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How ^{NOT} to Lie with Benefit-Cost Analysis

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Analyzing public decisions using benefit-cost is anathema for some, a truth nostrum for others and a targeted diagnostic for a few (heavily concentrated among economists). Its surface simplicity and its subtle complexities make it easy to lie, accidentally or not. Conversely, discerning what truth there may be about public policy is aided by warning signs of lying and abetted by signs of how not to lie.

Benefit-cost analysis in a simple form was described by Benjamin Franklin, evolved by economists, required by Presidents of both parties to analyze government regulations and advocated for use on a broader basis primarily by Republicans. It's used by charities such as the Robin Hood Foundation in New York to help allocate charitable giving and by the World Bank to inform the international allocation of funding. Governments issue guidelines on its use and textbooks struggle to explain how to do it right but don't provide the vivid examples of doing it wrong that are so hard to forget. Most of us end up hearing fragments of studies as sound bites about how good or bad the "bottom line" is for some program. What is benefit-cost analysis doing and why is it so hard to avoid lying?

Benefit-cost analysis tries to answer whether a society is better off by taking an action when impacts of all kinds are considered, including those outside the marketplace. Dollar values (in the U.S.) are used to weight the impacts such as reduced building damages or deaths and these impacts are added up "to whomsoever they accrue". The bottom line measure, the eponymous benefits less the costs (net benefit) is defined as a measure of economic efficiency (and who can be against efficiency?). A positive value is standardly interpreted to mean that society will be

better off by taking the action (the subtler complexity is in Lie #4 below). This apparent simplicity obscures numerous challenges in practice and interpretation so in this political season I offer the following lies and how to avoid them as aids to distinguish among good, bad and ugly analyses.

Lie #1: Be selective in your impacts and values

Start easy with this no-brainer tactic: Include impacts that slant the benefit or cost your way and dispute or ignore those that tilt the other way. If you want to reduce the benefits of regulations to reduce oil spills, exclude those who would pay a small bit more to avoid such events even if they never visit the Gulf or Alaska (officially, non-use value). If a rule about the cleanliness of drinking water also affects how much to clean up old industrial sites and you want to reduce costs; ignore the effect on cleaning up old industrial sites

How not to lie: Include all the impacts and values for which credible (ah, there's the rub) estimates exist and which seem potentially large enough to change an opinion. No one is prescient enough nor are there enough data to include everything, but see that the core elements are included in a responsible way.

What you can do. Ask yourself "Are there major elements missing, or too many present in this analysis?" This is perhaps the most challenging detective work, can you find the impact that didn't bark in the night and didn't make it into the report?

Lie #2: Confuse the baseline

Choose a comparison that makes your desired impacts larger and your costs smaller, perhaps even by choosing different baselines for benefits and costs. Impacts only exist if there is a

change from some starting point, the baseline. You see this when political Party A touts its impact starting from a low point of the business cycle and political Party B responds measuring from the high point of the cycle (or vice versa). Or build an inflation factor into costs but not benefits (or vice versa). Or ignore history that States or industry or technology seem to be moving over time and assume all factors will stay constant if that helps you.

How not to lie: Be consistent and clear about the baseline, including whether factors are changing over time. The standard baseline is in comparison to doing nothing (the status quo) but economies evolve in complex ways so a baseline that evolves over time is ok.

What you can do: Ask yourself “What is the basis of comparison? Is that reasonable and is it the same for both benefits and costs?”

Lie #3: Count jobs entirely as a benefit

After you compute the benefits of the policy (typically by looking at benefits received by all of consumers, industry, and changes in government revenue), also count the number of employees and the amount they will be paid as a benefit. After all, labor is about two-thirds of all costs in the US and so if you can count two-thirds of the cost as a benefit, then that gets you a long ways toward a positive net benefit. A variation on this is to count as a benefit the new jobs in your local region while ignoring the loss or shift in jobs from another region. This is politically correct from either party...go for it!

How not to lie: Decide whether unemployment rates are normal or high. If they are normal, then there is no additional benefit from new jobs as your new job is just taking labor effort away from some other job, it washes out. Recent times have seen unusually high rates of unemployment which does create a justification for a partial benefit from new employment. It's

partial because it depends on the wage a person requires to work. If a person would work for next to nothing, then the whole wage is a benefit; if they won't work for anything less than a multiple of the minimum wage, then the benefit is the wage less the amount for which they will choose to work. A back of the envelope approach on who will work for how much suggests about fifty percent of the wage as a benefit in times of high unemployment.

What you can do: Ask yourself, "Will this policy be implemented during full employment or high unemployment?" and "Are the new jobs just being taken away from another location that is included in our calculations?"

Lie #4: Cite the bottom line as a crystal clear measure of improvement.

Find a report with a positive net value for the project or policy and tout it as quantitative support that it is better for all. Corollary, find a negative value and state it's bad for society. Don't mention caveats, they are such tiresome things and time is short.

How not lie: Be cautious about your conclusion. A positive value is like a green light on a larger set of dashboard instruments. Society will unambiguously be better off only if compensation is paid to all who incur costs which bears its own problems; or if the value of an additional dollar is the same to all people, whether rich or poor, and society values equally a dollar going to any individual. Falling off this unlikely knife edge leaves ambiguous the bottom line of a single benefit-cost analysis. Treating everyone equally is a reasonable place to start and the professional standard but it is not always the end of the story.

What you can do: Ask yourself, "Am I comfortable with adding up everyone's impacts no matter who they are on this issue?" "Is there evidence on who is impacted that is re-incorporated into the analysis?"

Lie #5: Act as if a number is certain

Be confident, be very very confident. Report impacts in small fractions, report dollar values to some small amount; hundreds or tens of dollars, or heh, go all the way and report the total in cents. Don't worry about conveying uncertainty about the number and don't get bogged down in defining whether your number is formally an average response (the mean).

How not to lie: Convey some measure of the accuracy of your measurements. Ideally this is reflected in the number of significant digits (no, that's not how many nails and toes have polish) such as whether your data are precise only to the millions or by reporting statistical measures of dispersion such as a standard error. Carry out "what if" or sensitivity analysis or in today's easy to computer world, do a "Monte Carlo" simulation which is like doing hundreds or thousands of "what if" analyses.

What you can do. Ask "Does there seem to be a false level of precision in this analysis?" and "Are we told whether the results change if reasonable changes are made to the analysis?"

Lie #6: There are no professional ethics

Provide the number, any way you can, that you think your boss or your client is expecting; sometimes paraphrased as "I can get you any number you want, what do you want it to be?"

How not to lie: Even if there is no Hippocratic Oath for economists or policy analysts, there are professionally acceptable ways of doing things, some gray areas, and some that are wrong. Do not deviate dramatically from standard practice. If you choose to deviate substantially, take more time to explain and get your method reviewed or even published. Besides, it is

professionally embarrassing when it's revealed you caved to your boss; your reputation is a repeat game.

You get the drift. Below is an abbreviated list of additional ways to lie and how to avoid lying.

HOW TO LIE	HOW NOT TO LIE
1. Slant the question <i>This is all about greed; or jobs.</i>	Neutrally identify the problem and its causation
2. Assess only one alternative <i>Rebuild the New Orleans levee to the height it was before</i>	Assess reasonable alternatives including different sizes, different approaches, and doing nothing
3. Ignore time <i>Just add up the new government revenue from gambling for the next 20 years.</i>	"Discount" future values (the challenge is the appropriate rate).
4. Be vague about whose benefits and costs count <i>Assess the impact of military base closures only on the local region or be unclear if the benefits of thievery accrue to the thief.</i>	Clearly define who has standing (whose benefits and costs count). All citizens? Only those in a region?
5. Omit a summary table with performance measures <i>Make it hard to integrate the analysis, as with an analysis of the cost of sprinklers in nursing homes in which benefits and costs were kept in different units and distinct from each other.</i>	Include a limited number of summary tables, perhaps one for impacts in their natural units (e.g. injuries, crimes), and one for the monetized values in each category.
6. Use misleading graphics or statistics <i>For instance, truncate the vertical axis so that what looks like a large change is a small change compared to the total.</i>	See <i>How to Lie with Statistics</i> by Darrell Huff
7. Ignore relevant differences among people <i>In the benefits of emergency planning (or the cost of a disaster), assume an average of 1.8 cars per household no matter their income so that everyone can drive out of harm's way.</i>	Take into account policy relevant differences such as those potentially associated with income, gender, age...
8. Ignore qualitative elements (not quantified or not monetized) <i>Measure the cost of rape as hospital and police reporting costs.</i>	Qualitatively describe elements which cannot be quantified and put into monetary values.
9. Never look back <i>Times have changed and it's too hard to</i>	Plan for accountability by carrying out retrospective analysis.

HOW TO LIE	HOW NOT TO LIE
<i>get information, let's not see what happened compared to what we predicted!</i>	
10. And the first 6 in the text!	

Of course, lying is a creative art and the salient methods listed above have infinite variation. No group has a monopoly on the art; in my experience non-governmental organizations are as likely as industry or government to shade the truth. At the same time, there are dedicated people in each type of organization who are concerned about truth-telling both within their organization and as watch-dogs across organizations. More power to them.