

RESEARCH FORUM

## New foundations of cost–benefit analysis

### A reply to Professors Sinden, Kysar, and Driesen

Matthew Adler

*University of Pennsylvania Law School, Philadelphia, PA, USA*

Eric A. Posner

*University of Chicago Law School, Chicago, IL, USA*

#### Abstract

This article responds to the criticisms of *New Foundations of Cost–Benefit Analysis* that appeared in a review by Amy Sinden, Douglas A. Kysar, and David M. Driesen. We argue that their criticisms are either based on misunderstandings of our approach or are too demanding, in the sense that no reasonable decision procedure would satisfy them. We illustrate this second argument by demonstrating that their preferred approach – feasibility analysis – has little to recommend it.

**Keywords:** cost–benefit analysis, regulation, welfarism.

#### Introduction

The basic thrust of *New Foundations of Cost–Benefit Analysis* is to detach cost–benefit analysis (CBA) from Kaldor–Hicks efficiency, which we argue lacks moral relevance (Adler & Posner 2006, pp. 19–24), and instead to see CBA as a rough, administrable proxy for overall wellbeing. We defend the moral relevance of overall wellbeing by appealing, not to utilitarianism, but to “weak welfarism” – a much more catholic moral view that sees overall wellbeing as one among a possible plurality of foundational moral criteria, along with distributive considerations, deontological rights, and non-welfare values (Adler & Posner 2006, pp. 52–61). We also reject the simple equation of wellbeing and preference-satisfaction. An outcome benefits a person only if she prefers it *and* her preferences are self-interested and survive idealization (Adler & Posner 2006, pp. 28–39).

Our account has numerous implications for the actual practice of CBA. For example, we recommend that agencies “launder” preferences in determining willingness-to-pay (WTP)/willingness-to accept (WTA) amounts, at least to some extent, so as to screen out poorly informed or disinterested preferences. We argue that CBA is an imperfect decision procedure, which can deviate from overall wellbeing because of the variable marginal utility of money, and present a number of possible ways to restructure CBA to cope with the deviation (Adler & Posner 2006, pp. 124–153). We stress that CBA is not a super-procedure. It (roughly) tracks overall wellbeing – not rights, equality, or perfectionist values (Adler & Posner 2006, pp. 154–158).

Correspondence: Eric Posner, University of Chicago Law School, 1111 E. 60th Street, Chicago, IL 60637, USA. Email: eposner@uchicago.edu

Accepted for publication 9 February 2009.

On many questions we are agnostic and say as much explicitly. For example, we do not take a firm position regarding any of the following (to list just some of the issues that are bracketed in *New Foundations*): how preferences should be idealized (Adler & Posner 2006, p. 38); what exactly self-interest means (Adler & Posner 2006, p. 39); whether individual wellbeing incorporates a time preference (Adler & Posner 2006, pp. 174–175); how the interests of future generations should be factored into CBA (Adler & Posner 2006, pp. 175–177); how CBA should be structured to cope with the declining marginal utility of money (Adler & Posner 2006, pp. 142–146); what the precise roles of the US Office of Management and Budget (OMB), Congress, and courts should be in overseeing administrative CBA (Adler & Posner 2006, pp. 101–123); whether the most attractive moral view really does incorporate moral rights, distributive considerations, and/or non-welfare values, and, if so, what those are (Adler & Posner 2006, p. 53); and what institutional structures and decision procedures should be put in place to implement moral rights, distributive considerations, and non-welfare values (Adler & Posner 2006, pp. 156–158).

These are all deeply contentious normative or empirical issues. *New Foundations* makes substantial progress, we believe, without taking a position regarding them. *New Foundations* does not attempt to be an encyclopedia or how-to manual of CBA. Rather it sets forth a new perspective on CBA – one that rejects the traditional link to Kaldor–Hicks efficiency, simple preferentialism, and strong welfarism, and provides a basic framework for addressing a wide range of normative and institutional questions.

Rather than provide a more complete summary of the book here, or discuss our points of agreement with professors Sinden, Kysar, and Driesen (Sinden *et al.*) – who generously describe *New Foundations* as nuanced and open-minded – we will spend the remainder of our space responding to the major criticisms that they raise.

### The opportunity costs of cost-benefit analysis

Sinden *et al.* (2009) first set of criticisms (in Part I of their review) is that *New Foundations* ties wellbeing too tightly to preferences, that its treatment of non-welfare values and incommensurability is unsatisfactory, and that we are overly optimistic regarding OMB.

Sinden *et al.* (2009) first ask why we do not detach wellbeing from preferences entirely and define it wholly in terms of objective goods. The answer is that any plausible theory of wellbeing should be sensitive to two truisms: first, that an individual *P*'s wellbeing normally has motivational force for *P*; second, that wellbeing has critical force (i.e. that *P* is not always infallible about her own wellbeing). By stipulating that outcome *x* is better than outcome *y* for *P* only if *P*, at some point, comes to prefer *x*, we attempt to honor the first truism. By stipulating that *P*'s preference for *x* must survive idealization, we honor the second truism. A wholly objectivist account would ignore the motivational properties of wellbeing (Adler & Posner 2006, pp. 28–39).

This is true even if one defines objective goods as those items that individuals with full information converge in preferring<sup>1</sup> – but we take it that Sinden *et al.* (2009) propose to detach wellbeing from preferences even more radically. Such an approach has been most vigorously pursued by philosophers who understand objective goods not in terms of ideal preferences, but in terms of the human essence.<sup>2</sup> But there are things that individuals care about, for their own lives, that are not aspects of the human essence: consider a preference to avoid pain, or to socialize, or to have sex. Reciprocally, the ability to engage in

intellectual pursuits *is* essentially human, but we find it very counterintuitive to think that the life of the mind is necessarily a good life, even for the person who adamantly dis-prefers it.

Sinden *et al.* (2009) understand that, in our view, CBA is not a super-procedure; but they argue that, just by virtue of its insensitivity to non-welfare considerations, CBA misses much of what matters to environmental law. They mention, *inter alia*, future generations, members of foreign nations, deontological considerations, and non-human life forms. With respect to the first two categories – future generations and foreigners – Sinden *et al.* (2009) are correct that CBA takes as given some population of interest. Wellbeing impacts on *that* population are monetized and then aggregated. CBA itself does not settle – or even speak to – the prior question whether the population of interest should be defined as current US citizens, all individuals currently alive, current and future US citizens, all members of past and future generations, and so forth. On the other hand, once a population of interest has been chosen, CBA certainly can be used as a rough proxy for estimating which policies maximize the selected population’s overall wellbeing.<sup>3</sup>

An irony worth noting is that CBA critics alternate between complaining that CBA resolves too much, and complaining (as Sinden *et al.* [2009] do here) that it resolves too little. We see CBA as a useful and administrable tool for implementing *one* weighty moral consideration, overall wellbeing, but which hardly supplies a complete algorithm for moral deliberation. After all, one cannot argue *for* CBA by just doing CBA!

We mean by “deontological” considerations what philosophers mean; namely, agent-relative side constraints such as moral prohibitions on murder, battery, theft, rape, and fraud. To what extent are such deontological considerations relevant to environmental law, which targets not intentional wrongdoing, but beneficial activities that impose risks of harm on large populations? Deontologically minded philosophers have been largely stymied in arriving at a plausible specification of agent-relative side constraints barring risk imposition (Adler 2005, pp. 1227–1232 & n. 381), and we are aware of little serious effort by CBA critics along these lines. Surely there cannot be an absolute moral prohibition on activities imposing *any* incremental risk of premature death on a third party. That would mean no automobiles (after all, driving imposes some incremental fatality risk on pedestrians) and a zero-emission standard for all pollutants. How, then, should the distinction between permissible and impermissible risk-taking be drawn, except with reference to overall wellbeing or the fair distribution of wellbeing?

For these reasons, we are skeptical that deontological considerations are at all relevant to the core concerns of environmental law – but *New Foundations* itself does not take a position on this point, instead emphasizing that CBA is not a super-procedure. *New Foundations* is also careful to state that it takes no position as to exactly how values other than overall wellbeing should be reflected in agency decision-making (Adler & Posner 2006, pp. 154–158). We bracket that issue. In their critique, Sinden *et al.* (2009) do not accurately summarize our position. We do not in fact claim that “relevant deontological trumps are ‘more or less’ already captured in the constitution” (Sinden *et al.* 2009, p. 13).

Finally, we agree with Sinden *et al.* (2009) that CBA is not sensitive to non-human life forms, and that such entities may indeed have intrinsic moral value wholly apart from human wellbeing. However, it is an overstatement to see values other than human wellbeing as the central concern of environmental law. It *may* be a central concern of many environmentalists, but the core environmental *statutes* actually on the books in the United States, such as the Clean Air Act; Clean Water Act; National Environmental Policy

Act; Resource Conservation and Recovery Act; Comprehensive Environmental Response, Compensation, and Liability Act; Federal Insecticide, Fungicide, and Rodenticide Act; and Toxic Substances Control Act, are all easily rationalizable in terms of human wellbeing. The only major exception is the Endangered Species Act.

Our discussion of incommensurability is too complicated to review here, except to say that *New Foundations* surveys the wide variety of possible meanings that “incommensurability” might have, distinguishing between appeals to considerations other than overall wellbeing, and various senses of “incommensurability” that may arise even under the rubric of overall wellbeing: lexical priority; incomparability; the absence of market prices for some goods; and the notion of constitutive incommensurability (Adler & Posner 2006, pp. 158–166). In this last connection, we consider, *inter alia*, the possibility that CBA might cause negative psychological impacts. Sinden *et al.* (2009) suggest that we largely reduce the whole problem of incommensurability to making people upset, but that is not an accurate description of our analysis.

As regards the role of OMB, it should be emphasized that the optimal bureaucratic structure for implementing CBA is a difficult problem in institutional design. It requires a combination of normative theory (for identifying the goals that are meant to be optimized – in our view, overall wellbeing plus the other possible components of weak welfarism); political science (which provides theories for *predicting* how different institutional structures would operate); and empirical data (to validate and calibrate these predictive theories). *New Foundations* undertook this inquiry, in an initial way (Adler & Posner 2006, pp. 62–123). Much more work remains to be done.

Still, some preliminary points seem clear. First, much political science suggests that administrative agencies tend to focus on specific goals, rather than the public interest more generally; and tend not to prefer measures, such as deregulation, which will reduce their budgets and staff. It is therefore not surprising that CBA has tended (although certainly not invariably) to push agencies toward less rather than more regulation. Second, the presidency is hardly immune from a range of pathologies. But it is hard to dispute that, as a result of his nationwide electoral base, the president has stronger incentives to take account of the wellbeing of, or at least preferences of, the entire US citizenry, than do administrative agencies, judges, or Congressional committees. Giving the CBA oversight task to OMB, an office within the institutional presidency, is therefore a fairly natural choice. Finally, the quality of CBA and its efficacy in actually changing administrative decisions is endogenous. The Office of Information and Regulatory Affairs, the CBA unit within OMB, remains a small office; and a comparatively small fraction of civil servants have expertise in CBA and policy analysis. If there were comparatively more applied economists at agencies, and agency culture were shifted in the direction of being more favorable toward CBA, that tool would be yet more effective in screening out regulations that reduce overall wellbeing, and screening *in* regulations that increase it.

### The impracticality critique

In Part II of their review, Sinden *et al.* (2009) argue that CBA is impracticable, pointing specifically to the problems of imperfect information, wealth effects, the endowment effect, discounting, vulnerability to manipulation, and expense (decision costs). Their critique fails to ask an obvious question: To what extent are competing administrative decision procedures *also* subject to these difficulties?

A major theme of our book was that the assessment of CBA needs to be *comparative*. There is a variety of procedures that we might put in place to channel administrative discretion. The range of possibilities was systematically discussed in *New Foundations*, where we distinguished between non-welfare-focused, narrow welfare-focused, wide welfare-focused, and hybrid procedures (Adler & Posner 2006, pp. 73–80). The proper way to analyze whether agencies should engage in CBA is to ask whether CBA fares *better or worse* than these competitors in effectuating normative goals – meaning (if one accepts weak welfarism) overall wellbeing supplemented, possibly, by rights, distributive considerations, and non-welfare values.

Some of the difficulties that Sinden *et al.* (2009) discuss *may* be mitigated by using what we termed non-welfare-focused or narrow welfare-focused procedures; for example, a “feasibility” standard, or a procedure that instructs agencies to maximize safety and ignore the non-health costs and benefits of policies. Such approaches do reduce informational demands and decision costs, but at a high price; namely, by instructing agencies to select policies without reference to many of the types of wellbeing impacts that policies can have. It is easy to make governmental decisions quickly and cheaply if we tell agencies to put blinders on. (This point will be elaborated in the last section of our response, where we criticize Sinden *et al.*’s defense of the “feasibility” approach.)

Imagine that we want agencies to be sensitive to the fact that wellbeing has multiple dimensions, with none taking absolute priority over the others. Can we do better than CBA? CBA critics, including our reviewers, typically take CBA to task because it employs a monetary scale to harmonize different aspects of wellbeing. CBA not only characterizes wellbeing impacts, but it then uses monetization and aggregation as a systematic way to structure trade-offs. Wellbeing impacts are measured in dollars using WTP/WTA amounts, and the policy with the greatest net monetized benefits is identified by CBA as the best policy. The obvious candidate for a procedure that (i) is sensitive to the plurality of aspects of wellbeing, but (ii) *avoids* the purported difficulties of monetization, is what we called “intuitive balancing.” This procedure instructs agencies to characterize the various ways in which a given policy affects human interests, but then tells agencies to make trade-offs via deliberation rather than via CBA’s monetization-and-aggregation method.

Note that intuitive balancing is no less subject than CBA to problems of uncertainty and discounting. The world is complex, and humans’ predictive powers are limited. We will often, therefore, be quite uncertain what the impact of a policy will be on human health, safety, longevity, consumption, employment, happiness, and so forth. As for discounting, Sinden *et al.* (2009) criticize *New Foundations* for failing to offer a “single defensible approach to discount rates” (Sinden *et al.* 2009, p. 24). Discounting has been, and continues to be, a topic of intense scholarly debate, because the question of how to fairly balance the interests of present and future generations raises many difficulties. Among other concerns, applying a discount rate to future wellbeing threatens to impoverish the future for the sake of the present, while no-discounting threatens to impoverish the present for the sake of the future.<sup>4</sup> The suggestion by Sinden *et al.* (2009) that the structure of CBA *inevitably* over-weights the interests of the present is incorrect: applying a zero discount rate to WTP/WTA amounts will certainly not do that. Note also that the thorny problem of discounting is equally a problem for the intuitive balancing procedure, or indeed for a narrow procedure that focuses agencies on just one aspect of wellbeing.

For example, if we tell agencies to minimize fatality risks, are we normatively required to couple this approach with zero social time preference – to give equal weight to premature deaths avoided in 2200, 2100, and 2010 – or is it permissible to discount the future lives saved to some extent?

Sinden *et al.* (2009) also criticize CBA for its vulnerability to manipulation, but again the question needs to be comparative: Is CBA *comparatively* more manipulable by bureaucrats and interest groups than its competitors? A great advantage of CBA is that it offers a systematic, quantitative framework for making trade-offs. The theory of how to use revealed-preference and stated-preference evidence to estimate WTP/WTA amounts is elaborated at great length in the economic literature, and a vast body of scholarship furnishes concrete estimates. Our understanding of whether the monetization part of a CBA has been done well or badly is orders of magnitude better developed than norms for when an intuitive balancing process has been done well or badly.

In short, when it comes to predicting a given policy's wellbeing impacts, CBA is no more manipulable than "intuitive balancing." In terms of making trade-offs among different kinds of wellbeing impacts, CBA is much *less* manipulable.<sup>5</sup>

A good CBA does involve substantial decision costs, although the expected decision costs of CBA will typically be swamped by its expected benefits in the case of "large" regulations (those that can be expected to have large impacts, whether in terms of compliance costs or social benefits). *New Foundations* therefore endorses the approach embodied in the CBA executive orders since their inception in 1981, namely to require full-blown analysis only for policies above an expected impact threshold (Adler & Posner 2006, p. 83).

A critical, comparative point, here, is that the difference between CBA and intuitive balancing comes at the monetization stage, not at the stage of characterizing wellbeing impacts. And the *incremental* decision costs of monetization are probably fairly small (Adler & Posner 2006, pp. 83–84). New valuation studies need not be conducted for each rulemaking. Instead, a well-performed academic valuation study can investigate revealed-preference or stated-preference evidence to arrive at WTP/WTA estimates for a particular type of impact (e.g. the risk of death), and these WTP/WTA estimates can then be repeatedly employed in administrative CBA. What is more costly is characterizing the wellbeing impacts of a given policy – but this expense is a generic feature of *any* decision procedure that tells agencies to be sensitive to wellbeing, not just CBA.

Wealth effects may *seem* like a unique difficulty for CBA, one that could be avoided by procedures that eschew the monetization of wellbeing impacts. However, deeper reflection shows that the problem of structuring governmental choice in light of the fact that WTP/WTA varies with wealth is actually a pervasive one (Adler & Posner 2006, pp. 142–146). Compare, on the one hand, traditional CBA (the sum of unweighted WTP/WTA amounts) with distributively weighted CBA or *any other procedure* that deviates from traditional CBA. All such procedures are vulnerable to "market adjustment." For example, if we apply distributive weights to WTP/WTA amounts and thereby decide to improve amenities in poor neighborhoods, beyond the actual WTP/WTA of residents, rents may rise to a level where many poor residents are forced out. If we use a "safety first" procedure that requires automobiles to contain expensive safety devices, low-income consumers who would not voluntarily purchase such devices may well be made worse off (depending on the extent to which manufacturers can raise car prices to reflect the cost of the devices).

Further, let us imagine that we can arrive at a change to traditional CBA that, on balance, does substantially work to the benefit of low-income individuals, at some cost to higher-income individuals. Then we need to worry whether this change, like increasing the progressivity of the income tax, may produce a disincentive to earn income.

In short, the problem of distributive weighting and wealth effects turns out to be quite complex, and so *New Foundations* characterizes a range of options for sensitizing CBA to the variable marginal utility of money, rather than endorsing a single one (Adler & Posner 2006, pp. 142–146, 188–189). *Pace* Sinden *et al.* (2009), we do not definitively recommend that agencies refrain from implementing projects where project winners and losers have substantially different wealth distributions – and even if this were the best course, the result of such a rule would not be to preclude such projects entirely, but rather to shift their adoption to the legislative rather than administrative level.

Endowment effects comprise the only problem on Sinden *et al.*'s list that is genuinely avoided by intuitive balancing and other administrative procedures that do not monetize wellbeing impacts in dollars. Our account of wellbeing, which requires preferences to survive idealization (and also to be disinterested), offers a principled rationale for responding to endowment effects (Adler & Posner 2006, pp. 166–173). Large offer/ask disparities are often a product of “loss aversion,” which is a kind of irrationality, whereby a given individual frames project impacts as losses or gains, depending on his choice of an arbitrary reference point. Formats for estimating WTP/WTA should be designed to reduce loss aversion and other sources of large offer/ask disparities, such as strategic behavior or the fact that moral preferences may prompt individuals to express large WTA amounts and small WTP amounts.

Sinden *et al.* (2009) criticize our proposal to handle endowment effects by laundering preferences as elitist. Of course, if we had taken the position that policy choice should always be measured against the standard of individuals' actual preferences, we would probably have been accused of reducing wellbeing to “tastes.” Indeed, as we already noted, in Part I of their review, Sinden *et al.* (2009) criticize *New Foundations* for tying wellbeing too closely to preferences, even with the idealization filter in play – that is, for being insufficiently elitist. *New Foundations* prompts these contradictory attacks because we have tried to put on the table a balanced account of wellbeing, one which is sensitive *both* to the fact that wellbeing has motivational force (thus preferences) *and* to the fact that it has critical force (thus idealization).

### The feasibility alternative

As we noted above, the evaluation of decision procedures is a comparative exercise. In Part III of their review, Sinden *et al.* (2009) argue that feasibility analysis is superior to CBA. We disagree.

Our preference for CBA rests on a number of premises. Weak welfarism is a *moral* theory that includes overall wellbeing as one of a possible plurality of fundamental moral criteria, and thus makes it morally attractive for administrative agencies to engage in CBA – as a decision procedure implementing overall wellbeing. Congress, of course, has *legal* authority to require agencies to pursue goals other than overall wellbeing. Some statutes clearly preclude CBA; others clearly require it. Many other statutes are unclear, conferring legal discretion on agencies either to use or refrain from using CBA. In this last case, the president has independent legal authority to require agencies to use CBA as a substantive

criterion for deciding which regulations to adopt.<sup>6</sup> And, in all three cases, the president has legal authority to require that agencies conduct a CBA as an informational measure – even if a statute imposes a different substantive norm.<sup>7</sup>

We believe that CBA, as described in our book, is the best decision procedure for advancing overall wellbeing. Unlike some decision procedures (such as feasibility analysis), it incorporates all welfare-relevant information. Unlike other decision procedures (such as intuitive welfarism), it allows for some degree of transparency and verifiability by third parties.

The case for feasibility analysis rests on a different set of premises, but even after reading Sinden *et al.* (2009), we are not sure what they are. One possible justification would rest on some normative goal other than overall wellbeing or its fair distribution. Feasibility analysis does not (as we will explain) promote welfare, but it may promote something else. If that something else should be the goal of public policy, then feasibility analysis would be an appropriate decision procedure. But what is that something else? In fact, Sinden *et al.* (2009) justify feasibility analysis on the basis of welfarist premises; so we will not try to speculate as to what the something else – the alternative normative basis of feasibility analysis – might be.

According to Sinden *et al.*'s account, feasibility analysis has two steps. First, regulators “must decide whether a pollutant is likely to endanger public health or the environment” (Sinden *et al.* 2009, p. 29). Second, the decision procedure “authorizes regulators to forego reductions when a measure would force the shutdown of a large number of plants” (Sinden *et al.* 2009, p. 30).

Sinden *et al.* (2009) argue that the “broad” regulatory trigger allows agencies “to consider poorly characterized effects” (Sinden *et al.* 2009, p. 29), “[t]hus, regulators committed to feasibility analysis . . . consider the welfare benefits of regulation more completely than regulators distracted by CBA” (Sinden *et al.* 2009, p. 30). Further, “the fact that they cannot quantify the most important effects does not produce a major inaccuracy under a feasibility approach, because they are not required to quantify regulatory benefits” (Sinden *et al.* 2009, p. 30). The goal of feasibility analysis is to “maximize the reduction of pollutants” (Sinden *et al.* 2009, p. 30).

At the same time, the focus on plant shutdowns means that feasibility analysis “requires the consideration of cost” (Sinden *et al.* 2009, p. 30). Sinden *et al.* (2009) also put this problem in terms of avoiding “bankruptcy” (Sinden *et al.* 2009, p. 30).

We might summarize this approach as one of maximizing the reduction of pollutants subject to a side constraint; namely, the imperative of not shutting down a “large number” of plants. Sinden *et al.* (2009) give a purely welfarist defense of this approach: “Plant closures often lead to firing workers, thereby ending their affiliation with colleagues and upsetting their position in society” (Sinden *et al.* 2009, p. 31). CBA, by contrast, purportedly cannot quantify the costs of loss of affiliation, nor other losses captured by feasibility analysis, such as the emotional loss that is suffered by laid-off workers and the “feeling of a loss of control over one’s environment” (Sinden *et al.* 2009, p. 31). Feasibility analysis “considers laundered preferences,” unlike CBA (Sinden *et al.* 2009, p. 32).

This defense of feasibility analysis is seriously flawed. Consider first the claim that regulators should maximize the reduction of pollutants. This goal is incoherent. Virtually all activities create pollutants, in the sense of substances that cause harm to others or cause a risk of harm. These activities are hardly confined to plants. An individual crafts-



man might use a soldering iron that sends gases or tiny particulates into the air. A family farm might use homemade organic fertilizer that nonetheless spills into a river. Indeed, ordinary waste, from humans and animals, is a pollutant, and if it is not disposed of correctly, it can cause serious harm to others. What would it mean to “maximize the reduction of pollutants” from households, farms, small business, and other institutions that are not “plants”? A complete ban would be infeasible; an almost complete ban would impose enormous hardships on ordinary people that could not possibly be justified with reference to overall wellbeing, or for that matter, the fair distribution of wellbeing.

We suspect that the authors have an implicit *de minimis* standard, or perhaps something else, in mind. They surely do not think we should shut down all human activities except those occurring in plants! But where is the *de minimis* line to be drawn? Sinden *et al.* (2009) provide no guidance or hint.

Sinden *et al.*'s plant closing constraint is even more puzzling. Initially, the idea that plants or factories should matter more than farms or small businesses is extremely odd. Sinden *et al.* (2009) worry about the negative welfare effects of employment loss, but most people are employed outside of plants, not in plants. Consider an insurance company where all of the employees are in an office building rather than in a plant. If this insurance company pollutes, as it probably does (the building generates waste of various sorts), then it must be shut down because it is not a plant, even though thousands of employees lose their jobs. Why should environmental regulators be directed to take into account the welfare effects of their regulations on factory workers but not on office or farm workers?

Even if Sinden *et al.* (2009) mean to include office buildings, farms, apartment complexes, and other enterprises within their definition of “plants,” the feasibility constraint binds only when a “large number” of plants will be shut down. Some sectors are small or have large economies of scale. Consider one sector where there is just one plant, and another sector where there are 100 plants. Feasibility analysis, as Sinden *et al.* (2009) describe it, would presumably permit the regulator to shut down the first sector but not the second. However, the first sector might generate products far more efficiently than the second, and with far less damage to the environment. They might even have the same number of employees. Why should the number of plants among which those employees are distributed make any difference in a welfarist analysis?

In addition, there is nothing special about bankruptcy, which is just a legal device for allowing firms to adjust their financial structure when they have cash flow problems. A firm can go into bankruptcy without shedding any jobs. And then there could be sectors with many plants that generate vast pollution but produce little social benefit. Under Sinden *et al.*'s feasibility analysis, these firms would not be regulated if regulations would not require numerous plant closings. But if these numerous plants produce enormous social costs, why shouldn't they be shut down? In an economy with a lot of dirty plants, CBA is a far better decision procedure than feasibility analysis is from the standpoint of environmental values.

The crux of Sinden *et al.*'s defense seems to be that feasibility analysis allows regulators to take into account the social costs of layoffs, while CBA treats those costs as irrelevant. Yet CBA does not, in principle, bar consideration of the costs of job loss. In principle, those costs should be taken into account. In practice they are not and probably should not be. The reason is that in a market economy, regulations will not cause permanent job loss except at the extreme low end of the pay scale, where minimum wage

and benefit laws make some types of people too costly to employ. The public decision to trade off employment and minimum pay and benefit restrictions is not one that should be disturbed by a regulator. In general, an environmental regulation that shuts down an industry will result in the workers eventually obtaining jobs elsewhere. The relevant costs – the loss of affiliation, for example – will be temporary and, we suspect, usually smaller than the other costs and benefits.

A further point is that workers may well be compensated for job loss. We know that wages reflect job security, which means that workers in more unstable industries will enjoy wage premiums. These workers may, in effect, be compensated prospectively for the risk of affiliation and other losses, caused by regulation or any other factor such as random fluctuations in the economy. Furthermore, various government programs help workers out when they lose their jobs; these programs are often made available to workers in declining industries.

Still, we have no difficulty with the idea that CBA should be adjusted to take into account the relevant costs incurred by workers as a result of regulation. Those costs can be estimated based on studies that value job security. If we believe that those studies underestimate these costs, suitable adjustments can be made. The costs can then be applied case by case, resulting in less regulation of industries where these costs are high, and more regulation where these costs are low (e.g. where workers tend to be younger, more mobile, and more willing to take temporary employment). Simply banning regulation that results in plant closures is a crude, blunderbuss approach to this problem.

Sinden *et al.*'s description of feasibility analysis has another flaw. It implies that the only social benefits that matter are the wellbeing of workers and environmental quality. Many people – the elderly, children, disabled people – do not work. Their wellbeing apparently does not count. Although they will benefit from the reduction of pollution, any higher costs for food, housing, and consumer goods they will be forced to pay are not relevant to feasibility analysis, as Sinden *et al.* (2009) describe it. The wellbeing of workers who do not work in plants – the majority of workers – also does not apparently count. As for workers lucky enough to be employed in plants, their needs for affiliation at the workplace and the like do count, but their other legitimate interests – in consuming household goods, living in houses, educating their children, and so forth – do not apparently count. The effects of environmental regulation on all these goods and services simply do not matter, according to the feasibility approach advocated by Sinden *et al.* (2009). Such a conclusion is impossible to reconcile with a concern for human wellbeing, or indeed any serious moral starting point.

We have not commented on other extremely vague aspects of the feasibility analysis advanced by Sinden *et al.* (2009), including both the initial inquiry into whether a pollutant is harmful, and puzzles about how big a plant needs to be, or how many have to be shut down to constitute a “large number.” When one further considers how the feasibility standard might apply outside the setting of environmental regulation, the difficulties multiply. What would it mean to ask whether a transportation safety regulation – say, the mandatory installation of air bags – is “feasible” or not? Such a regulation would not shut any “plants.” Does that mean that the safety regulator should not only mandate air bags, but other equipment that could double or triple the price of the car? Should the regulator consider only the impact on automobile plants and employees, or should it also consider the expense to consumers?

The problems here are obvious. What we find odd is that Sinden *et al.* (2009) offer the vagueness of feasibility analysis as its virtue. They argue that rather than forcing regulators to engage in meaningless quantification, the approach allows them to take into account any cost they want to, including general moral values and considerations.

This is not, in fact, a characteristic of feasibility analysis; it is a characteristic of any analysis that opts for intuitive evaluations rather than quantification. Ultimately, we suspect the main choice is between quantification and a more intuitive approach that allows regulators to take into account any relevant moral consideration. Notwithstanding the vagueness of the feasibility analysis they advocate, Sinden *et al.* (2009) seem uncomfortable with intuitive balancing, and we share their discomfort. But once one rejects the intuitive approach, and looks for a more systematic and transparent procedure for rendering policy choice sensitive to a wide range of welfare impacts, it becomes clear that CBA is the best candidate.

## Notes

- 1 It might be the case that *P*'s life in outcome *x* is objectively better for her than her life in outcome *y* – in the sense that individuals' ideal preferences converge in preferring the first life to the second life – but that *P*, whose actual preferences are non-ideal, actually prefers *y*.
- 2 The most important contemporary example is Hurka (1993), which develops a theory of the human good based on the development of those attributes that are “essential to humans and conditioned on their being living beings:” having a living body, and having “theoretical and practical rationality;” that is, the capacity for knowledge and for forming and acting on goals (Hurka 1993, pp. 17, 37). The theory Hurka develops “does not find intrinsic value in pleasure, not even pleasure in what is good, nor does it find intrinsic disvalue in pain” (Hurka 1993, p. 190). Nor does it see the objective goodness or badness of a human life as partly dependent on the person's emotional state (Hurka 1993, pp. 139–140). Finally, Hurka's theory values love and friendship only because these are occasions for *teamwork*: for formulating and acting on goals with others (Hurka 1993, pp. 134–135).
- 3 Although we do not know, of course, what future generations will be willing to pay or accept for different welfare impacts, we can certainly predict what the future impacts of current policies will be, and then use current WTP/WTA amounts (perhaps adjusted to reflect predicted economic growth) to monetize future impacts.
- 4 If we do not discount future wellbeing impacts at all, and if a positive interest rate is available in the market place, the option of reducing consumption now, for investment (at that positive interest rate) and consumption later, will look attractive. Thus no-discounting plus the existence of inter-temporal markets tends to sacrifice the current generation for the future.
- 5 Admittedly, we have proposed changes to traditional CBA that may increase its manipulability – in particular, some degree of preference laundering. However, the revisions we propose retain the basic framework of measuring wellbeing impacts through WTP/WTA amounts and aggregating WTP/WTA amounts to select the best policy. This approach, we believe, remains considerably less manipulable at the trade-off stage than intuitive balancing.
- 6 At least if the agency is “executive” rather than “independent;” that is, if the agency head is removable at will by the president rather than “for cause.”
- 7 This view about the president's legal authority is not idiosyncratic, but indeed, the view that has been adopted by both Republican and Democratic administrations in issuing or maintaining cost–benefit executive orders (first 12,291 and then 12,866). It might be objected that Congress has legal authority to preclude agencies from engaging in CBA even as an informational measure. That objection raises interesting, but theoretical, questions about the president's supervisory power over agencies, since Congress has rarely attempted to do this.

## References

- Adler MD (2005) Against “Individual Risk”: A Sympathetic Critique of Risk Assessment. *University of Pennsylvania Law Review* 153, 1121–1250.
- Adler MD, Posner EA (2006) *New Foundations of Cost-Benefit Analysis*. Harvard University Press, Cambridge, MA.
- Hurka T (1993) *Perfectionism*. Oxford University Press, New York.
- Sinden A, Kysar DA, Driesen DM (2009) Cost-Benefit Analysis: New Foundations on Shifting Sand. *Regulation & Governance* 3, 48–71.