

Philosophy 3334 Fall 2023  
Reading questions #12  
Due Tue, Nov 7

1) Read Harden chapter 5. Harden says that a gene causing a trait is a matter of a gene *making a difference* to that trait which she says implies that there are different alleles in the population which have different effects. Look at endnote 15 in the chapter. What if in fact there was no variation in the population for a phenotype. Lets say that in fact, everyone has exactly one head. Sober and Block would presumably still say that my genes are causing me to have one head. Do you think that is correct? Why? How could you explain what 'cause' means here? What do you think Harden (and/or Dawkins) would say in response?

I think it is correct that genes cause someone to have one head. This is true even if everyone has exactly one head. Harden's thought that we should look at what would happen if the cause *had not* occurred is correct. The claim that causes make a difference is correct. But it doesn't follow that there has to be two groups – one where the cause happened and one where the cause didn't happen. It could just mean that the cause makes a difference relative to what *would have happened* without it. So if the gene were different (maybe if there was a different genetic variant or maybe if there were no gene at all at that locus) then the person might not have a head or possibly could have more. This is a counterfactual difference even if in fact, everyone is the same.

Harden might point out that if everyone had one head then we couldn't possibly know which genes were causing us to have one head. One possible response is that we could have mechanistic knowledge (though developmental biology) that a gene was helping to produce a head. But even if we didn't know this, this is just a claim about whether we could know something is a cause – but the question is what it takes to actually be a cause – whether or not we know it.

2) What is the difference between 'thick' and 'thin' notions of causation? Try to fill out the following definitions. According to Harden:

2a) C is a thin cause of E if and only if ..... C raises the probability of E

2b) C is a thick cause of E if and only if ..... every time C happens E happens and this is the only way that E can happen.

If a social scientist says that "Smoking causes cancer" what do you think they mean? Is it one of these two definitions? Or something else?

I think the thin definition is basically what we mean – though to be really careful we might have to say that smoker increases the probability of getting cancer if we hold other things fixed.

3) After reading the chapter, come up with a question that you want answered or a topic that you would like to be discussed. This could be something that the chapters forced you think about or it could be something that you thought was particularly confusing in the chapters.