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Reply to Dr. Tengs' Response

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Editors,

The primary aim of my article "Five-Hundred Life-Saving Interventions and Their Misuse in the Debate Over Regulatory Reform"[1] was to dispel the myth that had grown up around the studies Dr. Tammy Tengs published with Dr. John Graham: that is, the idea that government regulation is responsible for, in Dr. Graham's words, the "statistical murder"[2] of 60,000 people in the United States every year. As I demonstrated in my article, nothing in the work of Drs. Tengs and Graham supports Dr. Graham's recurring charge of statistical murder through regulation. And nothing in Dr. Tengs' response to my article casts doubt on this, my most important conclusion. I will discuss in sequence the comments Dr. Tengs does provide in her response to my article.

First, Dr. Tengs responds to my observation that a large percentage of the toxin controls included in their studies – indeed, seventy-nine out of ninety of the toxin controls analyzed in their "Opportunity Costs" study – were never mandated by a regulatory agency. Dr. Tengs implies that I believe it is a general flaw of their work that they included unimplemented life-saving measures in their analysis. I do not believe this. However, it clearly *is* a mistake to refer to life-saving measures that were never undertaken *as if* they were undertaken. As I observe in my article, Dr. Graham himself has made this mistake more than once.

In addition, it would also be a mistake to "reallocate" money from unimplemented programs to implemented ones. If, for example, Drs. Tengs and Graham wrongly assumed that some unimplemented environmental controls had in fact been implemented, and "reallocated" the costs of the unimplemented programs, then the effect would have been to "take" money from programs that were not in fact spending any money in order to give it to other programs. In my article, this assertion had to remain little more than speculation because Drs. Tengs and Graham declined to respond to my requests for basic information about their research. While writing my article, I asked Drs. Tengs and Graham what I thought was a quite straightforward question: for the seventy-nine toxin controls that had not

1. Lisa Heinzerling, *Five-Hundred Life-Saving Interventions and Their Misuse in the Debate Over Regulatory Reform*, 13 Risk: Health, Safety & Environment 151 (2002).

2. H.R. Comm. on Science, *Risk Assessment and Cost Benefit Analysis*, 104th Cong. 1124 (1995) (written testimony of John D. Graham).

been required by regulation, but that were included in their "Opportunity Costs" study, what implementation rate had the authors assumed? Neither author responded to my inquiry.

Despite Dr. Tengs' renewed opportunity, in her response to my article, to answer my basic question about her research, she still has not supplied any specific response. For at least fifty-nine of the toxin controls, we do know that the authors assumed an implementation rate of greater than zero even though these very expensive controls were never mandated. We also now know that Drs. Tengs and Graham concluded that at least some firms have voluntarily undertaken toxin controls costing millions of dollars per life saved. We are told that the basis for this questionable assumption was "expert elicitation," but we are told nothing about why the "experts" viewed this conclusion as reasonable. Nor are we told which rules were assumed to be voluntarily implemented and to what extent. Ironically, as Administrator of the Office of Information and Regulatory Affairs, Dr. Graham has warned agencies against accepting research results based on just the kind of unavailable and irreproducible data on which his own studies appear to rely.

Dr. Tengs also defends the "Opportunity Costs" selection of 187 life-saving interventions by saying that there is "no way of knowing whether the 187 analyzed interventions are representative of the universe of lifesaving interventions." This claim is mistaken. Ninety of the interventions were toxin controls; of these ninety interventions, fully eighty-one arose from statutory provisions that are either formally or effectively obsolete and that were so even before Tengs and Graham's studies were published. For these interventions, at least, comprising almost half of the data set of this study, the one thing we do know is that they are not representative of the regulatory universe.

Second, Dr. Tengs defends the decision to limit her research to the opportunity costs of life-saving interventions, saying that this limit was most sensible from a "scientific perspective." It may well be true that Dr. Tengs' analysis was made more tractable and manageable by the decision to limit the analytical universe, but it also remains true that many more "statistical murders" would have been uncovered by extending their analysis to, say, the vast spending on government subsidies for resource extraction, military defense, and even consumer products. Indeed, the logic of Drs. Tengs and Graham's own research would imply that such an extension would make sense: after all, the very premise of their research is that we should enlarge our range of vision to consider the opportunities we are missing by spending resources the way we do now. If one were interested in maximizing life-saving, one would think the *last* programs to be cut –

rather than the first and only, as in Drs. Tengs and Graham's research – would be programs that *save lives*.

Third, Dr. Tengs observes that many non-environmental interventions have benefits that were not captured in her analysis, and thus it is not clear, she says, that the analysis is systematically skewed against environmental interventions. I agree with the first point but am much less clear about the second. Safety and medical interventions – which generally fare better than environmental measures in Dr. Tengs' analysis – have *humans* as their central concern; helmet laws, for example, cannot by any stretch of the imagination be described as ecologically beneficial. Environmental controls, in contrast, almost invariably protect *both* humans and ecosystems, and thus a singular focus, in cost-effectiveness analysis, on human lives or life-years saved will miss much of what environmental law is about.

Fourth, Dr. Tengs defends her studies' assumption that not all human lives are equally worth saving. As for the inequality inherent in considering life-years rather than lives saved, Dr. Tengs states that this approach does not discriminate against the elderly because "an intervention that extends the life of an elderly person by five years would be treated the same as one that extends the life of a young person by five years." True enough, but guess who mostly falls in the category of people whose lives can be extended only five years? The elderly. And guess who mostly falls in the category of young people whose lives can be extended only five years? The sick. Both of these five-years-left-to-live groups will systematically be deemed less worthy of life-saving interventions, under Dr. Tengs' approach, than will the young and healthy. Dr. Tengs and others are free, of course, to defend this kind of inequality as a matter of policy advocacy, but they should keep in mind that the approach they are defending is not a scientific choice.

Dr. Tengs also defends her use of the technique of discounting, which steeply devalues lives saved in the future compared to lives saved today. She cites the findings of the U.S. Panel on Cost-effectiveness in Health and Medicine as support for this methodology. Again, however, the decision whether to treat lives saved in the future – including lives in future generations – differently from lives saved today is not a scientific choice; thus it is not the kind of choice that an appeal to professional consensus will resolve. Tengs also wheels out the shopworn argument that discounting is necessary because without it we will never spend a penny on life-saving, but instead keep our life-saving money in the bank forever, watching it accumulate interest for decades, even centuries, without ever spending it to alleviate human suffering. This claim, formally known as the Keeler-Cretin paradox, is fantastical.

With regard to discounting, Dr. Tengs also implies that it makes little difference to the outcome of cost-effectiveness analyses because toxin controls save so few lives to begin with. In other research, however, I have demonstrated that discounting future lives can increase the costs per life saved of toxin controls by several orders of magnitude.[3] Moreover, although Dr. Tengs is correct that many toxin controls are estimated to prevent only a handful of cancer cases, in many cases cancer prevention is not the primary purpose of toxin control. In addition – and here we circle back around to the beginning – most toxin controls that prevent, say, only a fraction of a cancer case, are the same toxin controls that have never been mandated by any regulatory agency.

Finally, Dr. Tengs responds to my criticisms of John Graham's misuse of his own studies by saying that these issues were considered during the hearings on Dr. Graham's nomination to head the Office of Information and Regulatory Affairs. Indeed they were. And, after this airing of Dr. Graham's views, Dr. Graham's nomination received thirty-seven negative votes – more negative votes than any of President Bush's other nominees for offices relating to environmental regulation.

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3. Lisa Heinzerling, *Regulatory Costs of Mythic Proportions*, 107 Yale L.J. 1981 (1998).

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