to me that additional accounts of how to treat the plaintiffs equally are likely to behave like the "equal amount of happiness" theory and unlike the "equal percentage of loss" recovery theory. It seems to me that the "equal percentage of loss" recovery theory is likely the only option that would enable us to avoid the aggregation mechanism question in scenarios like the ones I'm considering.

Thus, to the extent that one espouses a theory of equal treatment of plaintiffs that is *not* the "equal percentage of loss" recovery theory, then the situations discussed here are examples of situations in the law that are *not* different-numbers problems, but which still confront the question of which aggregation mechanism is the most plausible.<sup>75</sup> This is significant, because up until here, I have

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75. While this is one way to classify these cases, it seems that a more accurate way to classify these cases would be to say that they indeed are different-numbers problems, but these different-numbers problems—unlike those I've discussed throughout the Article—do not involve two states of affairs for the same person where one state of affairs for the person is shorter due the person's life having been shortened by some event. Here, we do have a

only identified different-numbers problems as the types of situations where we confront the question of which aggregation mechanism is most plausible. The context discussed here in this extension Section thus expands the relevance of the discussions and conclusions in this Article.<sup>76</sup>

*C. Extensions Regarding Different-Numbers Problems in the Population-Wide Context*

This Article has addressed the ways in which the law confronts different-numbers problems. In so doing, the Article has focused almost exclusively on the ways in which private law remedies confront different-numbers problems when tasked with valuing lives of different lengths. It's important to briefly note here, though, that there are also other ways in which the law does and will confront different-numbers problems.

Recall that different-numbers problems arise whenever we are comparing the values of two wholes, where the two wholes are composed of different numbers of parts, and where the values of the wholes are a function of the values of their parts. While one context in which this occurs is in comparing lives of different lengths (which thus are composed of a different number of parts (i.e., a different number of moments)), another context in which this occurs is in comparing populations of different sizes (which thus are composed of a different number of parts (i.e., a different number of lives)). In the population-wide context, we again must choose which aggregation mechanism (be it AU, TU, or some other option) is most plausible for assessing the value of the whole, given the values of its parts. Again, the task of choosing which aggregation mechanism is most plausible is an extremely tricky one, where all possible accounts confront seemingly devastatingly counterintuitive implications. The umbrella name for these questions in the population-wide context is population ethics. While I will not delve deeply into the topic here, I will briefly mention various ways in which the law—and, more generally, society—confronts questions in population ethics (and thus ways in which the law con-

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different-numbers problem, but the comparison is between two chunks of time of different lengths, one of which belongs to one person and the other which belongs to a different person—but with both chunks of time that are compared being in the same state of affairs (i.e., in the same world, be it an actual or a merely possible world).

76. These comments still apply with the same force even if the appropriate terminology is different, as discussed in the previous footnote. While the comments would apply with the same force, the appropriate terminology would of course need to be substituted in for the terminology I currently use.

fronts different-numbers problems in a context other than the private law remedies context that has been the focus of this Article).

One example of a way in which society will confront different-numbers problems in a population-wide context arises in a context already discussed above: the context of self-driving cars. As I discussed, the programming of self-driving cars forces us to answer questions about how to compare lives of different lengths. That context, however, also requires us to answer questions about how to compare populations of different sizes—i.e., how to trade off deaths of a different number of people that would occur in different states of affairs. (For example, a programmer might have to decide how to trade off the death of one passenger against the deaths of three pedestrians.) Thus, technologies like self-driving cars not only require us to confront different-numbers problems in the context of comparing lives of different lengths (thus forcing us, at least implicitly, to value the existence of more or fewer years of life), but also different-numbers problems in the context of populations of different sizes (thus forcing us, at least implicitly, to value the existence of more or fewer lives).

While self-driving cars are one small example, policy topics confronting different-numbers problems in population ethics abound. Among the various areas that confront these questions are: where to put our medical and scientific research dollars (e.g., toward technologies and practices associated with saving lives of fetuses and infants, toward other life-saving technologies for adults, or perhaps, on the other hand, toward quality-of-life-enhancing technologies such as things like hip replacements); whether we should have laws or, more mildly, perhaps tax-incentives, that promote larger or smaller families; and, perhaps, questions about to what extent various resources should be conserved (assuming some type of relationship between resources and a population's size and between resources and a population's happiness).

These are just a few examples. Different-numbers problems in a population-wide context already are confronted by the law and by society in a huge range of areas, and it is crucial for us to articulate a plausible solution to different-numbers problems in the population-wide context as well.

#### D. *Summary Regarding Extensions*

Even without the considerations raised and discussed in the foregoing extension Sections, the discussions and conclusions of the Article pertain to a substantial number of cases that are not relegated to the mere periphery of the law. As we can now see,

however, the implications and effects of the Article's discussions are even more wide-ranging than we might have thought. This is both because (1) the types of situations addressed in the Article are likely to grow in prevalence and importance in the future as technology develops, and (2) because there are a variety of other ways—even here and now, in the present—in which the law confronts different-numbers problems, and these additional ways in which the law confronts different-numbers problems had not yet been discussed in the Article.

### CONCLUSION

The contributions of this Article have been both theoretical and practical. The theoretical: The discussions and conclusions of this Article provide analysis and insight in areas where there have been gaps in legal theory. This is the case for all of the discussions of the Article, but, perhaps most notably, the discussions regarding (1) precisifying and better understanding the notion of “the level that a person is (or was) at,” (2) different-numbers problems and their application to legal topics, (3) whether a person is harmed by having his death be sooner than it otherwise would be, and (4) whether a person should be compensated for having his life shortened, to name just a few of the topics addressed. These gaps in legal theory (as well as other gaps in legal theory that the Article addressed) exist and have existed, despite being gaps that have resulted in vagueness, imprecision, and under-description in notions and terms that are ubiquitous in the law. Noticing that these gaps exist and showing them to the reader is the key first step that this Article carries out. Second, the Article attempts to provide answers to many of the questions, and to at least lay the foundations for answers to others. The analysis here thus constitutes theoretical progress toward articulating a more precise and exhaustive theory underlying our legal principles. This is the theoretical contribution.

The Article's theoretical contribution also results in important practical contributions. Most important are the practical implications associated with potential compensation for a person who has his life shortened. As is, the law does not provide compensation to a person for his having his life shortened. This position is in great tension with commonsense intuitions according to which little if anything is a more serious harm than having one's life shortened.

If it turns out that our commonsense intuitions are correct, then there is an egregious gap in the law that needs to be filled. This Article helps lay the foundation for the inquiry into the questions of whether a person is harmed by having his life shortened, and if so, how great this harm is. Depending on what our answers are to these questions, the current state of the law might need to undergo significant changes. These changes would affect private law remedies and affect the lives of very many people. Furthermore, it seems very likely that our answers *will* dictate the result that changes *do* need to be made. Further still, these practical effects of the discussions in this Article (and of the discussions that it lays the foundation for) will likely grow in importance and prevalence as technology develops in the coming years. We must not lose time both (1) in determining whether a change should be made, and, if so, (2) in bringing about this change.

Lastly, the goals of this Article can also be described at a higher level of generality: These goals are to bring about a legal system that better furthers both fairness and efficiency. As for fairness: to the extent that the law can have remedies that more accurately (and precisely) track the harms that are incurred, this will minimize instances of over- and under-compensation and thus bring about greater fairness. As for efficiency: the more accurately (and precisely) that remedies track the harms that are incurred, the more that those two things will happen, both of which will result in greater efficiency: (1) to the extent that remedies begin to more accurately track harms in situations where the remedies had been either non-existent or too small to fully compensate a party, the more accurate tracking of remedies to harms will force parties to internalize the externalities they would otherwise impose, and this will lead to greater efficiency. Additionally, and conversely, (2) to the extent that remedies begin to more accurately track harms in situations where the remedies had been too large (either for an activity that currently is mistakenly thought to cause harm to others or that is correctly thought to cause harm to others but where the amount of this harm is overestimated), the more accurate tracking of remedies to harms will enable parties to avoid liability (or the threat of liability), the latter of which could have a distortionary effect on behavior, thus causing non-optimally-efficient behavior.

My hope is that the considerations in this Article and the changes to the law that they set in motion can make progress with respect to both fairness and efficiency.

