Philosophy 1104: Critical Thinking

A 3rd Practice Quiz #5

TIME: 60 minutes

1. The following passages each argue for some policy on the basis of its costs and benefits. Identify any problems or weaknesses with the analysis given, or questions you have about it.

(i) Why some people don't want bike paths in Vancouver is beyond me. For cyclists they're great, of course, as you don't have to deal with cars. For drivers they're great, as you no longer have bikes in your driving lane. And bus riders enjoy buses that are less crowded! Everybody wins!

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(ii) Cigarette smoking is actually *good* for society, when you look at the actual numbers. Of course it's true that smokers tend to die young. But, happily for the rest of us, they tend to die quickly, from aggressive cancers, soon after they retire. So we don't have to pay for their pensions, or their health care, for very long. This saves us a lot of money!
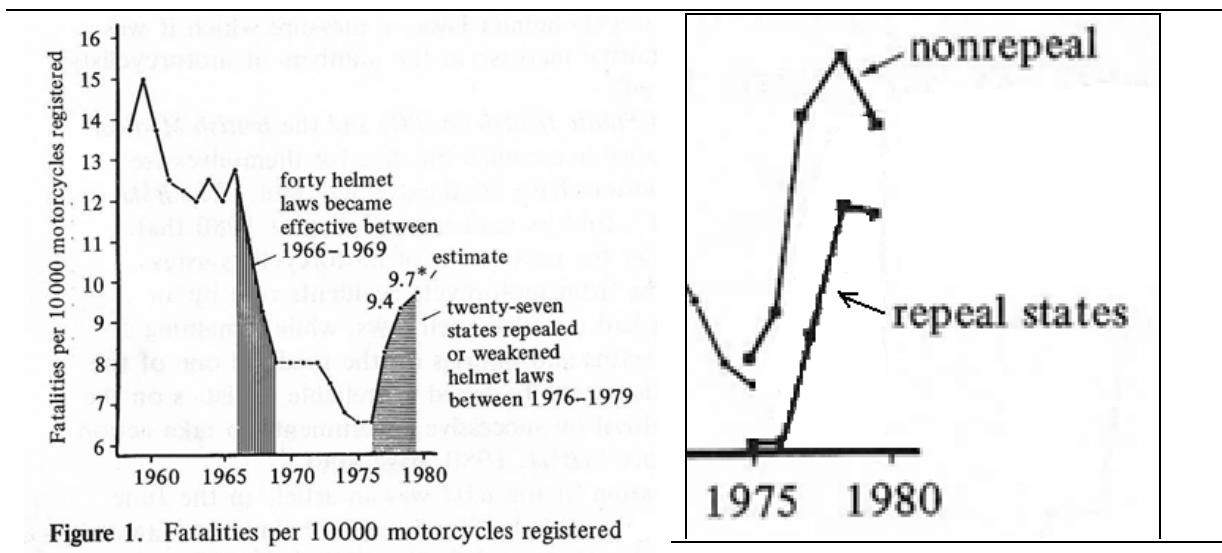
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(iii) The merry-go-round in that playground is a huge danger, and must be removed. In the past few years there have been numerous injuries to children using it, not just cuts and bruises but broken bones and even one concussion. Let's not wait until a child is permanently maimed on that thing. A kid could even be killed, potentially. What's the worst thing that can happen, if we remove it?

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2. The following graphs show the number of motorcycle deaths in the USA, per 10,000 motorcycles legally registered, from 1960 to 1980. The left graph also shades the time periods during which some states passed laws making motorcycle helmets compulsory (in the late 1960s), and when some of those states later repealed those laws (late 1970s).

The graph on the left shows the *total* deaths, adding all the US states together. The graph on the right separates the states that repealed their helmet laws ("repeal states") from those ("nonrepeal states") that did not.

Figure 1. Fatalities per 10000 motorcycles registered

(i) Does the graph on the left show any correlation the risk of death on a motorcycle in the USA, and the presence of helmet laws? If it does, then what type of correlation is it?

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(ii) Using Mill's methods, what seems (superficially at least) to be a reasonable *causal* conclusion to draw *from the left-hand graph*? Briefly explain your answer.

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(iii) Now consider the right-hand graph, in addition to the left. Does this additional information affect your conclusion in part (ii)? Explain you answer.

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3. Riding a bike in the USA is very dangerous, compared to most other countries, as measured by the fatality rate, as shown in the table below.

	Netherlands	**USA**	**Sweden**	**Germany**	**UK**
% helmet use	almost zero	high	medium	very low	high
% trips by bike	high	very low	medium	medium	very low
fatality rate	very low	high	fairly low	fairly low	medium

Using Mill's methods, what can you conclude from these data, about the *cause* of cycling being dangerous in the US? Briefly explain your reasoning.

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4. A careful study of spanking of children compared spanking during childhood with criminality as an adult. Each child in the study was categorised as frequently spanked (more than once per week) or not. Years later, when the (former) children reached the age of 30, it was determined whether or not each one had a criminal record. The results are shown in the table below.

	Criminal Record	No Criminal Record
Frequently spanked	25	160
Not Frequently spanked	14	642

(i) What is meant by the claim that frequent spanking is positively correlated with having a criminal record? Show that such a correlation exists here.

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(ii) What typical causal patterns are used to explain an observed correlation between two factors A and B? (e.g. A causes B, etc.)

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(iii) Write down what you see as the two or three best explanations of the specific correlation observed in this case. (Use different causal patterns.)

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5. How good are the following arguments from analogy? Point out any flaw in the argument, such as a relevant difference between the cases.

(i) I don't know why some people think cycle helmet laws discourage cycling. Do car seat belt laws discourage driving?

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(ii) Anti-choice activists say that a pregnant woman has to protect the life of the fetus inside her, since it is a human life, and no one else can protect it. But suppose a musical society abducted you during the night, and connected your blood vessels to those of a famous musician who was very sick, and would otherwise have died. You thus have become his life-support system, and it will be months before the musician can survive independently of you. Even though disconnecting him sooner than that will kill him, it seems clear that you have a perfect right to do so.

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(iii) I'm glad that environmental tobacco smoke is now recognised as the health hazard that it is. It's obviously immoral to force people around you to breathe in toxic smoke, without their consent.   But the same obviously goes for car exhaust fumes, which kill and sicken thousands of Canadians every year. I don't own a car, so why should I have to breathe in other people's toxic waste? Driving in cities should be banned.

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6. For each of the following, comment on the use of statistics, pointing out any flaws.

(i) Oddly enough, when teaching assistants add up marks incorrectly, they almost always arrive at a number that is *lower* than the true value. I've learned this fact over many years of teaching. In that time, perhaps a hundred students have shown me assignments with incorrect addition, and in every case but one the TA's sum was too low.

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(ii) The City of Vancouver claims that its Burrard Bridge cycle lane trial is a success, in terms of increasing the number of cyclists using the bridge. But the numbers I've seen don't bear this out. In June 2009, one month before the trial started, there were 3200 cyclists per day using the bridge. But 6 months into the trial, that number dropped to 1570.

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(iii) Google has been criticised for adding too much advertising to its web services. But its own research shows that the level of advertising is tolerable for most users. Their survey question: "Do you not think that there is too much advertising on Google sites? (yes/no)" obtained a resounding 74% of *yes*, indicating that they do not think there's too much. (N.B. this is a fictional example. Google, as we all know, is not evil!)

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(iv) Don't use sunscreen. The data I've seen for the USA show that in states where people use a lot of sunscreen there are actually *more* cases of skin cancer than in states where sunscreen is rarely used.

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(v)   Don't lecture me about the dangers of rock-climbing, while you're sunbathing. Only about 20 people a year die of rock climbing in the USA, while about 2 *million* new cases of skin cancer are diagnosed, mostly due to sun exposure, and at least 3,000 of these cases will be fatal.

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(vi)   Despite gloomy predictions, shoppers in Canada aren't cutting back on spending to any significant degree. A detailed study of over 3,000 households in West Vancouver found that the drop in spending this year was barely 0.5%, a number deemed not statistically significant.

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