Philosophy 1104: Critical Thinking

Answers to Second Practice Quiz #6

TIME: 60 minutes

1. How good are the following explanations? Explain your answer briefly, *supporting your judgment in each case by appeal to the conditions of a good explanation* (the causation condition, the inference condition and the plausibility condition). [4 marks each]

(i) The book of Daniel presents itself as the work of a prophet living in the 6th century B.C. But it contains an accurate and detailed account (presented as prophesy) of the struggle between the Ptolemies and the Seleucids centuries later. Hence scholars date the work to the 2nd century B.C., so that these prophesies were written after the fact.

The explanation is strong on the prediction condition. If someone is writing after the events, then they should be able to describe them accurately.

The issue with plausibility is whether a person would write a book, while presenting it as having been written by someone else centuries earlier. Why would they do this? There seem to be possible reasons (e.g. as a literary device) so it does ok here too.

(ii) My brother has this cool device that he says makes red traffic lights turn green. It's just a little box on his dashboard, with a button on it. I thought he was joking when he first told me about it. But the other night he was giving me a ride home, and whenever we approached a red light, he pushed the button and it almost immediately turned green. It happened again and again – we never had to stop, not even once.

Prediction condition: fine. If the brother has made such a device, then that evidence is exactly what you would expect.

Plausibility: less clear. Can such a device be made? If it can, then why aren't they already on the market? Is this "brother" a total genius?

(iii) [same evidence from (ii)] I reckon your brother is having a little joke. I don't see how any kind of wireless device could tap into the signal control system, which is all wired. It just can't be done. More likely he just knows how the lights are timed, as he drives that route a lot, and he adjusted his speed to make them all turn green on arrival. Pretty hard to do, actually – I'm impressed!

Plausibility is good here. Some people like to pull pranks of this sort.

Prediction isn't too strong, as it would be hard for the brother to get it just right. We would expect a mistake or two. But maybe not too low on prediction.

(Overall I guess this is the better explanation.)

(iv) In 1950 Immanuel Velikovsky published *Worlds in Collision*, a book which explained stories of catastrophe from ancient cultures in terms of near-collisions between the earth and Venus at those times. In one case, for example, the earth temporarily stopped rotating on its axis, so that the sun stood still in the heavens. Astronomers complained that Velikovsky's theories were inconsistent with Newtonian mechanics.

Plausibility is fairly low, as the idea that Venus used to have such an erratic orbit is novel, and strongly contrary to the accepted wisdom.

Prediction is extremely weak, since (according to astronomers) such near-collisions wouldn't have the effects that Velikovsky claims anyway.

Overall, a pretty terrible explanation!

7. Read the attached essays, and answer the following questions. Note that while these essays are not specifically directed at each other, the debate has been going on for some time, so *you may assume that each author is fully aware of the arguments of the other*.

(i) What is Zencey's main thesis, in his essay? (Use your own words.)

GDP is a poor indicator of economic well being. It ignores important economic goods, and counts some costs as benefits. (It should be replaced by better measure.) [4 marks]

(ii) What is Lequiller's main thesis, in his response? (Use your own words.)

Change in the real GDP is a satisfactory measure of economic growth. It is a "beacon" that helps policymakers make good choices about how they manage the economy. [4 marks]

(iii)   Describe the essential points of disagreement between Zencey and Lequiller. Are there any substantial points of agreement? Is so, what are they?

The central disagreement, I think, is whether GDP is a "beacon" suitable for guiding economic policy. But Lequiller does waver on this a bit, at times suggesting that alternative measures might be better, or at least are also useful. Generally Zencey considers the things GDP fails to count as serious, but Lequiller gives the impression that they're unimportant.

They agree that unpaid services are difficult to assign dollar values to. And that GDP does fail to count certain economic goods. [4 marks]

(iv) Summarise Zencey's arguments for his thesis.

1. GDP doesn't count unpaid economic work.

2. GDP doesn't count services (e.g. drinking water, flood barriers, fresh fish) provided by natural ecosystems. These services are of high quality, and enormous economic value, worth trillions of dollars per year.

3. GDP measures monetary exchanges, and so doesn't distinguish between costs and benefits.

4. Economic decisions that ignore huge economic costs and assets, treating them as worthless, are likely to be bad decisions.

Therefore, GDP is a poor economic indicator. It should be replaced by something better.

[7 marks]

(v) Summarise Lequiller's arguments for his thesis.

1. Authority: Governments and businesses "swear by" GDP. Nobel laureate Paul Samuelson described it as a "beacon".

2. GDP measures just what it's supposed to – production of goods and services. It is not supposed to measure economic well being. Use other measures for that, e.g. national accounts system.

3. GDP is calculated using conventions which may appear arbitrary, but ... [? The argument tails off]

4. The market price of goods and services is an accurate measure of their contribution to well being.

5. A measure that includes all economic goods, including natural environmental assets, is hard to construct since the "imputed" dollar values assigned are largely subjective.

6. Adding too many such "imputed" values to GDP might "weaken" the GDP measure.

[7 marks]

(vi) Criticise these arguments, noting any unacceptable premises, invalid reasoning, inconsistencies, fallacies, faulty definitions, etc. You should also discuss the extent to which each author deals with, or ignores, the criticisms of the other.

Lequiller is a slippery customer. Overall he cautiously acknowledges some weaknesses of GDP as a measure of the economy, but he still finds it a very useful indicator – a "beacon" to guide policy. Rather than replace or demote GDP, he prefers to develop a suite of other indicators to look at as well. It's not clear how seriously these other indicators will be considered, compared with GDP. He's *vague* about that. Also, lacking a single measure for the whole economy makes it hard to evaluate trade-offs.

3. "Our conventions may sometimes look arbitrary"

One would expect a response to this criticism. Yet he just moves on. This is unacceptable.

4. The market price of goods and services is an accurate measure of their contribution to well being.

   --fair enough, for *market* goods. But not for unpaid labour and ecosystem services. In those cases, the market price ($0) is way off. Also this paragraph is very slippery, perhaps inconsistent. GDP "is simply a measure of production" and so doesn't capture well being. Yet at the start of the paragraph this is denied.

5. The national accounts system might be better, but few countries compile one. And it doesn't count environmental/natural assets anyway.

   "few countries compile one". Irrelevant to the issue of what the *best* measure would be.

6. A measure that includes all economic goods, including natural environmental assets, is hard to construct since the "imputed" dollar values assigned are largely subjective.

   -- True, but one can do better than estimate a value of zero.

7. Adding too many such "imputed" values to GDP might "weaken" the GDP measure.

   "Weaken" presumably means to make the value of market goods and services less important. But it's not clear why that would be a bad thing. No argument is given for it.

Zencey: Doesn't address the possibility of adding other indicators to GDP.

The estimate of 33 trillion dollars for natural-capital services is for USA or whole world?

Match-to-thermometer analogy (similar to teaching to the test). I'm not sure what kind of "prodding" of GDP he's talking about. Lowering interest rates? Government spending? It's hard to evaluate the analogy.

[8 marks]

G.D.P. R.I.P.

By ERIC ZENCEY

[Edited by RJ]

...G.D.P. is one measure of national income, of how much wealth Americans make, and it's a deeply foolish indicator of how the economy is doing. It ought to join buggy whips and VCRs on the dust-heap of history.

The first official attempt to determine our national income was made in 1934; the goal was to measure all economic production involving Americans whether they were at home or abroad. In 1991, the Bureau of Economic Analysis switched from gross national product to gross domestic product to reflect a changed economic reality — as trade increased, and as foreign companies built factories here, it became apparent that we ought to measure what gets made in the United States, no matter who makes it or where it goes after it's made.

Since then it has become probably our most commonly cited economic indicator, the basic number that we take as a measure of how well we're doing economically from year to year and quarter to quarter. But it is a miserable failure at representing our economic reality.

To begin with, gross domestic product excludes a great deal of production that has economic value. Neither volunteer work nor unpaid domestic services (housework, child rearing, do-it-yourself home improvement) make it into the accounts, and our standard of living, our general level of economic well-being, benefits mightily from both. Nor does it include the huge economic benefit that we get directly, outside of any market, from nature. A mundane example: If you let the sun dry your clothes, the service is free and doesn't show up in our domestic product; if you throw your laundry in the dryer, you burn fossil fuel, increase your carbon footprint, make the economy more unsustainable — and give G.D.P. a bit of a bump.

In general, the replacement of natural-capital services (like sun-drying clothes, or the propagation of fish, or flood control and water purification) with built-capital services (like those from a clothes dryer, or an industrial fish farm, or from levees, dams and treatment plants) is a bad trade — built capital is costly, doesn't maintain itself, and in many cases provides an inferior, less-certain service. But in gross domestic product, every instance of replacement of a natural- capital service with a built-capital service shows up as a good thing, an increase in national economic activity. Is it any wonder that we now face a global crisis in the form of a pressing scarcity of natural-capital services of all kinds?

This points to the larger, deeper flaw in using a measurement of national income as an indicator of economic well-being. In summing all economic activity in the economy, gross domestic product makes no distinction between items that are costs and items that are benefits. If you get into a fender-bender and have your car fixed, G.D.P. goes up.

A similarly counterintuitive result comes from other kinds of defensive and remedial spending, like health care, pollution abatement, flood control and costs associated with population growth and increasing urbanization — including crime prevention, highway construction, water

treatment and school expansion. Expenditures on all of these increase gross domestic product, although mostly what we aim to buy isn't an improved standard of living but the restoration or protection of the quality of life we already had.

The amounts involved are not nickel-and-dime stuff. Hurricane Katrina produced something like $82 billion in damages in New Orleans, and as the destruction there is remedied, G.D.P. goes up. And think about the causes of that flooding. New Orleans was once protected from storm surges by 50 miles of sponge-like wetlands between the city and the Gulf Coast. When those bayous were lost to development — sliced to death by channels to move oil rigs, mostly — gross domestic product went up, even as these "improvements" destroyed the city's natural defenses and wiped out crucial spawning ground for the Gulf Coast shrimp fishery. The bayous were a form of natural capital, and their loss was a cost that never entered into any account — not G.D.P. or anything else.

Wise decisions depend on accurate assessments of the costs and benefits of different courses of action. If we don't count ecosystem services as a benefit in our basic measure of well-being, their loss can't be counted as a cost — and then economic decision-making can't help but lead us to undesirable and perversely un-economic outcomes.

BECAUSE we use such a flawed measure of economic well-being, it's foolish to pursue policies whose primary purpose is to raise it. Doing so is an instance of the fallacy of misplaced concreteness — mistaking the map for the terrain, or treating an instrument reading as though it were the reality rather than a representation. When you're feeling a little chilly in your living room, you don't hold a match to a thermometer and then claim that the room has gotten warmer. But that's what we do when we seek to improve economic well-being by prodding G.D.P.

Several alternatives to gross domestic product have been proposed, and each tackles the central problem of placing a value on goods and services that never had a dollar price. The alternatives are controversial, because that kind of valuation creates room for subjectivity — for the expression of personal values, of ideology and political belief.

How, after all, do we judge what exactly was the value of the services provided by those bayous in Louisiana? Was it $82 billion? But what about the value of the shrimp fishery that was already lost before the hurricane? What about the insurance value of the protection the bayous offered against another $82 billion loss? What about the security and sense of continuity of life enjoyed by the thousands of people who lived and made their livelihoods in relation to those bayous before they disappeared? It's admittedly difficult to set a dollar price on such things — but this is no reason to set that price at zero, as gross domestic product currently does.

Common sense tells us that if we want an accurate accounting of change in our level of economic well-being we need to subtract costs from benefits and count all costs, including those of ecosystem services when they are lost to development. These include storm and flood protection, water purification and delivery, maintenance of soil fertility, pollination of plants and regulation of our climate on a global and local scale. (One recent estimate puts the minimum market value of all such natural-capital services at $33 trillion per year.)

Given the fundamental problems with G.D.P. as a leading economic indicator, and our habit of taking it as a measurement of economic welfare, we should drop it altogether. We could keep the actual number, but rename it to make clearer what it represents; let's call it *gross domestic transactions*. It would then be fairly easy to create a new, more accurate measure -- call it *net economic welfare*. On the benefit side would go such nonmarket goods as unpaid domestic work and ecosystem services; on the debit side would go defensive and remedial expenditures that don't improve our standard of living, along with the loss of ecosystem services, and the money we spend to try to replace them.

Is GDP a satisfactory measure of growth?

François Lequiller
Head of national accounts
OECD
[Edited by RJ]

If ever there was a controversial icon from the statistics world, GDP is it. It measures income, but not equality, it measures growth, but not destruction, and it ignores values like social cohesion and the environment. Yet, governments, businesses and probably most people swear by it. Part of the problem is that perhaps we expect too much from this trusty, though misunderstood, indicator.

Is GDP a satisfactory measure of growth?

If by growth you mean the expansion of output of goods and services, then GDP or preferably real GDP – which measures growth without the effects of inflation – is perfectly satisfactory. It has been built for this purpose. The letter P stands for "Product", the result of production. Gross Domestic Product is defined as the sum of all goods and services produced in a country over time, without double counting products used in other output. It is a comprehensive measure, covering the production of consumer goods and services, even government services, and investment goods.

In this single number, you get an idea of whether the economy is expanding or contracting. Paul Samuelson, Nobel Laureate and author of many textbook references, once described GDP as "truly among the great inventions of the 20th century, a beacon that helps policymakers steer the economy toward key economic objectives".

But, the public is so used to GDP that we sometimes forget how hard it is to accurately sum all of the goods and services produced in a country together, from bricks and tableware to banking and software. First of all, to make such aggregating possible, you need to define what production is and what it is not. Our conventions may sometimes look arbitrary, such as when we exclude the output of domestic work that is carried out in the home. We do not consider, for example,

that taking care of one's own children is production, whereas we do when a hired nanny does the same work.

Then, you need good statistics, which are not always easy to gather. For example, there are, by definition, hardly any statistics available on the underground economy. Third, we need a sophisticated system that can add it all together, from the number of new cars and haircuts, to the volume of teaching, etc. In GDP, each component is given the weight of its relative price. In market economies, this works because prices reflect both the marginal cost for the producer and the marginal utility for the consumer: people sell at a price that other people are willing to pay. But the contribution to welfare of the output of government services, in particular public education and health, which by definition have no market prices, is difficult to measure, despite their importance in our economies.

Finally, one could also recommend users to look at alternative measures to GDP that exist inside the national accounts, such as Net Domestic Product or National Income. These may be more suitable for measuring particular contexts (See *GDP and GNI*).

Might GDP be expanded -- to capture wellbeing, for instance?

First, it is inaccurate to say that GDP does not capture wellbeing. It captures at least the wellbeing that results from the production of goods and services. Indeed, when statisticians quantify the goods and services produced, they take into account their utility to the consumer. Nevertheless, it is true that there are other dimensions to wellbeing which GDP misses. And it is often said, sometimes cynically, that GDP increases when there are car accidents, or that while the terrible destruction of the recent tsunami in Asia undermined GDP by wiping out communities and their economic activities, it would at the same time lead to a boost in GDP, thanks to rebuilding, new investment and so on! However, this should not be held as a criticism of GDP, which is simply a measure of production.

If you want a number which will capture the negative effects of accidents on wealth, use the national accounts system, which contains many different aggregates, of which GDP is only one. It provides a general measure of the stock of national assets: the nation's "balance sheet", so to speak. The trouble is, few countries compile one.

On the other hand, neither GDP nor this balance sheet takes account of environmental degradation, insecurity or inequality. The main obstacle to overcome in deriving a single measure for all these dimensions is finding a convincing proxy price – or imputed price – for each and every component, on top of goods and services. Without such imputed prices, it is impossible to combine the various indicators that contribute to our wellbeing. The UN Human Development Indicator is a good attempt, and academics, such as William Nordhaus or Andrew Sharpe, have come up with some interesting possibilities. However, many statisticians, including me, are wary of adding too many imputations that could end up weakening the GDP indicator. We prefer instead to produce a suite of indicators.