JONATHAN CANNON: Hi, everyone. I'm John Cannon and we are pleased to welcome you to a book panel sponsored by the University of Virginia's program and law, communities and the environment in place and by the *Virginia Environmental Law Journal* and the *Virginia Environmental Law Forum.*

Our panel will discuss an important new book-- *Reviving Rationality, Saving Cost Benefit Analysis for the Sake of the Environment and Our Health.* The book is co-authored by Mike Livermore and Ricky Revesz. Mike and Ricky here with us to respond to questions about the book from our guests, Amy Sinden and Jonathan Adler. So this is a very distinguished panel. And I'm at a real risk of running out of superlatives in this introduction. So I'll try to make it short and we'll get quickly to the meat of the matter.

First our guests, Amy and Jonathan. Amy is the James E. Beasley Professor of Law at the Beasley School of Law at Temple University. She has written widely on cost benefit analysis and policymaking and has twice had her articles selected as among the best environmental articles of the year. She sits on the Board of Directors of the Center for Progressive Reform.

Jonathan Adler is the Johann Memorial professor and the Director of the Coleman P. Burke Center for Environmental Law at the Case Western Reserve School of Law. He is the author of numerous books and articles on environmental and administrative law and is among the most highly cited legal academics in these fields.

To our authors, Ricky Revesz is a Lawrence King Professor of Law and Dean Emeritus at the New York University School of Law. He has published many highly cited books and articles advocating for protective and rational climate change and environmental policies. Ricky leads the Institute for Environmental Integrity at NYU which works to improve the quality of government decision-making.

Ricky's co-author, my esteemed colleague here at the University of Virginia School of Law, is Mike Livermore. He is the Edward F. Howrey Professor of Law. And like our other panelists, he has published numerous articles in major law reviews and journals on environmental law and regulation, and has also undertaken work in diverse other fields, including computers, computational analysis, and neurology as it relates to environmental valuation and decision making. He was the founding executive director of the Institute for Policy Integrity and remains a Senior Advisor to the Institute.

With Ricky, he co-authored *Retaking Rationality* the 2008 prequel to the book we're going to discuss today. As we will see, a lot has happened in the regulatory and policy world since 2008. And that will be the subject of our discussion.

So we'll begin with an introduction to the book by the authors. What is their argument? What do they hope to accomplish with the book? I'm reserving the right to throw in some questions, but our main source of questions will be from our guests Amy and Jonathan. We'll also have the opportunity to draw from questions submitted by the audience. So those of you who are watching, please post your questions on the Q&A tab that's on your screens. And we'll pick them up from there.

Mike and Ricky, if you will proceed please.

MICHAEL LIVERMORE: Well, thanks very much, John, for the kind introduction and thanks to our guests for joining us today. And thanks to the participants for joining us as well. So I'll just speak for a few minutes to briefly discuss the first-- some of the arguments of the book and a little bit about our goals in writing it.

So as John mentioned, we published *Retaking Rationality* which came out in 2008, right at the end of the George W. Bush administration. Very briefly, the argument in that book was that cost benefit analysis was an entrenched part of the regulatory process in the United States and that the political dynamics around cost benefit analysis were not particularly productive in part because many progressive groups had removed themselves from the conversation about how cost benefit analysis ought to be conducted.

And so we argued that cost benefit analysis should be seen and should become a neutral tool for policy analysis, not something that is kind of used from one side of the perspective. And at that time, the cost benefit analysis was frequently associated with an anti-regulatory bent. So that was 2008.

What we do in this book is essentially update us to the current moment. And much has happened, as John said. In several chapters, we cover the-- is that during the Obama years, the president and the Obama administration more generally was able to achieve a new kind of synthesis that merged respect for cost benefit analysis, that merged respect for expertise and evidence with a progressive regulatory agenda. And this was a major accomplishment, as building on earlier efforts, including during the Clinton administration. But the Obama administration was really kind of a new level of this-- achieved this new level this synthesis.

And over the course of the eight years of the administration, many important rules that protected the environment, public health, served to stabilize financial markets and the like were adopted, that frequently those rules were supported by strong cost benefit analyses, that generally, they had substantial net benefits. And so this is what happened during the Obama years.

We also detail in the book the reaction of some opponents of the Obama administration to this synthesis. And part of what we argue is that opponents of the administration, rather than acknowledging the cost benefit analysis was the terms of the conversation and then debating various particular questions or regulatory policies or what have you, there was an attempt to shift the conversation away from cost benefit analysis, cost and benefits, rationality and regulatory decision making, and towards other attitudes towards other terrain. So the administration was accused of engaging in a regulatory tsunami or engaging in a war on coal or adopting job-killing regulations.

And these kind of rhetorical moves, I don't know how they were intended, but the effect is to take attention off of costs and benefits and put them on to some other politically salient issue. So one of the things that we do is kind of document this change. And then, ultimately, we spend-- these developments serve as the backdrop for the Trump administration. So the Trump administration comes into power in 2016. And part of what we do in the book as well is document the many abuses of cost benefit analysis during that time. Ricky, you're muted.

RICHARD REVESZ: So I'll take it from there. So the middle part of the book categorizes the analytical failings of cost benefit analysis in the Trump administration in some detail. And rather than go to this to tell you about this chapter by chapter, which would be boring and would take way too long, I'll give you two paired examples. So I'm going to talk about four regulations to show both that the analytical techniques of the Trump administration [INAUDIBLE] were totally outside of not just the mainstream of economic analysis. But a lot of this stuff was something that no respectable economist would say was even plausible.

But then, in addition to doing that, they didn't even act consistently across regulations. So that what essentially happened is that they picked whichever side of an argument supported the regulatory bent and didn't even worry about the fact that they were picking different sides of arguments for different regulatory proceedings.

So one examples, one of the things that got a lot of attention was the Trump administration's treatment of co-benefits or indirect benefits. There is well-established economic approach to cost benefit analysis that says that benefits, whether direct or indirect, should be taken into account in analyzing the effects of regulation. And this is essentially embodied in a Circular A4, which is the guidance to agencies on cost benefit analysis that dates back to 2003 in the George W. Bush administration. But basically, the consistent federal agency approach of looking at co-benefits dates way back to the Reagan administration and all the way to the Obama administration.

So the Trump administration first called this into question in a very visible way when it reviewed the decision that had been made by the Obama administration that the regulation of hazardous air pollutants from power plants was appropriate and necessary. This is a regulation that had enormous net benefits. The net benefits ranged between $36 and $90 billion. The costs were $9.6 billion.

But it turned out that of the quantified and monetized benefits, the bulk were co-benefits. It's not that direct benefits were insignificant, they actually were. But only a small fraction of the direct benefits could be quantified and monetized because of limitations in analytical techniques. And the Trump administration basically said that it would not look at the co-benefits in deciding whether this regulation was appropriate and necessary and eventually concluded that regulating the hazardous air pollutants of power plants was not appropriate and necessary.

So you might think-- and they've said other things in other contexts, including the proposed-- there's a proposed regulation, a proposed rule on how to do cost benefit analysis for clean air regulations by EPA, which also calls co-benefits into question. That rule hasn't been finalized but the EPA administrator has indicated that he plans to finalize it before the end of the administration.

So now fast forward through a different regulation. The Trump administration has decided to significantly roll back the clean car standards. That is the standards limiting the greenhouse gas emissions of cars and light trucks. And this is a regulation that EPA does jointly with the Department of Transportation, which sets corporate average fuel economy standards.

So here, the cost benefit analysis is truly terrible. I mean, down to arithmetic errors, we don't have to get into that. But on the co-benefits issue, it turns out that the only way to come even close to plausibly justifying the regulation is through by looking at co-benefits. And that's exactly what the Trump administration does. The big numbers for them on the benefits side are on safety benefits from driving cars. I mean, actually, most people think that those benefits are made up. But for these purposes, it doesn't matter. Assume they're real. And now focus on the inconsistency.

So here, from EPA's perspective the safety benefits are definitely co-benefits because EPA doesn't have any jurisdiction to promote the safety of vehicles. I mean EPA's only interest in this as in reducing emissions. That is the direct benefit under which this regulation is promulgated. And there's no question that that's the case.

Department of Transportation is only slightly more complicated. They actually do have a jurisdiction to regulate the safety features of cars, but not under the program under which the CAFE standards are set. The CAFE standards date back to the energy crisis the 1970s. And they're designed to reduce our dependence on foreign oil. And so the direct benefits are the reductions in gasoline consumption.

Safety benefits are plausible. But they are co-benefits. So here, the Trump administration is basically saying, look, in two important regulatory proceedings we're prepared to take exactly the opposite sides of the argument. Embrace co-benefits when that helps deregulation. Reject co-benefits when rejecting them helps deregulation.

So they're both acting inconsistently with the received economic wisdom. No respectable economist would say that ignoring co-benefits is a good idea. They're acting inconsistently with the consistent regulatory practice of administrations of both parties going decades. And then, they're not even doing it consistently.

And I'll give only one other example. So this involves the use of transfer payments. Transfer payments is when one party pays money to another party, those typically, for cost benefit purposes, are not considered either costs or benefits. They're just transfers because basically if one payment is a cost then the other receives a benefit and they kind of cancel out. To the extent that the payment that actually has incentive effects of someone as a result of having to make a payment undertakes less of some undesirable activity that is actually a benefit. But that's like the change in behavior that comes to from transfer payment, not the transfer payment itself.

The Trump administration decides to lower the royalties paid by companies extracting fossil fuels from federal lands. Main benefit it cites is savings to the companies extracting these fossil fuels. Not really even acknowledging the fact that on the other side of the savings is a shortfall for the federal treasury.

So first, it shouldn't have been counted as a cost or benefit in the first place. That's inconsistent with well-established economic theory. No one thinks it's a good idea. But if you were looking at it, you at least should look at both sides of the payment. The payment is going from one party to another. And they just look at one thing and they call that the benefit.

Different proceeding, the Trump administration decides to weaken the protection for student borrowers defrauded by for-profit colleges and so on. What's the benefit there? The benefit there is the savings to the federal treasury. They seem to overlook the fact that any money the federal treasury is saving is not coming through the defrauded student borrowers. And they also overlook the fact that in the other transaction they thought that it was good for money to stay in private hands and not end up in the treasury, in the case of fossil fuel companies.

Here, they think it's good for the money to stay in the treasury and not end up in private hands. If you like believe in transitivity, what they're telling us is they prefer coal companies to the federal treasury. And they prefer the federal treasury to student borrowers. So by transitivity, they prefer coal companies to student borrowers.

But what's more important for these purposes is the inconsistentancy in the treatment of transfer payments. Again, both the fact that it's a departure from well-established economic theory, and having departed from that, they can't even do it consistently. They'll take whichever side of that argument helps the interest groups they're trying to support.

So I'll stop there. But there are six chapters. We could talk a lot about these failings. But I hope this gives you a sense of how off the charts, bad, and corrupt the analytical methodologies of the Trump administration have been.

JONATHAN CANNON: OK. Thank you, Mike and Ricky. And now we'll turn to Amy and Jonathan. And I would encourage Amy and Jonathan to focus on anything that you've heard from Mike and Ricky but don't limit your kind of questions to that. I think anything is fair game within the broad purview of cost benefit analysis and public policy decision-making as we've seen it recently or as we might see it going forward. So Amy, let's start with you.

AMY SINDEN: Thanks so much John and Mike and Ricky. I really am flattered that you guys thought about me for this panel. I have long been a fan of Mike and Ricky's work and the work of the Institute for Policy Integrity. Mike and Ricky's last book, the *Retaking Rationality* is in a prominent place on my bookshelf. And I have to say, I often pull it off the shelf to refer to it for various things that I'm writing. And that's not something you can say about every book on my bookshelf.

And I'm sure that the same will be true of this book as well. It's really, really a rich and important contribution to the literature. There's three sections in the book-- 1, 2, and 3. And Ricky just did a nice job describing Section 2. And let me just say I really have no quibble with Section 2. You have really carefully, painstakingly documented all the hypocrisy, the dishonesty, the downright absurdity of the Trump administration's approach to regulation. And you've really done a great service by so thoroughly documenting those failures.

In my view, the more controversial aspects of your book are Part 1, about what came before Trump, and Part 3 about what should come after Trump, where we go from here. And so I have to start us out. I have a comment and then two questions-- a broad question and a much more specific question.

The comment, I was particularly struck in Part 1 in which you're describing kind of what happened the '80s, '90s, early 2000s. This section was just almost dripping with nostalgia for a bygone era, these halcyon days when the regulatory system existed in this happy equilibrium. We had the left pushing for more stringent regulation and the right pushed back. And [INAUDIBLE] was there as the referee, keeping us on the consensus path of rational regulation. And our hero cost benefit analysis was there to provide the guardrails that kept us headed down the middle of this road and kept the agency's making, in your words, sound policy choices that improve social well-being.

Well, really? Sound policy choices? I have to say when I look back at the '80s and '90s and early 2000s, I don't think sound policy choices. I think of Nathaniel Rich's piece in the *New York Times* a couple of years back, Losing Earth, about how we entirely dropped the ball in those decades and failed to address the most gargantuan catastrophic externality the human race has ever confronted.

I think about Ronald Reagan moving in in 1981 and literally and figuratively ripping the solar panels off the White House roof. The climate crisis is the biggest, most consequential, most disastrous externality the planet's ever faced. And the regulatory apparatus in those years did pretty much nothing. And of course, this is a classic externality which is what you guys say is the sweet spot for cost benefit analysis, the situation in which it works the best.

So I have to say the omission of the climate crisis from that part of the story really kind of left me scratching my head. But my questions are on a somewhat related but separate point. Also arising from the first-- largely from the first part of the book-- well, throughout the book. I see you equating cost benefit analysis with rationality, reasoned, evidence-based analysis expertise playing by the rules as though cost benefit analysis has a monopoly on those things.

But I never saw you explicitly defend this notion that cost benefit analysis is rational, or explain why that is. I, as you know, think there's plenty of irrationality in the form of cost benefit analysis that's practiced by the agencies. And I were even pre-Trump.

But maybe more important, you never actually define what you mean by cost benefit analysis. And you probably know this is a kind of a pet peeve of mine. I wrote an article about how this failure to define what we mean by cost benefit analysis really kind of muddies the debate because the term gets used to refer to a whole range of decision-making tools that are on a spectrum from informal, kind of a Ben Franklin style, listing of qualitatively described pros and cons on the one hand, to a highly formalized method that's grounded in economic theory and tries to calculate the net benefits of a whole series of incrementally differing alternatives and identify the point of net welfare maximization.

And you never really specify which type you're talking about. Now you do talk about your version of cost benefit being grounded in economic theory. You make multiple references to cost benefit analysis measuring net benefits. And you're clearly defending the form of cost benefit that's practiced by [INAUDIBLE] and the agencies pre-Trump, this is, under the executive orders and Circular A4. And all of that points, I think, to the notion that you guys are defending primarily a form of cost benefit analysis at the formal end of the spectrum.

But on the other hand, you also embrace the use of cost benefit analysis in instances in which significant portions of the benefits can't be quantified. But there is a tension there. The problem is that formal and informal or quantified and unquantified cost benefit analysis are really two entirely different animals. If you can't quantify all the significant benefits then you can't calculate net benefits. And if you can't calculate net benefits, you can't locate the point of net welfare maximization. And you can't mimic perfect free markets. Which means, at that point, your decision tool has really become unmoored from its justification in economic theory.

Now you might dismiss my question as trivial. You might say, Amy, you're just quibbling around the edges. Most of the time this isn't a problem. Because most of the time, we have the data and we can conduct a formal quantified cost benefit analysis. But my response to that is that you're wrong.

And the reason I say you're wrong is because I did an empirical study. I looked at the 45 cost benefit analyses that were associated with all the major rules issued by the Bush 2 and Obama EPA between 2002 and 2015, that 13-year time span. And 80% of those cost benefit analyses, in 80% of them, whole categories of benefits that the agency itself described as important, significant, or substantial were unquantified due to data limitations.

So this problem of unquantified benefits is not just some exception to the rule that rarely happens. It's pervasive. It's the vast majority of the cases. And that's at EPA where all the regulations are dealing with externalities which you say is the context where cost benefit works the best.

So this leads to my broad question and my specific question. The broad question is, once you embrace informal, qualitative cost benefit analysis, haven't you unmoored yourself from the grounding in welfare economics that purported to give you the edge over other tools to begin with. Or put another way, is an intuitive balancing really better at erecting guardrails around agency discretion and political influence than alternatives like cost effectiveness analysis, feasibility, health based standards, multi-factor qualitative balancing, and informal costs are grossly disproportionate, the benefits balancing scenario analysis?

And while we're talking about these alternatives, why are those alternatives so conspicuously absent from your book, even though it's those alternative tools, not formal cost benefit analysis, that Congress has in almost every instance directed the agencies to use in the environmental statutes? So that's the general question.

And then the specific question is, would you guys support a tweak to Executive Order 12-866 that says to the agencies, do not calculate net benefits when significant benefits remain unquantified and monetized costs exceed monetized benefits.

JONATHAN CANNON: All right. That's a general question going to the heart of the methodology that you rely on and a more specific question relating to a tweak. And this gets quite specific as we come up upon a new administration.

MICHAEL LIVERMORE: Great. So thanks very much. And I think we will both have something to say about various elements of your questions and comments. So I'll just get started and then

Ricky will chime in. I may leave the unquantified. I have something to say about that but Ricky might want to go first on that stuff.

But just to start with a couple of other pieces, so one with respect to the nostalgia in the first section of the book, I mean, I think that's actually, in a sense, a fair characterization. It's all relative. And so these days, I'm feeling nostalgic. I mean, I've been feeling nostalgic for some time, for an earlier period of time.

Now does that mean that everything was hunky dory? No. For sure. And we do actually-- in fairness, we say that. I mean, I think you can pick up a tone where we are, certainly in comparison to the Trump administration we make pretty clear that we think that things used to be better. And that's just kind of the view that we expressed in the book.

I don't think the interpretation from there is that everything was great all the time. And if you kind of go back and look at arguments we make in the first book, *Retaking Rationality,* we document a set of eight cost benefit fallacies that had been kind of growing into cost benefit analysis over the years. So that project is, in part, unearthing problems in cost benefit analysis that had arisen. So more broadly, we certainly have been critical of regulatory decision making in the past. It's just that from a little distance, the stuff that we used to argue about maybe just doesn't look as terrible.

Now climate change, climate change is a big issue. There's lots of very important issues that we have to address in our society. Climate change, as an environmental issue, is at the top of the list. And again, our regulatory system has done a terrible job. The Congress has not been able to manage this issue either. Do I think that's because of a failure in cost benefit analysis? Not particularly. I think that there are things we can do in cost benefit analysis to ensure that we're doing a better job of counting the harms of climate change.

But that's really-- that's a big picture question. It's not entirely orthogonal to the project of the book, kind of addressing the politics of climate change. And we have a chapter that's devoted to climate change. And we've done a lot of advocacy on how to do climate change with respect to regulations or how to do cost benefit analysis with respect to regulations that affect climate change. But ultimately, I don't think one should look to cost benefit analysis if the question is why haven't we dealt with climate change. But that's very broadly.

With respect, the one thing I will say with respect to unquantified benefits is because you had a kind of-- there's two parts I took to your question or two critiques. Again, we're very open in Policy Integrity's advocacy and in the book and in *Retaking Rationality.* We talk quite a bit about the importance of unquantified benefits and one of the criticisms of this administration is that they've done just an atrocious job of addressing unquantified benefits.

And so what I take to be a claim in your question is that if unquantified benefits are important, they represent important-- if there are important categories of costs and benefits that resist quantification for technical reasons or a lack of data or whatever the cause is, that that unmoors cost benefit analysis from its foundation in welfare economics.

So I don't-- I definitely don't agree with that. I think that-- I would just resist that. So welfare economics doesn't require quantification. It's not like part of what welfare economics demands as a moral theory. Or I don't know that there's a version of welfare economics that requires specifically quantification. Now it might be that we--

AMY SINDEN: Can I just ask, Mike, how are you going to figure out which of the alternatives is the welfare maximizing alternative?

MICHAEL LIVERMORE: So that's the inquiry. Exactly. So that's the inquiry. It doesn't necessarily demand that so let's-- so we're separating these things out. So there is an inquiry within welfare economics about maximizing human well-being. And of course, we have to get a bead on what that means and so on.

Now in theory, if you can quantify, if you can express all costs and benefits in a common metric that is welfare and then make a comparison, you get the welfare maximizing outcome. Now what do you do when you can't do that, which you can never do. I mean, no one thinks that you can ever fully tackle a question like this. And I think the idea is that you have to use your judgment.

But the inquiry is set within welfare economics. And then you have to use judgment about what you think the various factors are. Now you might not be happy about that. You might think that we would be better off engaging in other kinds-- I mean, one, just morally, you might think that maximizing welfare isn't the right thing to be maximizing. So you might be a Rawlsian or you might be a libertarian or something else, which case you just think we're doing the wrong inquiry.

But I don't think that the difficulty of quantification counts one way or the other. Because at the end of the day, Rawls wants you to do max and min. And how are you going to quantify, how are you going to decide who's the least worst off person in society and what kind of rules--

Now everything requires some judgment. I'm going on. So let me just get to the other kind of part, which I think is actually the more powerful part of your question [INAUDIBLE] just what I take to be-- so the issue I think is, is it a good guardrail in light of the fact that you have to exercise judgment like this. So we can't separate out cost benefit analysis say this is the more rigorous approach because there's always going to be judgment [INAUDIBLE] part that there's always going to be some element of judgment because unquantified benefits. And how does it compare to feasibility and some other alternatives?

So I think there's-- again, I really got to wrap this up. But what I'll try to say quickly is a couple of things. So one is we have the system of cost benefit analysis that's been in place for, at this point, four decades. There's a huge established methodology that's built up over time that amounts to something like a Common Law of how to do cost benefit analysis. So now it's not the law. It's just a set of practices that have of practices that have been developed over time.

AMY SINDEN: Can I just break in? It's not the law, Mike. That's--

[INTERPOSING VOICES]

--mostly say feasibility and that's also been in place for four decades and we have an established method, and so on and so forth.

[INAUDIBLE]

You guys aren't talking about the alternatives.

MICHAEL LIVERMORE: Yeah, we're not really focused on the alternatives in this particular project. Now why is that? Well, again, you can't talk about everything. And in terms of a systematic approach that has been used across the administrative state that's embodied in executive decision making, you could talk about going to put this question of the statutes because for the most part, these days the Supreme Court is interpreting a lot of these statutes to look something like, hey, you guys ought been doing cost benefit analysis.

RICHARD REVESZ: Can I chime in?

MICHAEL LIVERMORE: Yeah. Yeah.

RICHARD REVESZ: So I want to be sure that we have time for Jonathan's comments, to be able to respond. I don't want Jonathan--

[INTERPOSING VOICES]

JONATHAN CANNON: We're going to talk to him in a second.

[INTERPOSING VOICES]

RICHARD REVESZ: So I would like a chance to respond to Jonathan. So I want to say a few brief things. Mike said a lot of stuff.

In terms of the climate crisis, there's a huge failing of government. And we actually explain that one of the problems with the way that OIRA review is done is that it basically responds to rules that have been sent. It's never proactive. It hasn't been proactive. We've written a whole piece about how OIRA should take a more proactive role at looking at agency inaction. OIRA has traditionally reviewed agency action, not agency inaction.

The problem with the Bush administration was not that it was regulating climate change, it just wasn't doing it stringently enough. The problem was that it wasn't regulating climate change even though there was this famous document out there that it inherited, the Cannon memo, that said that greenhouse gases should be regulated. So this is a problem of agency inaction. And we have not had good tools for dealing with that.

Mike and I have written about it. I hope the next administration actually tackles that. But that's a failure for sure. It's a different failure.

In terms of these other things-- cost effectiveness, feasibility-- we've actually, Mike and I, have written about this stuff. We just didn't write it in this book. Now why didn't we write it in this book? Well, you can write about everything. I mean, I've written a lot of things. But if every time I wrote something, I had to put my collected works into that, it would sort of hard.

But a few things, cost effectiveness analysis. I mean, that only has meaning if the goal is set. If you want to basically say, look, should not expose anyone in the country to more than a one in a million probability of dying from exposure to this contaminant, cost effectiveness analysis would tell us what are the best ways of getting there.

It wouldn't tell us that one in a million was the right standard. Maybe it really should be one in a billion or one in 100,000 or some other number. And cost effectiveness analysis does not answer that question. Feasibility analysis, we've attacked it. I mean, it's flawed on many grounds.

First it protects existing industry. I mean, in some cases, it says, well, what can they afford. And we'll go as far as they can afford. In many cases, they shouldn't be in business. They shouldn't be there. And so we're protecting some-- so when I was growing up, I used a mercury thermometer. My mother gave me mercury thermometer to take my temperature. It'd be crazy to say, well, what is the best way of manufacturing mercury thermometers. We shouldn't have them. They shouldn't exist because digital do a much better job at much less risk. And we've written extensively about this stuff.

Disproportionate cost and benefit, well, that raises the question, well, how disproportionate. And do we have to quantify them or not? I mean, we've written extensively in this area. This book is not about that.

I don't, like Mike, I don't think that the existence of unqualified benefits are a problem. We have a whole chapter criticizing the Trump administration for equating unquantified benefits with speculative, insignificant, or uncertain benefits. We say this is just wrong. And it's inconsistent with economic theory. And it's inconsistent with the standard practice of administrations for four decades, and Circular A4, and everything else.

So I think we actually-- we agree with you a fair amount. In fact, I mean maybe in your dichotomy between Ben Franklin who does everything qualitatively and someone who insists on perfect quantification, we're kind like in the middle. We're not quite where you are. But we're not quite in the other side either. And that's where we happen to be. So I'll stop there.

JONATHAN CANNON: OK. Well, I'm sure Amy has more to say. But we'll come back to it.

AMY SINDEN: Yeah, I have plenty more to say but it's Jonathan turn.

JONATHAN CANNON: It's Jonathan's turn.

JONATHAN ADLER: First, thanks, guys. I'm happy to be part of this conversation. It's always fun to engage with Mike and Ricky's work. A comment and question I'd want to make, one, in term-- I'm not going to try and defend the Trump administration for multiple reasons. But I do think, as a general commentary on it, we do want to be careful about ignoring the role that statutory authority and existing legal baselines should play into how we think about the costs and benefits of changes or deviations from the status quo. And I do think that in some cases, that does affect how we think about things like co-benefits in particular contexts.

And I also think that if we're looking at the Trump administration and we're looking at what they're trying to do, no one thinks that they're trying to maximize the net benefits of government regulation. They were quite explicit that they were coming in with a deregulatory agenda. That's what Trump campaigned on. That's what they sought to do.

Similarly, more progressive administrations historically have not come in saying, we're here to maximize the net benefits of regulation. They've come in talking about holding particular interests accountable for the harms they've inflicted upon society or ensuring that certain folks pay their fair share, and so on. And that's where I think, ultimately, the Democratic and political accountability and legitimacy of a lot of regulatory interventions or deregulatory actions come from, the fact that they have been put before the voters in more normative terms.

And that relates to a question that I have, which really goes to Part 3 of the book, which is, how you would like to see cost benefit used going forward either in a Biden administration or in a hypothetical administration that you have the opportunity to advise. And that is, in term-- is cost benefit analysis about the fine tuning of the sorts of regulatory interventions we make? So if Congress says control emissions from power plants, cost benefit analysis is going to help us think through that problem. Or do you really-- or do you view it more as the determinant of what sorts of problems we should be focused on in the first place?

And if it's the latter, is that something that there is a legal authority for. And B, does that cause cost benefit analysis to, in some respects, jump the tracks? That is to say, leave the area where I think we would agree it has a lot of value added in helping us understand certain sorts of trade offs and overtake what-- not to agree with Amy too much-- but overtake what I think we might think of are ultimately normative questions about how we allocate risk, about how we allocate responsibility, about what we conceive of as the realm of voluntary choice versus the realm of governmental intervention.

And if cost benefit analysis then plays this larger role of figuring out what should we be doing to maximize net welfare is that-- my question is, is that what you have in mind for cost benefit analysis. And if so, is that something that can really be done within the existing statutory frameworks?

RICHARD REVESZ: Great, great question. So maybe I'll go first. I'll just address some things quickly to give Mike time and then to give the audience time and anyone else who wants to say something. So statutory authority, obviously, statutory authority is like very important. An agency should not act inconsistent with their statutes.

And if there ever was a statute written saying, in evaluating regulations you should look at the direct benefits and ignore the co-benefits, that is what Congress intended and that's what agencies should do. I don't know of any such statute. And in fact, what I do know is that the Supreme Court and the DC circuit, which are the two courts that are most influential in this regulatory area, are moving in the direction of saying, well, regulations that do more harm than good are violation of the Emission Procedure Act, and so on.

And so we have to figure out whether regulation does harm or does good. And all of the consequences should be considered. But yes, if there ever was a statute that was explicit about this, we should follow it. I just don't think that-- I don't think the Trump administration was saying, oh, we are going to consider co-benefits in the case of the rollback of the vehicle standards because there's a good statutory authority for doing that. And we're not going to consider them for the mercury in their toxic [INAUDIBLE] termination for some different reason. I think there was something else going on, which we've discussed in the book.

I don't think that cost benefit analysis is answering the question of what action should a new administration undertake. Every administration is going to come in. It's going to have its priorities and so on. And it's then going to do things that are consistent with those priorities. But there is some obligation in what I take to be now the accepted wisdom of the administrative stay to look at the impacts of consequences.

And actually, in the environmental area, we really have to because most pollutants are now no threshold contaminants. I mean, we now understand they're no threshold contaminants. When we believed they were threshold, you say, well, you know, we're just going to try to be below the threshold, then we'll be able to get everyone full protection. It'll be really happy.

But we understand that the science has evolved to make clear that's not the case and also we also understand that there are more sensitive populations and even if for some individual there was a threshold, there's going to be more sensitive individual for which that threshold will not provide protection and so on. So we have to figure out where to stop. And it's not going to be zero or else we're not going to have, essentially, any of the activity that we have in our country.

At least it's not going to be zero across the board. It might be zero with respect to some particular decision. So we have to look at consequences. And obviously, if we can reduce lots of risks really cheaply we should do it. And if somewhere else, it's extremely expensive to reduce risk by that amount, maybe we should reduce those risks less and reduce more the risk that we can reduce very cheaply because then we'll have bigger risk reductions at lower cost.

And these costs are borne by people. I mean the benefits are also accrued to people. It's all people. I mean it's-- so we have to look at these things. And I think the absence of thresholds makes it to some extent inevitable. One last thing about the Trump administration.

Yes. I was involved in various debates with people, including Naomi Rao when she was the OIRA administrator. And she-- I think, when pressed, I mean, I was on panels with her and I pointed out a lot of this stuff to her in panels, she would say, well, but at the end of the day, we believe in freedom and we're trying to do is protect freedom. And my response to her was your version of freedom is exposing people to involuntary risks that are going to kill them.

Those people, that is the freedom for those people. You only believe in the freedom for the people imposing the risk. You ignore the freedom of the people on whom externalities are imposed. And frankly there was no response to that. Because I don't think there is a plausible response to that. That is not a plausible version of freedom.

And I pointed out this was totally foreign to the kind of freedom that FDR talked about, about the four freedoms that the founding fathers talk about, and so on. So that's kind of my take on it. Yes. Administration [INAUDIBLE] priorities, but calling this freedom is just morally reprehensible.

MICHAEL LIVERMORE: So I agree with that. And just to kind of add an addendum to this, too, so I don't actually think-- I don't know that I agree fully that the Obama administration, the Bush administration, the Bush administration, the Clinton administration, the Reagan administration went and said, what we want to do is deregulate or regulate. They would provide a series of explanations for why they would want to do that.

They might talk about freedom. They might talk about responsibility or whatever. They'll use various types of normative frames. But if you look at their executive orders, what they say is, we want to maximize net benefits for the public. They speak the language of general well-being. And that's the Reagan executive order. That's the Clinton order which was left in place by the George W. Bush administration. That's certainly the Obama administration's executive order. John Graham would talk that language, George W. Bush's OIRA administrator. Cass Sunstein would speak that language, Barack Obama's OIRA administrator. Doug Ginsburg would speak that language, Reagan's OIRA administrator.

So I think this is where the Trump administration departs, is actually in invoking these alternative normative frames without-- and just kind of accepting, at some level, that their policy agenda isn't going to maximize well-being for the American public, I mean if you ask Ronald Reagan or certainly Doug Ginsburg, do you think that deregulating is going to be a good thing for the American public in terms of its well-being, they would say yes. Governments regulating too damn much. It needs to deregulate. And that's what's going to be good for the American public.

And Bill Clinton would have a different answer about what's good for the American public. But they would use this language of well-being and ultimately they think that the methodologically they end up with cost benefit analysis and welfare [INAUDIBLE]. So I think that's the big normative departure for the Trump administration is to invoke this other language and either through manipulation or, in a few instances, just acknowledge that what they're doing is to the extent that it's justified is not because it's good for the overall well-being maybe because of its freedom or some other value. And I that's a really substantial departure.

JONATHAN CANNON: So, friends, we have exactly eight minutes left. So Amy, if you have a quick shot and [INAUDIBLE] minutes for Jonathan.

AMY SINDEN: I have another really specific question about climate change. Do you guys actually think that cost benefit is the right tool to decide how stringently to limit carbon? And I ask this because you seem a little ambivalent in the book. And of course, this is also a place where there some staunchly pro cost benefit voices who have come out and said it really just doesn't work for climate change. I'm thinking of Jonathan [? Mizeur ?] and [? Eric Posner. ?]

And you acknowledge that Obama's social cost of carbon was considerably lower than it probably should be. It just-- and Ricky talked earlier about cost effectiveness analysis as an alternative. This seems like a perfect place to use cost effectiveness analysis. Because we know what the goal is. We don't need cost benefit analysis to tell us how much we need to reduce carbon emissions. We have to lower them as much as we possibly can as quickly as we possibly can.

So why not do what the UK did, at least a number of years ago, and use cost effectiveness analysis to set a social cost of carbon instead of cost benefit analysis?

RICHARD REVESZ: Mike, go ahead.

MICHAEL LIVERMORE: Sure. So look, if we were to set a cap in the US or a carbon tax, a price on carbon one way or the other, that was equal to a defensible social cost of carbon, that would be such a radical improvement over existing policy that I think any argument amongst people who care about climate change over whether it's like ideal or whether this benefit is included or not is counterproductive.

I think that there's many different analytic normative frames that one can apply to the question. I have ones that I like. But this is-- sometimes pollsters refer to super valuations, the idea that you can use different normative frameworks and you can get at the same answer. Torturing children for fun is bad. If you're a utilitarian, it's bad. If you're a [INAUDIBLE], it's bad. It's bad under many different normative frameworks. Reducing climate change or reducing greenhouse gas emissions to reduce climate change risk is justified under many, many different normative frames. And I think it is well justified under cost benefit analysis. And at some level, I don't think we need to fight about it anymore.

AMY SINDEN: But I guess my concern is that Biden's going to tell the agencies to go back and do another social cost of carbon calculation and it's a waste of time. We don't have time. It's like an angel's dancing on the head of a pin exercise when we know what the goal is. The goal is 2 degrees unless it's 1.5 degrees. But we don't need to know the exact amount of damages from a ton of CO_2. And we're wasting time if we spend time trying to figure that out, it strikes me.

JONATHAN CANNON: Do you have any further response?

RICHARD REVESZ: Well, you know, for starters, lots of regulations have greenhouse gas impacts either as directly or indirectly. And we have to have figured out a way of analyzing those, at least if there's an executive order that requires that regulations-- that agencies perform cost benefit analysis and justify the rules that way. And I think that the social cost of carbon process actually, I think, has been a very desirable process. I mean, I think it has brought attention to two consequences and brought attention to how high the benefits are.

I mean, we've written also extensively about how the Obama number was really a lower bound because a lot of things haven't been quantified. And I think that's an important thing. But you know, Mike, so, you're right. If we had, for example, submitted the Clean Power Plan to the then-existing social cost of carbon, we would've ended up with a much more stringent Clean Power Plan. The Clean Power Plan was actually leaving benefits on the table, even on the social cost of carbon.

So if we do this across the board and do it well, and we can certainly talk about the next steps. I actually think that one of the failings here, obviously, is Congress's inaction. And Congress's inaction hampers agencies. Agents can get a lot done on the regulatory side but they cannot get certain things done that Congress could do. And if Congress wanted to have a nationwide cap and enacted it, then that's what you do. And agencies could then apply cost effectiveness to figure out the cheapest way of achieving that cap. But unfortunately we don't have a cap in place right now.

AMY SINDEN: Nor do we have a Congress [INAUDIBLE].

JONATHAN CANNON: Last question to Jonathan.

JONATHAN ADLER: I want to jump in on that point because I think it relates to a bigger issue, which I know that you know that I have about the project, which is we don't have a climate change statute. We don't have a statute that Congress adopted thinking about this problem. And instead, we're trying to find other tools that Congress gave to agencies that are headed by unelected officials to address this problem through co-benefits or other things. And it seems if that's the road we're going on, maybe we have a story about how that maximizes net benefits with regard to controlling climate change or other things.

But it seems in terms of as a self-governing polity, it is profoundly undemocratic. And to compound that, the Clean Power Plan as promulgated by the Obama administration was likely to have been struck down in Court. The Supreme Court stated, which was incredibly unusual. And if the Biden administration were to go back in and try and do an even more stringent Clean Power Plan, it would be even more likely to be struck down in Court. It would take years for the Biden administration to develop and promulgate, years for that legal challenge, and in the end probably nothing would get done.

And doesn't that suggest that for a lot of these problems rather than trying to perfect our way of quantifying the costs and benefits through an administrative process, shouldn't we spend more time focusing on how to have our more democratic institutions actually engage in the practice of legislating on the basis of the values that different groups and interests and constituencies have as a way of addressing our problems. I mean, it seems that at that macro level you're moving chairs around on the deck of the ship when we should really be having these larger conversations, not in OIRA, not in the pages of the *Federal Register,* not in the DC circuit, but in Congress.

RICHARD REVESZ: Well, legislation would clearly be a good thing. And we had a conversation about legislation during the Waxman-Markey period. And unfortunately, that legislation didn't pass. Now having said that, I don't think there's anything illegitimate about EPA doing it under its regulatory authorities.

EPA has the authority to regulate air pollutants that endanger public health and welfare. Congress explicitly, in 1970, did not want to list the air pollutants. It wanted the list to basically evolve as science improved. Congress clearly considered global pollutants actually have a forthcoming article that actually John Cannon has read and given me good comments.

It turns out that in 1970, there was extensive, extensive, focus on global pollutants. And it wasn't just like some random person testifying. It was a sponsor of the bill, the chair of the committee, the leader, the minority leader, the majority leader, I mean there was extensive reference to global pollutants. So Congress decided to leave the question of what's an air pollutant open so that the agency could adapt it as science evolved. And Congress explicitly considered the existence of global pollutants as absolutely no reason why the agency shouldn't, in fact, I think the agency has an obligation, given this level of scientific harm, to regulate greenhouse gases under existing authorities.

Now exactly what form of regulation takes, look, I mean regulations do get struck down from time to time. And obviously, one has to consider the form. But there's-- look, the Trump administration itself has done it in a very weak and ineffective way. But the Trump organization is invoking the Clean Air Act to regulate greenhouse gas emissions. It's doing it through the ACE rule, which is actually a very undesirable rule but nonetheless actually takes the position that greenhouse gases are air pollutants for the purpose of the Clean Air Act and the danger of Public Health and Welfare. Same thing in the rollback of the car standards. It has car standards.

So it is, again, acknowledging that greenhouse gases are air pollutants and a danger to public health and welfare. So this shouldn't even be a debatable point. Here is something that is really important. And on the big question of whether the Clean Air Act is an appropriate mechanism to regulate greenhouse gases, the Obama administration and the Trump administration agreed. They obviously did it in different ways. And one was stringent, one was not. And one was well designed or better designed, one was worst designed, and all that.

But on the big questions, they agree. And I think that pretty much closes the conversation. I mean, we can now move forward and decide what are the best ways to do it, how stringent should we do it, and so on.

JONATHAN ADLER: We disagree on the Trump administration's characterization. Andrew Wheeler--

MICHAEL LIVERMORE: But the Sup-- the Court's been clear, though.

JONATHAN ADLER: Oh, the Court's been clear on mobile sources and on stationary sources in New York. And Mike, I know you were here when Andrew Wheeler spoke at our conference. And he said quite explicitly the ACE rule is what it is because the Trump administration believes, rightly or wrongly, that they do not have the authority under the plain language of the Act to go any farther than the ACE rule does.

And when I asked him, should they do more, he said, if Congress gives us the authority to do more, we will do more. But the bigger picture is that we all recognize-- I mean, we agree on this call. And everything on that this is a huge problem. But the idea that we're going to address it by ratcheting down knacks and capturing the co-benefits there and ratcheting down this and capturing the co-benefits through an administrative process rather than through democratic deliberation is something that I think we should be concerned about.

RICHARD REVESZ: Well, it's a big problem. But one of the political parties doesn't think it's a big problem. And that is a big problem.

In the meantime, we have an agency that has a statutory authority to do things and they might be suboptimal, but they are moving the dial.

MICHAEL LIVERMORE: An obligation to [INAUDIBLE].

RICHARD REVESZ: The agency has an obligation to move the dial while-- when it can. And if Congress someday ends up in a different place and one of the parties decides that this actually is a big problem, which it is, then they'll be like a good discussion in the halls of Congress.

MICHAEL LIVERMORE: But in the meantime, the agency has an authority to write-- not just the authority, it has the obligation to regulate this stuff.

JONATHAN CANNON: All right. So I'm getting the message from our webinar commandant that I should wrap it up if I can. And it's too bad to intervene in this conversation because it's clear that we have a lot more to say that would be interesting and fun.

But we are out of time. And I want to take the opportunity to thank all of you for joining us, all of our panelists and all of our audience. And this won't be the end of the discussion, surely.

RICHARD REVESZ: Sure.

JONATHAN So thank you very much.

CANNON:

RICHARD REVESZ: Thank you all and thank you, Jonathan, for leading us through this discussion.

JONATHAN CANNON: I think it's a-- this is a great occasion. And I appreciate you all.

RICHARD REVESZ: Thank you so much, John.

AMY SINDEN: And thanks, Mike and Ricky, for the book.