Equally effective causes

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Penelope Mackie (2000, this issue) accuses my (1995) theory of causation of committing me to 'making distinctions between facts which, in combination with [my] account of the extent to which a cause raises the chance of its effect, produces anomalous results'. I deny the charge.

In Mackie's example, of a climber Don dying by falling head down off a cliff, she distinguishes two factual causes of the fact that Don dies: F, the fact that Don falls, and F*, the fact that he falls head down. In the case that she thinks gives me trouble, the relevant chances of Don's dying are 1 if he falls head down (F*), 0.2 if he falls but not head down (F& ~F*), and 0 if he does not fall (~F). Then if the other conditions I impose on causation are met, it follows on my theory, which requires causes to raise the chances of their effects, that Don dies both because he falls and because he falls head down.

My theory seems moreover to say that Don's falling raises his chance of dying *more* than his falling head down does, since the former raises it from 0 to 1 and the latter only from 0.2 to 1. It is to this that Mackie objects,

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on the grounds that

> it is not … *the fact that Don falls* in the actual situation that explains why his chance of dying is so much higher than it would have been, had he not fallen at all [but], rather, … *the fact that Don falls head down* [her italics]. (2000: 68)

The problem with my measure of how much a cause C raises an effect E's chance, Mackie asserts, is that it goes wrong when the circumstances which I say fix E's chance with C entail C, as she says they do here, since F* entails F. Arguing, rightly, that I should reject the responses to her example that she considers, she concludes that there is no obvious way in which I can stop my theory having the consequence she rejects. She is mistaken.

First, my theory assumes that the circumstances which I say fix E's chance with C – which I write '$ch_C(E)$' – never entail C. The reason is that,

> regardless of its role in causation, $ch_C(E) = p$ must be logically independent of C and E. For first, it is obvious that, for all p,
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> $ch_C(E) = p$ entails neither C nor ~C.
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> For example, whatever Don's chance of dying if he falls, it entails neither that he falls nor that he does not. (1995: 168).

Facts that entail C need thus never be included in the factual circumstances S that make $ch_C(E) = p$ for some p. I also assume (1995: 26) that the very same S may also fix E's chance *without* C, which of course if S entailed C it could not do. This is why I take it for granted in my 1995 that S is to exclude all facts entailing C or ~C: I thought – wrongly as it now appears – that this assumption was too natural and obvious to need stating explicitly.

For me, therefore, Mackie's F* is *not* a conjunct in F's circumstances (S), but rather a conjunction of one such conjunct, F′, the fact that Don's orientation *is* head down, with F, the fact that Don falls. F is of course a conjunct in F′'s circumstances S′ (Don falls while he is head down) just as F′ is in S (Don is head down while he falls).

But how does this distinction between F* and F′ help me to meet Mackie's objection? For I certainly say that F raises Don's chance of dying more than F′ does: since while F′, given F, raises Don's chance of dying from 0.2 to 1, F, given F′, raises it from 0 to 1. Here however it clearly *is*

> the fact that Don falls in the actual situation [in which he is head down] that explains why his chance of dying is so much higher – 1 rather than 0 – than it would have been had he not fallen at all.

All that Don's being head down in the actual situation (in which he falls)

explains is why his chance of dying is higher – 1 rather than 0.2 – than it would have been had he fallen but not head down. In this case I defy anyone to deny that F raises Don's chance of dying more than F′ does.

But it does not follow from this that F raises Don's chance of dying more than Mackie's F*, i.e. F&F′, does. For whether F does that depends on what Don's chance of dying would have been without F&F′, i.e. if Don had not fallen head down. And that in turn depends on whether it is 'F' or 'F′' that would then have been false, i.e. on whether Don would have fallen, but not head down, or would not have fallen at all. If the former, Don's chance of dying would have been 0.2; if the latter, 0. Which it is Mackie does not say explicitly. But she does so implicitly in claiming that what

> explains why [Don's] chance of dying is so much higher than it would have been had he not fallen at all [is] *the fact that Don falls head down*.

For this seems to me to be true only if, had Don not fallen head down, he would not have fallen at all, i.e. if his chance of dying would then have been 0. But in that case my theory says that F* raises Don's chance of dying from 0 to 1, i.e. raises it no less than F does, just as Mackie requires.

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References

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