What's So Unobservable About Causation?

NJRPA Presentation November 13th 2004

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Sometimes when I speak carelessly and without thinking I can see by the look on the persons face that I have caused them to become angry or agitated, conversely by uttering a kind word or two I observe a positive effect. No doubt what I will say today will cause some to think that I am simpleminded. If a small fire were to start in the office trash can and I was to pour water on it, I could see the water extinguish the flame. While walking to class I kick a stone and see my foot cause the rock to begin its trajectory. With a lighter you can see the flame ignite a cigarette. Pointing a magnifying glass at a piece of paper on a sunny day will cause the paper to smoke and turn brown, eventually catching fire. A small dog biting at my ankles will cause a pinching sensation and perhaps annoyance! I take these to be examples of seeing A *cause* B, seeing A *causing* B and *feeling* A cause B. Nor are these examples special; cases like these can be multiplied indefinitely. In fact causation seems to me so obviously to be directly observable that at times I have to stop and ask 'who is it that says causation is unobservable?' Oh yeah, just about everybody. In Section seven paragraph six of the Enquiry Hume says,

> When we look about us towards external objects, and consider the operation of causes, we are never able, in any single instance, to discover any power or necessary connexion; any quality, which binds the effect to the cause, and renders the one an infallible consequence of the other. We only find, that the one ball does, actually, in fact, follow the other. The impulse of one billiard-ball is attended with motion in the second. This is the whole as it appears to the outward senses. The mind feels no sentiment or inward impression from this succession of objects: Consequently, there is not, in any single, particular instance of cause and effect, any thing which can suggest the idea of power or necessary connexion. (Hume 1999)

No doubt it was passages like this that lead to Kant's rather rude awakening from his dogmatic slumber. It seems to me, however, to have plunged us into one. What Hume has in effect done in the above passage is to pose a dilemma for the idea of causation. If it is to be a genuine idea it must either come from an outward impression or it must come from an inward impression and his conclusion is that it comes from neither. What we do have is an impression of causality that is not an impression of necessary connection and comes from inside. Hume goes on to argue for each of the claims that are made. The conclusion of the first argument is that "it is impossible that the idea of power can be derived from the contemplation of bodies, in single instances of their operation; because no bodies can ever discover any power, which can be the origin of that idea," (ibid. paragraph 8). Our idea of causation is really the idea of necessary connection. Thus Hume seems to be saying that since we cannot tell by looking at any given object what its causal powers will be, which is to say that we cannot tell what infallible consequence will follow, there is no way that the idea of causation could be taken from anything perceptible in the outside world. The argument he gives is brief because he simply takes it for granted that we cannot see causation with our outward senses and is mainly trying to show that the second lemma of the dilemma is inescapable by arguing that we do not have any such impression that originates from the inside; from the operation of our own mind.

This seems to me to be a classic case of cart before horse. We do not get the idea of causation from volition, or anything else internal; rather if we get it at all we get it from observing the world. We directly observe causation everyday of our lives; we have since before we were able to talk: It is ubiquitous. We then acquire causal terms to

describe to others the world around us and our actions in it. But in the first instance, as was pointed out many years ago by F.M. Cornford (Cornford 1960), the self is transparent. From the cradle we look into the world not into ourselves. The self, in an important sense, is a discovery that we make, usually symbolically accredited to Socrates, and not something that we are immediately aware of (cf. The Socratic Turn). Long before we realize that we can change the world through action we observe changes in the world that are out of our control and that can only be described as the effects of causes. For instance we witness the passing of the sun behind clouds and the subsequent darkness, we witness objects falling to the ground, we witness that motion is attended with sound, and etc. So, before we consign our physics books to the flames, I beg leave to attack the first horn of the dilemma.

There being nothing new under the sun, I am not the first to cast off the yoke that Hume would have us toil under. C.J. Ducasse, in a paper entitled 'On the Nature of Causation and the Observibility of the Causal Relation,' and G.E.M Anscombe in 'Causality and Determination,' (Tooley 1993), have both maintained that we can observe causation. I will examine each view and show why, although on the right track, both fall, in one way or another, into what I call *the paralysis of analysis*. In the course of doing so I will argue for the position that causation is as directly observable as any relation, for example being to the left of or being taller than. Crucial to my argument will be the distinction between causal *analysis* and causal *observation.* I believe this distinction has been missed for the most part because the thing analyzed and the thing observed are the same thing, to whit: a relation. In various ways these two have been confused and it has led to the plethora of confusing and sometimes ridiculous positions we encounter.

Whatever category your preferred causal theory falls into you will have to make two choices. The first of your choices reflects what you think act as the terms in the causal relation. The second choice addresses the question of the necessity of the relation and how to describe it. The arguments I will give for the observability of the causal relation do not depend on any particular theory of causation. Any theory will have to stipulate what they are analyzing as well as what the analysis is to be done with. That is the point of the distinction. Realizing that these issues are separable can help to remove the terrible fog that has hung over thinking about the observation of causation every since Hume.

Ducasse seems to be the first to pick up on the importance of the relational aspect of causation and points out that Hume's claim about the unobservability of causation would be true only under "the assumption that a 'connection' is an entity of the same sort as the terms themselves between which it holds…" (p.131). For Ducasse the terms in the causal relation are singular events. It is, he says, true that there is no sense impression that can be observed connecting these events, rather "the fact is that causal connection is not a sensation at all, but a relation" (p. 132). Hume's mistake was to look for the sense impression of a relation. This we will not find. What we do find, and do observe on Ducasse's view is a causal relation that holds "whenever we perceive that a certain change was the only one to have taken place immediately before [the effect], in the immediate environment of the [cause]" (ibid.).

Now, we do not have to embrace Ducasse's view that the causal relation holds between events that are taken to be singular terms. As I mentioned earlier I think it is unimportant what you take the causal relation to hold between. But it is right to repudiate

Hume for asking for a sense impression of a relation, qua relation. There do seem to be quite a few relations whose direct observability we take to be unproblematic. Being 'to the left of' is a perfect example. We do not see the relation 'to the left of,' but rather see one thing as being to the left of another. It does not even make sense to ask 'what does the relation 'to the left of' look like?' If asked this question all we could do would be to sigh and describe the position of the objects along with the definition of 'left,' and 'right.' Any further questioning about what 'left of' looks like would betray a category mistake. That is, mistaking a relation for an entity of the sort that it holds between.

So, why does Ducasse's view fail? The "standard" objection to his view relies on the observation that it is quite impossible to delimit the only change to have occurred. Consider a baseball hitting a window. Is the change the ball's being thrown, the ball hitting the window, the window shattering, etc…does the fly flying by as the ball hits the window count, &ct. This seems to me to be a sign of a more general failure, namely Ducasse's insistence, along with everybody else's, that in order to observe causality we must observe *that* the connection is necessary. By equating the observation of causation to the observation of the only change to occur he is trying to spell out a way that we can see the necessary-ness of the relation. But this is to fall into the paralysis of analysis, which is to fail to distinguish causal analysis from causal observation.

When we see one ball hit the other we observe that the two balls are related, one causes the other to move, but we do not see *that* the relation is necessary even though it is in fact a necessary one. Just as we can see X moving without seeing *that* X is going 22 MPH, or we can see X being 3 ft away from Y without seeing *that* X is 3 ft away from Y. Despite the fact that I do not see *that* X is three feet from me I do see the relation '3 ft

away from,' I just don't know that it is this relation. We see relation X qua relation while not seeing that X is such and such a relation. So on the view I am advocating we see A and we see B and we see A cause B but whether or not we see THAT the relation is necessary is a different question. Just like we can see a table and a desk and also that the table is to the left of the desk without seeing how far to the left it is; the analogy with relations like 'to the left of' is nearly exact. Thus by failing to distinguish between what gets observed (a relation) and how we analyze it (*that* it is necessary) Ducasse falls into the paralysis of analysis. This was Hume's failing as well. He argued that since we cannot observe the necessity of the relation we fail to see the relation at all.

Of course if you think, as I am inclined to think, that a scientist can come to directly observe an electron in a cloud chamber then you may be inclined to think that we can come to see *that* the causal relation is necessary. I have no quarrel with this view, but either way it is an extra step. Which is to say whether or not one ever comes to be able to see that *the table is three feet to the left of me* surely has nothing to do with ones being able to see the table to the left. Similarly, whether or not we see THAT the causal relation is necessary has nothing to do with ones being able to see causation.

It will be useful to compare the position I have been arguing for with Anscombe's much more radical position. She argues that equating necessitation with causality is a mistake because causation is not necessary. This is quite different from what I have argued. I have been claiming that it is a mistake to think that we have to see the necessity of the causal relation in order to qualify as seeing the relation at all not that it is a mistake to equate causation with necessitation. Her main argument for this position is as follows

> Causality consists in the derivativeness of an effect from its causes…for example, everyone will grant that physical parenthood is a causal relation. Here the

> derivation is material, by fission. Now analysis in terms of necessity or universality does not tell us of the derivedness of the effect; rather it forgets about that. For the necessity will be that of laws of nature; through it we shall be able to derive knowledge of the effect from knowledge of the cause, or vice versa, but that does not show us the cause as source of the effect. Causation, then, is not to be identified with necessitation. (Tooley 1993)

This is to join Ducasse & Hume in the paralysis of analysis. For Anscombe we observe the causation but not the necessity and so she concludes that causation is not a necessary relation. She is right that it is through laws of nature (or counter-factual propositions, again take your pick) that we derive knowledge of the necessity of the effect given the cause. But, again, we should not think that we must observe this necessary-ness. Causation is necessitation. The fact that we may or may not observe the necessitation and only observe the derivativeness, that is that X was the source of Y, should not force us to abandon the identification of causation with necessitation. Rather it should make us realize the importance of separating observation and analysis. The prosecution rests; Now for the defense.

A possible objection, which I owe to John Troyer is to ask what is the difference between seeing one billiard-ball hit another and thereby observing a causal relation and a phenomenally identical situation where there was no causation, say one where the first ball stops imperceptibly short of the second ball and the second ball is made to move by some pulley system or magnet under the table. If we can really *observe* causation, continues the objection, shouldn't there be some *perceptible* difference between these two cases; namely the causation?!? To which I answer: what is the difference between seeing a white wall with a red light shone on it from out of sight and seeing an actual red wall? In the first case we would say that the wall is not actually red, but is being made to

look as if it were red. Why can't we give the same answer to Troyer's objection? In the case where the first ball stops imperceptibly short of the second, which is then moved by a pulley or magnet we would say that it is *being made to look* as if the first ball causes the second to move. In fact we talk this way quite often, that is, using the language of 'looks' and 'seeming' to describe causal situations. It looks as if the dummy is talking but really it is the ventriloquist. It seems as though your uncle has removed his thumb but it is just an illusion. You thought the smell was coming from the fish but it is really a dead mouse behind the 'fridge. It looked like the shot killed him but it is only a movie. In fact it is because there is something that the causal relation looks like that we are able to mimic it convincingly.

We must be careful with the response I have been developing, as it can be somewhat misleading. Redness is a property that objects have while causation is a relation that holds between (say) events. A long while ago Russell (Russell 1945) complained that relations had been neglected in the debate between nominalists and realists with regard to universals. Plato, and so everybody after him, focused on properties and their instantiations but Russell maintained that this was a mistake and that 'north of' and the like should be admitted as proper universals. A similar mistake can be made here by understanding my argument as insisting that causation is an observable property (like red). One way to interpret the claim I have been making is as an echo of Russell's complaint. Causation is not an observable *property*; in fact it is a mistake to think that it is. Causation is not observable in the same way as being red is observable or being a paperweight is not. Causation is an observable *relation*. It is observable in the exact same way that being 'taller than is' or the way 'X is to the left of Y' is. Thus

analogies with properties like redness may lead us down the wrong path. The analogy is not to observing properties but to how we can be tricked into seeing something that is not there.

However, if one finds the redness in the example too distracting a similar analogy can be constructed with relations. Take the infamous case of the candle that appears to be directly in front of you but is really off to the side being reflected by a mirror (Harman 1973). Modify this slightly so that there are two candles, one that is directly in front of you and one appearing to be to the left of that candle but which is really out of sight and that you are seeing reflected in a mirror. Here we have a case where it looks like the second candle is to the left of the first but it isn't. What is the difference between *this* case and one where the second candle really is to the left of the first? In the Getttiered case it is being made to look as though the candle is to the left of the first but it really isn't. Now certainly we do not want to rule out 'being to the left of' as an observable relation!

This may give rise to an uneasy feeling in ones stomach. How can we ever tell that we are in fact actually observing a causal relation? One way this is done is via science whose main job, it could be argued, is the reducing of epistemic possibilities to the metaphysical. This is done by what Von Wright called 'manipulative causation,' which is the primary notion of causation used in the sciences. We have an idea of how the world will behave on its own and then we interfere with it. This allows us to "distinguish cause from effect--even in cases when the changes occur simultaneously"(Wright 1912-1913). As such this notion of causation is fundamentally dependant on human agency and so it may be worried that, come to find out, we do initially receive our idea of causation

from an internal source and not from looking out at the world. But this underestimates the force of the claim that it is only through knowing how the world will behave on its own that our manipulations will provide any information. Knowing how the world will behave on its own, apart from our interference is a product of our observation of the world with out interfering. And this is something we have been doing every since the doctor gave us that first slap on the ass that startled us into paying attention to what was happening around us. Thus science is one way we distinguish between correlation and causation.

Still, it may seem that none of our perceptual knowledge about causation can ever be *justified* because in any given instance we cannot be sure that what we are observing is causation and not correlation. Now, as just discussed, science is in the job of determining which of the correlations in the world are causations via experimentation and manipulation. But even so this cannot be how *we* operate! It would be highly inefficient if we had to have repeated encounters with something before we assign a causal relation. Instead we seem to jump to the conclusion that X caused Y. This is the default position and unless we have reason otherwise it prevails. Here we can see an instantiation of Chisholm's 'taking principle,' as well as Kent Bach's 'taking for granted principle.' Chisholm's principle offers an account of why it is we can rely on observational knowledge and states (roughly) 'if you are inclined to take X as F you are justified to believe that X is F,' (Chisholm 1989) whereas Bach's offers a way to justify beliefs despite Gettier type situations, like that of the candle mentioned earlier, and states (roughly) 'if it seems to me that P then infer that P unless you have reasons otherwise,' (Bach 1985). Both are helpful for what AI scientist call the frame problem as well as helping to explain why it is that we can sometimes mistake causation for correlation. We

are caught between a constant tug of war between ‘looking before we leap,’ and ‘he who hesitates is lost.’ The result is a trade off: we loose accuracy but gain efficiency.

So even if you were in the Matrix you would have justification for believing objects caused your percepts, unless you had reasons otherwise. Some of the characters in fact come to have reason otherwise and so stop thinking that what they are seeing qualifies as causation. This is the source of their power inside the Matrix. So the mere possibility of error should not impinge on our justification unless we have reasons otherwise. Incidentally, this is why people who are the victims of practical jokes usually go along with the premise. They usually don’t have any reason not to believe what’s going on and unless they do they never suspect anything until the gag is revealed. Why should observing causation be any different from any other kind of observing? Sometimes we get tricked, so what? But when we say things like ‘is that a puddle over there?’ and we find out that it was just the reflection and there is no puddle we do not conclude that puddles are unobservable but rather that ‘it looked like a puddle was over there.’ So too when we find that what we saw was mere correlation and not causation we should say ‘it looked as though x caused y,’ and not ‘causation is unobservable.’

One final objection. One may at this point think that I am no different from Hume. After all I have admitted that we can’t deduce effects from causes, we may in fact be wrong when we think we observe causation and so there really is no difference between Hume and I at all. But this is to miss the point! Hume claims that we have no impression of necessary connection that comes from outside us in the world and since we don’t have one that comes from inside either then we just don’t have an impression of necessary connection at all (see section seven of the Enquiry if you don’t believe me!).

The only reason he gives for our not having an impression of necessary connection is that we never see THAT the relation is necessary. I have been arguing that we do have an impression of necessary connection and it comes from outside us in just the same way that we have an impression of most relations and that whether or not we can see THAT it is necessary has nothing to do with our being able to observe it in the first place. If you think that this is trivial and anyone in his or her right mind should agree then that just illustrates the extent to which you, and I, disagree with Hume. The defense rests and I will now make some closing remarks.

Causation is a complicated and confusing subject. I hope to have shown that confusion about the observability of causation can be removed once we acknowledge the distinction between causal analysis and causal observation. We are then able to finally endorse the common sense view that we do observe causation without endorsing the crazy view that by doing so we have to observe that the connection is necessary. When we turn from questions of observation to those of analysis we are really changing the subject. The goal of analysis is to describe what we see in a way that captures the necessary-ness of the connection. But this is a different question from asking 'what it is that we see in the first place?' Perhaps with practice doing this we are even able to train ourselves to observe that the connection is necessary, perhaps not. In the end I do not think that this matters to the point I am trying to make. We find that just as with any other directly observable relation in the world, there are instances where we can be fooled. But this poses no real problem because generally we are not fooled, as we are usually reliable detectors of when something is amiss. In conclusion, as long as we avoid the pitfalls of conceptualizing causation as an observable property and instead embrace it as a relation,

as well as what follows from it so being and of thinking that we must see *that* the relation is necessary in order to see the relation at all, we emerge into the sunlight of common sense and may finally think *and* speak with the vulgar, who, after all, as Aquinas reminds us, have done us the great service of completing a vast amount of induction.

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