

PARTIAL VALUATION AND COST-BENEFIT ANALYSIS

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Regulators should not regulate where the monetized costs of the regulation are greater than the monetized benefits. This is true even if we accept that money is importantly incommensurable with many other goods that we as a society believe to be valuable, so long as monetary valuations are thorough, in the sense that they count everything for which people are willing to pay. The reason for this is not because money is somehow magical, or even necessarily more important than other goods; it is because it is poor policy to pay more for a regulation than the value people place on that regulation.

This approach to valuation, which I call “partial valuation,” provides distinct guidance both to OIRA, as the office responsible for reviewing draft regulations, and to agencies performing cost-benefit analyses. As a concrete application of this approach, I argue that, with the current information before it, OIRA should not permit NHTSA to promulgate the proposed rear-view camera regulation, because the monetized benefits do not justify the monetized costs. NHTSA should revisit its methods for monetizing benefits, and should reconsider whether people are truly unwilling to pay enough money to save the lives of a hundred people a year, almost half of whom are toddlers, given the costs they have calculated.

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What should regulators do if the monetized costs of a proposed regulation are greater than the monetized benefits?

For utilitarians who believe that everything can be completely expressed in terms of money, the answer is easy: when costs outweigh benefits, the regulation should not go forward.

But what if one’s theory of monetization is less complete: what if not all goods can be completely expressed in monetary terms? What if monetary valuations necessarily exclude important human values—values that cannot be completely expressed in terms of dollars and cents?

In past work, I have argued that this latter view—that many goods are incommensurable with one another—does not preclude the use of monetized cost-benefit analysis as a policy tool, because so long as even part of a value of a good can be expressed in terms of another, the exercise provides important policy guidance.¹

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¹ See Arden Rowell, [The Cost of Time: Haphazard Discounting and the](#)

In this short essay, I show that what I call “partial valuation”—the idea that goods may be partially expressed in terms of one another, even if they are not completely commensurable—indicates that regulators should refuse to regulate when the monetized costs of a proposed regulation are greater than the monetized benefits. The reason for this is not because money fully represents everything about the way people experience and value the world; it is because it does not make sense to pay more of any resource (including money) than one is willing to pay in that resource. This is true regardless of the expected magnitude of the value in other goods.

This simple point has complex implications. To see why, let us consider an example of how something can be partially valued in money.

Imagine that a child’s parents determine that, given all of their resource constraints, they are willing to spend \$25 to enter their high-strung but intelligent child in a science fair. They are also willing to spend significant hours of time helping the child with research and getting the child to relevant events, and they are willing to bear the likelihood of significant emotional drama as the child manages the stress of the event.

In this case, the parents may have incorporated some portion of the time and frustration they will have to spend into the amount of money they determined they were willing to pay. But there may still be something additional they would give in terms of time and frustration, which they may be unable to express further in monetary terms.²

Suppose now that the entrance fee for the science fair is \$50. Should the parents pay to allow their child to enter? Not if their willingness to pay—in money—is only \$25. If they have done a thorough job monetizing—if they have counted everything that can be counted in monetary terms—then \$50 is too much for them to pay. No matter how much time and frustration they would have been willing to invest, it is still too much of one resource: money.

This does not suggest that time, frustration, or any other goods that cannot be fully monetized are unimportant. Rather, it accepts that these goods may be (at least in some ways) incommensurable, and determines that it is still possible to make bad (or good) decisions in the face of that incommensurability. And it would be a bad decision for anyone to pay more in any resource for something than they want to pay in that resource.

Undervaluation of Regulatory Benefits, 85 Notre Dame L. Rev. 1505, 1510-1512 (2011).

² This inability might be practical—perhaps stemming from liquidity constraints, as where the parents are unable to access additional employment opportunities that would allow them to convert their time into money. Or it could stem from the basic incommensurability of the goods: from the fact that there is simply something different about goods like emotional frustration and money, even if they can sometimes be exchanged for each other.

Let us consider this in simple algebraic terms. Suppose that we determine that a group of people is willing to pay 25 of resource “a” to gain outcome x. (This is like the family who is willing to spend \$25 to enter their child in the science fair.) Suppose that they are also willing to pay 40 of resource “b” and 15 of resource “c.” (These might be hours of time to be invested in the project, and some measure of emotional investment.) This means that their willingness to pay for x is $25a + 40b + 15c$, such that they expect to be benefited by outcome x at least that much.

Now suppose that we learn something about the cost of gaining outcome “x.” If we learn that the cost is $50a$, then we know that the cost in “a” is greater than the family’s willingness to pay in “a.” So we know that this is not a good choice for them; the outcome costs more than they are willing to pay for it. And—so long as the variables are discrete, such that no portions of b or c can be expressed in a—we can determine that this is not a good choice even without any further information about further costs. It does not matter if it would actually cost nothing in b or c—significantly less than the group is willing to spend in those metra. It is still a bad bargain.

Does this mean that “b” and “c” do nothing in the analysis? No. They perform the same function “a” does, such that they should guide the decision wherever the cost (in that resource) outweighs the benefits (in that resource).

Nor do we have to be wedded to the notion that they are forever discrete from “a.” Suppose, for instance, that the parents are given the option to decrease the entry fee to the science fair to \$20—below their willingness to pay in dollars—if one of them is willing to act as the chair on the science fair committee. This makes the cost of entering the science fair higher in time, but lower in dollars. In algebraic terms, it might now be $20a + 100b + 10c$. If the parents’ willingness to pay is still only $25a + 40b + 15c$, then this is still not a good choice for them. That is because the cost—in “b,” or in this case, time—is greater than they are willing to pay in that resource.

How does this apply to regulation? It means that, so long as the effects of the regulation have been thoroughly monetized (i.e., so long as all portions of the regulation that can be expressed in monetary terms, have been expressed in monetary terms), regulations should be rejected if the monetized costs are greater than the monetized benefits. This is true regardless of the believed magnitude or importance of anything that is nonmonetizable. Why is this? Not because nonmonetizable goods are worthless, but because exceeding willingness to pay in any resource—including money—is a poor policy choice.

Now let us consider the implications of this argument in a concrete context. Consider the rule that the National Highway Traffic Safety Administration (NHTSA) has proposed to reduce what are known as

“backover crashes,” which are incidents “in which a non-occupant of a vehicle (most commonly, a pedestrian, but it could also be a cyclist) is struck by a vehicle moving in reverse.”³

The NHTSA estimates that there are 292 fatalities and 18,000 injuries from backover crashes every year.⁴ Most of these (228 fatalities and 17,000 injuries) are attributable to backover incidents involving light vehicles.⁵ Children under five represent 44% of the fatalities; many of these incidents “involve parents (or caregivers) accidentally backing over children.”⁶

In 2007, Congress responded to one of these tragic incidents, in which a father accidentally killed his toddler by backing over him with the family SUV, by passing the Cameron Gulbransen Kids Transportation Safety Act of 2007.⁷ Among other requirements, the law directs the National Highway Traffic Safety Administration (NHTSA), which is part of the Department of Transportation (DoT), to initiate rulemaking to require motor vehicles to have “an expanded rearward field of view to prevent backing incidents.”⁸

³ See National Highway Traffic Safety Administration (NHTSA), Notice of Proposed Rulemaking (NPRM), Federal Motor Vehicle Safety Standards, Rearview Mirrors, 2-3 (2010), available online at <http://www.nhtsa.gov/Laws+&+Regulations/Vehicles?ruleSortBy=fmvss&ruleOrder=asc> (subsequently NHTSA NPRM). Backover crashes are incidents “in which a non-occupant of a vehicle (most commonly, a pedestrian, but it could also be a cyclist) is struck by a vehicle moving in reverse.” *Id.* at 6-7.

⁴ NHTSA NPRM at 7.

⁵ *Id.*

⁶ *Id.*

⁷ See Cameron Gulbransen Kids Transportation Safety Act of 2007, 42 U.S.C. § 30111 (Public Law 110-189, 122 Stat. 639-642).

⁸ See Cameron Gulbransen Kids Transportation Safety Act of 2007 (Public Law 110-189, 122 Stat. 639-642). More specifically, the statute directs the Secretary to initiate a rulemaking “to expand the required field of view to enable the driver of a motor vehicle to detect areas behind the motor vehicle to reduce death and injury resulting from backing incidents, particularly incidents involving small children and disabled persons.” *Id.* at §2 (b). The Act explicitly reserves to the Secretary the authority to meet the standard through a variety of means: the “standard may be met by the provision of additional mirrors, sensors, cameras, or other technology to expand the driver’s field of view.” *Id.* The Act also gives the Secretary a deadline: to “prescribe final standards pursuant to this subsection not later than 36 months after the enactment of this Act,” *id.*, which was enacted on January 2nd, 2008. If the Secretary does not meet the (now passed) deadline, the Secretary is required to “establish new deadlines” and to “notify the Committee on Energy and Commerce of the House of Representatives and the Committee on Commerce, Science and Transportation of the Senate of the new deadlines and describing the reasons the deadlines specified under this Act could not be met.” *Id.* at § 4. One interesting question—not (yet?) attempted by NHTSA—is whether the agency could claim that this Act releases it from the requirement to perform cost-benefit analyses. I think this argument would fail, both because courts now apply a strong default assumption that Congress intends to permit cost-benefit analyses, except where they are explicitly barred, see *Entergy v. Riverkeeper*, and because the standard required by the Act could be met through the inclusion of a variety of means,

The rule is now under consideration at the Office of Information and Regulatory Affairs (OIRA), which is the final stop for review before it would become law.⁹

How should OIRA review this rule? To answer this question, it is helpful first to consider OIRA's role in the regulatory process.

OIRA is responsible for reviewing draft regulations,¹⁰ and for determining whether those regulations comply with the President's guidelines for policy analyses, particularly as set forth in two important Executive Orders: EO 12866 and EO 13563.¹¹ Under these orders, agencies are directed to "propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify)."¹²

In reviewing regulations, OIRA does not act as its own factfinder; rather, it relies on the record created by the promulgating agency. This is a practical constraint, as OIRA reviews over 500 rules a year, many of which have required years of work and research to draft.

Thus, for regulations like the rear-view camera rule, OIRA must determine whether the proposed regulation complies with the directions in the relevant executive orders. And a key part of that analysis is whether there can be a "reasoned determination" that, for the proposed regulation, the "benefits justify its costs."

Do the benefits of this regulation justify its costs, on the record

some of which might well pass a cost-benefit analysis, see Act §2 (b) (permitting, e.g., the standard to be met by inclusion of "additional mirrors").

⁹ OIRA in its current role is a relatively new office; it was created by Congress in 1980 by the Paperwork Reduction Act, but its role changed significantly in 1993 with the issuance of Executive Order 12866, which gave OIRA the responsibility to review draft regulations. President George W. Bush left 12866 in place, but amended it significantly with additional orders. President Obama revoked the W. Bush amendments in Executive Order 13497 ("Revocation of Certain Executive Orders Concerning Regulatory Planning and Review") (74 FR 6113, February 4, 2009). President Obama subsequently issued Executive Order 13563 (76 FR 3821, January 18, 2011) ("Improving Regulation and Regulatory Review"), supplementing the guidance in Executive Order 12866.

¹⁰ See Memorandum M-09-13, "Guidance for Regulatory Review" (March 4, 2009).

¹¹ See Executive Order 12866 (1993); Executive Order 13563 1b (2011) (stating that the order "is supplemental to and reaffirms the principles, structures, and definitions governing contemporary regulatory review that were established in Executive Order 12866").

¹² This is the language in President Obama's Executive Order 13563 1b, 76 FR 3821 (January 18, 2011), which "is supplemental to and reaffirms the principles, structures, and definitions governing contemporary regulatory review that were established in Executive Order 12866". EO 12866 directs that "[e]ach agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs." §1 (6).

presented by NHTSA? NHTSA estimates that the new regulation will cost between \$1.9 and \$2.7 billion annually.¹³ Like other agencies, the DoT “monetizes” reductions in mortality risk by looking at studies that ask people how much they are willing to pay for mortality risk reductions.¹⁴ For this analysis, NHTSA calculates that the “value of a statistical life” (VSL)—that is, the aggregation of people’s willingness to pay to avert small mortality risks that would lead us to expect, on average, a single death—justifies an expenditure of \$6.1 million per life saved.¹⁵ They expect the rear-view camera regulation to save between 95 and 112 lives annually.¹⁶ Under their calculations, this would mean that the regulation would cost either \$11.8 million or \$19.7 million per life saved.¹⁷

NHTSA concedes that this regulation is not cost-effective,¹⁸ and that “this cost per equivalent lives saved, even at the low end, is nearly double

¹³ Under the Unfunded Mandates Reform Act of 1995, Agencies are required to prepare written assessments of costs, benefits, and other effects of proposed or final rules that are expected to result in more than \$100 million in annual costs. NHTSA collected and disclosed this information about expected costs and benefits to comply with that mandate. See NHTSA NPRM 196-197; 178.

¹⁴ For a discussion of the methods agencies use to “monetize” mortality risks, see Arden Rowell, [The Cost of Time: Haphazard Discounting and the Undervaluation of Regulatory Benefits](#), 85 Notre Dame at 1517-1524. In this case, NHTSA is including additional costs in this figure, over and above people’s willingness to pay to reduce mortality risk: their \$6.1 million also includes their estimates of “medical care, emergency services, legal costs, insurance administrative costs, workplace costs, property damage and the taxed portion of lost market productivity (the untaxed portion is assumed to be inherently included in the VSL).” NHTSA NPRM 178-9 n.96.

¹⁵ NHTSA NPRM 179.

¹⁶ See NHTS NPRM 178. It would also reduce injuries by 7,072 to 8,374 per year. Id.

¹⁷ See id. The difference in the two estimates is based upon the discount rate that NHTSA chooses to apply. Since money has a time value—it can be invested and made to grow—agencies have to apply discount rates to future benefits to make them comparable to immediate costs. The “discount rate” is typically expressed in percentage terms, and indicates the percent of a dollar’s value that is lost for each year of delay. Discounting policy has enormous impacts on regulatory decisionmaking. See Cass R. Sunstein & Arden Rowell, [On Discounting Regulatory Benefits: Risk, Money, and Intergenerational Equity](#), 74 U. Chi. L. Rev. 171 (2007) (arguing that discounting regulatory benefits is theoretically justified because the calculation of those benefits is based on people’s willingness to pay for those benefits); Arden Rowell, [The Cost of Time: Haphazard Discounting and the Undervaluation of Regulatory Benefits](#), 85 Notre Dame L. Rev. 1505 (2010) (describing the impact of discounting, and warning that agencies’ current discounting policies may be leading to “double” discounting, and significant undervaluation of regulatory benefits). For this regulation, NHTSA identifies \$11.8 million as the cost per life saved at a 3% discount rate, and \$19.7 million per life saved at a 7% discount rate. The significant difference between the two arises from the fact the safety benefits the camera offers are likely to be spread out over a number of years.

¹⁸ “According to our present model, none of the systems are cost effective based on our comprehensive cost estimate of the value of a statistical life of \$6.1 million.” Id. at 175.

the Departmental value of a statistical life of \$6.1 million.”¹⁹ However, they contend that the benefits of the regulation nevertheless justify the costs. Why? Because “the quantitative [i.e., monetized] analysis does not offer a complete accounting.”²⁰

In describing how the analysis they have done is incomplete, the agency identifies several grave additional implications of backover crashes, over and above the loss of life; it highlights that “well over 40 percent of the victims of backover crashes are very young children (under the age of five), with nearly their entire life ahead of them,” and that the regulation would reduce “a qualitatively distinct risk, which is that of directly causing the death or injury of one’s own child.”²¹ It also recognizes that people may value the lives of children more than the lives of adults.²² And the report gestures as well at potential equity concerns related to backover deaths.²³ NHTSA then concludes that “[w]hile these benefits cannot be monetized, they could be significant.”²⁴ This leads them to the conclusion that the benefits of the regulation justify the costs.²⁵

In brief, then, NHTSA’s position is that, although the monetized benefits of the proposed regulation are substantially smaller than the monetized costs, the benefits still “justify” the costs because of nonmonetizable benefits.

NHTSA’s position is deeply problematic, both theoretically and in practical terms. I will address the practical aspects of their monetization—that is, their decision to leave large categories of potentially monetizable goods unmonetized—near the end of this essay. To begin with, however, let us provisionally accept NHTSA’s monetizations, and evaluate their conclusion that the benefits of a regulation can justify costs where the monetized benefits are significantly less than the monetized costs.

To evaluate this claim, let us recall the concept of partial valuation, with which this essay started. Partial valuation holds that, because it does not make sense to pay more (in any resource) than one is willing to pay (in that resource), even partial valuations provide important guides to policy. When the cost of a policy exceeds willingness to pay, the benefits of the policy—at least insofar as they are calculated based on willingness to pay—do not justify the costs. Or in other words, the “benefits” of these regulations (such

¹⁹ See *id.* at 178.

²⁰ *Id.* at 179.

²¹ *Id.* at 179.

²² *Id.* at 180.

²³ *Id.* at 179.

²⁴ *Id.* at 179.

²⁵ *Id.* at 179 (“Taking all of the foregoing points alongside the quantifiable figures and the safety issue at hand, the agency tentatively concludes that the benefits do justify the costs.”)

as mortality risk reductions) are calculated in terms of people's willingness to pay to acquire those benefits. People's willingness to pay to acquire regulatory benefits *can* be used to "justify" regulatory costs, but only where that willingness to pay is at least as much as the monetized costs. Where people are not willing to pay the cost of a regulation, it makes no sense to claim that people's unwillingness to pay "justifies" the cost of the regulation.

Nor does adding in benefits that "cannot be monetized" change this fact. If the regulation requires more dollars to implement than people are willing to pay for the effects of that regulation, the regulation should not be implemented. This is because agencies should not commit to spend more of any resource than people are willing to spend in that resource.

We can convert this argument into algebraic terms. NHTSA has told us that it believes people are willing to pay \$6.1 million per life saved. In addition, the regulation would give benefits of what we will call "b" (saving additional life years over the average life saved), "c" (reducing the risk that people will inadvertently cause the death of their own child), "d" (the extra value that people attach to children's lives over adult lives), and "e" (the equitable benefit NHTSA sees to adopting the rule). Let us accept for the moment that NHTSA is correct in claiming that these benefits "cannot be monetized," even a little bit. In that world, the benefits are \$6.1 million + b + c + d + e. But the costs are (at least) \$11.8 million. Since this exceeds the \$6.1 million people are willing to pay for the benefit, this regulation cannot be justified by reference to a cost-benefit analysis. And this is true regardless of how important we believe b, c, d, and e to be. The cost in at least one resource—dollars—exceeds willingness to pay, so the regulation should not go forward.

With this argument in mind, what should OIRA do as it is faced with the review of NHTSA's rear-view camera rule? Without any amendments from NHTSA, OIRA should reject this regulation on the grounds that it does not comply with the executive requirements that the benefits of a proposed regulation justify the costs.

Should this conclusion be upsetting, given that we have reason to believe that between 95 and 112 lives will be lost in each year this regulation is not in force, and that almost half of those will be the lives of small children? In other words, should we doubt this conclusion in the face of the dangers of regulatory delay?

No. We should take the potential costs of delay very seriously. But we should also take the costs of unjustified regulation seriously. Regulators are constantly facing a stream of demands for regulation, and individual and social resources are limited. If society spends billions of dollars on the rear-view camera regulation, then it cannot spend those dollars on education,

health care, security, environmental cleanup, or other life-saving regulations that might save many more people's lives. If people are really not willing to spend the money that it would take to pay for the rear-view camera regulation, we cannot assume that this is because they do not care about the tragedies that occur each year through backover crashes. Rather, it is because they have identified other places to put their money that are even more important to them, including applications that may avoid even more tragedies.

This means that the rear-view camera regulation is only worth purchasing—now or later—if society is willing to pay the monetary costs. Nonmonetizable benefits—if they are truly nonmonetizable—cannot justify overpaying in dollars.

Which brings me to the final point of this essay: agencies—and regulatory theorists—must be careful to distinguish between those benefits that are truly nonmonetizable, and benefits that can be only partially monetized.

Consider something which seems to be importantly incommensurable with money—perhaps the value of listening to bird song outside one's bedroom window. It would be a sad and flat world where we believed that waking up to bird song was in all ways identical to any amount of money. Nevertheless, a person who values bird song might be willing to pay some amount of money—say \$5—to secure the ability to listen to it.

Note that the fact that money and bird song might be exchanged for one another (as through environmental policies that support healthy bird populations) does not make the goods completely commensurable. To see this, suppose that the value of “waking up to bird song” is expressed as “ w .” Suppose further that the willingness to pay for w is \$5. If the two goods are substantively different from one another, there is no reason to believe that $(w - \$5) = 0$. Rather, there is likely to be some kind of remainder—call it w_r . We might reasonably say that w_r is nonmonetizable, or nonquantifiable, insofar as it is the portion of “waking up to bird song” that is valued, but not expressible in terms of a person's willingness to pay in dollars. But it would be a mistake to confuse w with w_r : to treat the general experience of “waking up to bird song” as nonmonetizable, when as at least a portion of the experience can be monetized.

How, then, should we think of the \$5 that the person is willing to pay to listen to bird song? As a partial monetization: a partial valuation that describes how “waking up to bird song” can be expressed in monetary terms. The fact that this partial monetization tells us only a portion of the total worth of bird song does not make the monetization worthless; rather, it gives us an important starting point for decisionmaking.

Are there things that cannot be monetized at all—for which people are

willing to pay no money whatsoever, even though they have value in other ways? Possibly. One likely set of candidates for this category are goods for which there is a social stigma to commodification, such as where the good is defined by reference to its lack of susceptibility to exchange. These might include goods like gifts—which lose their gift-like status if they are exchanged (at least directly) for money—or respect (at least for those who believe that respect must be earned through work or other nonmonetary means, rather than bought with money). Although people may value these goods, it seems plausible that they may be willing to pay no money for them.

But these goods are extreme examples, and are unlikely to appear in a regulatory cost-benefit analysis, at least as those documents are currently prepared. Rather, the kinds of goods with which regulators deal tend to be more like the goods that NHTSA identified as nonmonetizable: goods which can almost certainly be at least partially valued in monetary terms.

To see this, let us look at the particular types of benefits that NHTSA says “cannot be monetized.”

Consider NHTSA’s claim that those affected by the rear-view camera regulation are often children, who have many expected life-years ahead of them. It is frankly bizarre to suggest that people are not willing to expend money in exchange for extending life. In fact, there are large and robust methodologies that have grown up for just this purpose.²⁶ The Environmental Protection Agency even experimented with using one of them, called the “Value of Statistical Life Years,” or VSLY.²⁷ EPA attempted to use VSLYs in lieu of the more familiar VSL, which attaches the same monetized value per life saved, regardless of how many life years are expected.²⁸ There was an enormous political fallout: the move was bitterly resisted by the AARP, and popularly dubbed the “senior death discount,” on the grounds that it would tend to encourage spending of less money to protect the elderly.²⁹ Of course the current approach—of using VSL instead of VSLY—acts more like a “child death discount,” which is the problem with which the NHTSA is struggling. An interesting question here, given that many of the non-child victims of backover crashes are

²⁶ For a discussion of two, see Lisa A. Robinson, How US Government Agencies Value Mortality Risk Reductions, 1 Rev. Envtl. Econ. & Pol’y. 283 (2007) (describing agencies’ use of the Value of a Statistical Life (VSLY) approach and the Quality-Adjusted Life Year (QALY) approach.)

²⁷ See EPA

²⁸ Id.

²⁹ See New York Times, E.P.A. Drops Age-Based Cost Studies (May 8, 2003), available online at <http://www.nytimes.com/2003/05/08/us/epa-drops-age-based-cost-studies.html?pagewanted=all&src=pm>.

elderly,³⁰ is whether these valuations would tend to “even out” if VSL is used as the only method for calculating the loss.

Insofar as NHTSA is claiming that life extension is an additional benefit, over and above VSL, there is no need to consider the supplemental addition of a VSLY value as any kind of “discount.” Although agencies considering mortality valuation techniques have traditionally assumed that VSL and VSLY are substitutes for one another³¹—perhaps in part because VSLY has traditionally been derived from VSL—there is no logical reason that the two approaches must be mutually exclusive. It could be well that people are willing to pay some amount to prevent any death. And at the same time, they are also willing to pay a premium for life extension. If that is the case, then it is appropriate for regulators to spend up to the VSL to prevent any death, and to pay a supplemental amount of money per life year extended—per VSLY.

If NHTSA is right to claim that mere VSL does not capture important aspects of the loss of life years borne with the loss of a child, then, it seems very unlikely that they are also right to treat this value as if it “cannot be monetized;” as if people are willing to spend no money at all to extend childrens’ lives. NHTSA would do better to attempt a partial monetization to express the amount people are willing to pay in money per life year extended.

NHTSA also claims that there is a qualitative difference between a general death, and the type of death that results when a parent accidentally kills her own child.³² NHTSA describes this benefit as nonmonetizable as well. If NHTSA means to describe the effect as incommensurable to money, that seems highly plausible. There is no way to conceive of killing one’s child as equivalent to any amount of money. But as we have seen, the incommensurability of these two things should not lead NHTSA to the conclusion that no portion of this effect can be monetized. So long as people are willing to pay some amount of money to avert this type of tragedy, the effect can be monetized.

A related but distinct effect of the proposed regulation that NHTSA does not monetize is what they identify as a special harm of the death of a child.³³ Again, can this truly not be monetized? Only if we assume that the only way to monetize is if money is used as a complete measure of a good. But for policy purposes, where we are trying to determine how much money

³⁰ 33% of the fatalities are persons 70 years or older. See NHTSA NPRM n.100.

³¹ VSLY is typically derived by dividing the VSL by the discounted expected number of life-years remaining. For a useful and readable summary of various valuation practices, see Lisa Robinson, [How US Government Agencies Value Mortality Risk Reductions](#).

³² See NHTSA NPRM 179.

³³ *Id.* at 179.

to pay for a regulatory effect, the appropriate question is: are people willing to pay any money for this effect, either to prevent it or to secure it? And in this case, the answer to the question appears to be that people are indeed willing to pay significant amounts of money to prevent the death of a child, over and above what they are willing to pay to reduce mortality risks to other adults, or to themselves.³⁴ NHTSA itself cites to a careful article by James Hammitt and Kevin Haninger that finds that people are willing to pay \$12-15 million for children, even where they will only pay \$6-10 million for adults;³⁵ yet it chooses not to incorporate this information into its analysis.³⁶

Finally, it is worth addressing NHTSA's treatment of equity, which it also describes as nonmonetizable. It is difficult to know how plausible this contention is, as NHTSA does not identify the particular aspects of this rule that it sees as causing equity problems. In fact, this portion of the analysis reads a bit mysteriously with regard to its approach to what NHTSA calls equity: in defining the term and the problem, the NHTSA report explains briskly that "Executive Order 12866 also refers explicitly to considerations of equity. ('[I]n choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits [including ... equity],[D] and there are strong reasons, grounded in those considerations, to prevent the deaths at issue here.'³⁷ The "strong reasons" are not articulated, perhaps because NHTSA—like other agencies and regulatory theorists—is struggling to find a way to fit equity into formalized analytical processes like risk analysis.³⁸ But as difficult as it may be to fully define what is equitable, is it plausible to assume—as NHTSA implicitly does here—that people are willing to pay no amount of money to secure equity? For example, is the no portion of the cost of our judicial system attributable to people's willingness to pay for equity? Perhaps not, or perhaps that kind of equity is not the kind of equity that NHTSA means to address in this

³⁴ See James K. Hammitt and Kevin Haninger, *Valuing Fatal Risks to Children and Adults: Effects of Disease, Latency, and Risk Aversion*, *J. of Risk and Uncertainty* 40(1): 57-83, 2010 (finding, in a stated preference study, that people are willing to pay \$6-10 million for adults and \$12-15 million for children).

³⁵ See NHTSA NPRM 179 n. 99, citing J.K. Hammitt and K. Haninger.

³⁶ To the extent that NHTSA explains this decision, it does so by emphasizing that this literature is still in its infancy. See NHTSA NPRM 179 n. 99. It is a fair and difficult point that it can be hard for agencies to know when to incorporate early empirical findings into their analyses. My general thought on this is that, where the empirical data appears to provide some guidance, agencies do well to take heed. This is particularly true where, as here, the alternative is to work under assumptions that are highly implausible, such as that people are willing to pay no supplemental amount of money to prevent the death of a child.

³⁷ See NHTSA NPRM at 179 (omissions and amendments in original).

³⁸ For a complex but deeply thoughtful attempt to do just this, see Matt Adler, *Well-Being and Fair Distribution* (Oxford University Press 2011).

regulation. But it is by no means obvious that equity is inimical to monetization, at least insofar as monetization is understood to represent only a partial valuation of underlying goods.

In sum, then, it seems plausible that many of the effects of the proposed rear-view camera rule cannot be completely expressed in monetary terms—that, for salient example, there can be no dollar equivalent to the experience of accidentally killing one’s child. But this should not be taken—as NHTSA appears to take it—to mean that people are willing to pay no money whatsoever to prevent any of these effects from occurring. If people are willing to pay any amount of money to prevent any of the serious harms NHTSA identifies as “nonmonetizable”—including the loss of children, either as a particularly protectable group or because they have so many life years ahead of them, and the possibility of parents accidentally killing their own children—then NHTSA has failed to thoroughly monetize the effects of the regulation. If NHTSA revisits its monetization policies to account for the possibility of partial monetization, which counts people’s willingness to pay money for goods whether or not the goods are completely expressible in terms of dollars, it is likely to find that the monetizable benefits of this regulation are significantly higher than it has currently calculated.³⁹

³⁹ Nor are these the only ways in which NHTSA’s monetized valuations look to be low. For example, NHTSA also does not account for the effect of income growth over time in its calculation of VSLs; this will tend to reduce the valuations because the effects of the regulation are spread across many years. See Cass R. Sunstein & Arden Rowell, On Discounting Regulatory Benefits: Risk, Money, and Intergenerational Equity, 74 U. Chi. L. Rev. 171, 186-187 (2007) (arguing that one way in which agencies’ VSLs can underestimate people’s willingness to pay is where they fail to account for the effect of income growth over time); Melissa Luttrell, The Case for Differential Discounting, 80 Wm. & Mary Policy Review 80, 126-127 (2011) (arguing that agencies should respond to this argument by adjusting their VSLs); Ben Trachtenberg, Tinkering with the Machinery of Life, 59 UCLA L. Rev. Disc. 128 (2012) (noting that some agencies have now adopted this framework); Polly Trottenberg & Robert S. Rivkin, U.S. Department of Transportation, Treatment of the Economic Value of a Statistical Life in Departmental Analysis (July 29, 2011), available at http://regs.dot.gov/docs/Value_of_Life_July_29_2011.pdf. DoT directs analysts to “augment the base-year VSL by 0.877 percent per year to estimate VSL of any future year in base-year dollars before discounting to present value.” Id. at 2. This latter guidance only came out after NHTSA performed its analysis in the rear-view camera rule. That analysis did not include adjustments for future income growth. See Report p. 178 (noting that the analysis relies on the 2007 Departmental value of \$5.8 million—a number that was updated to \$6.2 million in the 2011 Memorandum on the Treatment of the Economic Value of a Statistical Life—and listing a number of “adjustment factors,” none of which include future income growth). Other potential undervaluations stem from NHTSA not adjusting its VSLs for time indeterminacy in the initial calculations, see Arden Rowell, The Cost of Time, 85 Notre Dame L. Rev. at 1534 (2010) (suggesting ways in which regulators can improve time-determinacy, so that they do not inadvertently double-discount mortality valuations), and from not counting third-party valuations, see Eric Posner & Cass Sunstein, Dollars and

In sum, there is good reason to suspect that NHTSA's estimates of the monetized benefits of the rear-view camera rule do not thoroughly represent the amount of money society is willing to pay for the effects of that regulation. But if NHTSA's numbers are too low, the appropriate remedy is for NHTSA to fix those numbers by performing a thorough monetization—not to regulate when the analysis we have tells us that the monetized benefits do not outweigh the monetized costs.

Regulators are often averse to attempting to monetize the nonmonetary effects of regulations, particularly when those effects are deeply emotional, as they are wherever regulation touches upon the death of small children. Such effects are commonly described as “nonquantifiable,” and are left entirely unmonetized.

Insofar as this hesitation stems from concern about the incommensurability of money and other goods, it should cease immediately. Incommensurability does not preclude partial valuation, i.e. the partial expression of a good's value in terms of another good. Even something as horrific and emotionally laden as the death of a child can therefore be partially monetized, i.e. partially expressed in terms of money, so long as people are willing to pay money to prevent it from occurring. Emotional goods like these are difficult to think about, and even more difficult to monetize, but refusing to monetize them at all is not a reasonable solution.

These partial valuations perform a critical role in the regulatory process, because they help to inform the question of how much people are willing to pay to secure the effects of a regulation. In a world of pervasive resource constraints, and pervasive demands for important life-saving interventions, regulators do society no service by requiring it to shift resources to cover regulatory costs that are too high.

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Death, 72 U. Chi. L. Rev. 537, 539-40 (2005).