

## Supervenience: From Synchronic to Diachronic

In his seminal paper on supervenience, “Moral Realism,”<sup>1</sup> Simon Blackburn distinguished between supervenience as it holds between kinds of properties *at a time*:

(S<sub>2</sub>) A property *M* is supervenient<sub>2</sub> upon properties *N*<sub>1</sub>...*N*<sub>*n*</sub> if ...it is logically impossible that two things should each possess the same properties from *N*<sub>1</sub>...*N*<sub>*n*</sub> to the same degree, without both failing to possess *M*, or both possessing *M* to the same degree.

and supervenience as it holds between kinds of properties *over time*:

(S) A property *M* is supervenient upon properties *N*<sub>1</sub>...*N*<sub>*n*</sub> if ...it is logically impossible that a thing should become *M*, or cease to be *M*, or become more or less *M* than before, without changing in respect of some member of *N*<sub>1</sub>...*N*<sub>*n*</sub>.

Let us call (S<sub>2</sub>) *synchronic supervenience* (actually *weak synchronic supervenience*), and call (S) *diachronic supervenience*. Blackburn went on to remark that (p. 115):

It is difficult to think of a property that might be supervenient upon some others in the sense of (S) [*diachronically*] but not supervenient<sub>2</sub> upon those others in the sense of (S<sub>2</sub>) [*synchronically*], and I can think of no argument that might be used to show that moral properties are supervenient upon naturalistic ones in one sense but not the other.

Let us grant him the claim that diachronic supervenience implies synchronic supervenience, but in this paper we will examine the converse move from synchronic supervenience to diachronic supervenience. This converse move has not been much discussed.<sup>2</sup> Although Blackburn’s “Moral Realism” paper was concerned especially with moral properties, later papers, such as “Supervenience Revisited,”<sup>3</sup> extended his discussion to mental properties as well—and we will be considering a variety of kinds of properties, not just moral properties.

Are there any examples to show that properties are supervenient in one sense, but not the other? Consider the following three cases:

(A) On Monday I judge that a case of abortion is morally wrong, and another case of abortion, just like it, is morally acceptable.

(B) On Monday I judge that a case of abortion is morally wrong, and on Tuesday I judge that it, or a case just like it, is morally acceptable.

(C) On Monday I judge that a case of abortion on Monday is morally wrong and a case just like it, except that it occurs on Tuesday, is morally acceptable.

Case A seems unacceptable because it violates synchronic supervenience. Case C seems unacceptable because it violates diachronic supervenience. (We might call C an analogue of “pure time preference”.)

But what about Case B? B is no different from C except that the judgements take place at different times. This allows for the possibility that the principle guiding the judgement might have changed. Perhaps I have had a change of heart—or mind—between yesterday and today. One might object to my inconsistent judgements, but this may be an appropriate occasion to invoke Emerson’s slogan that “Foolish consistency is the hobgoblin of little minds.”<sup>4</sup> One oughtn’t to go on judging in a certain way merely for the sake of consistency. But diachronic supervenience does seem to preclude my looking back (on Tuesday) on the case of abortion on Monday and continuing to maintain that it was wrong. If I change my mind, I have to change my mind about the past case (or that case in the past) as well.<sup>5</sup>

But we do seem to have a case—B—where an action has ceased to be *M* [morally wrong], without changing in respect of some member of  $N_1...N_n$ . One might object that *my endorsement* of a certain moral principle should count as a member of  $N_1...N_n$ , but that seems a

stretch—as those naturalistic properties were meant to be properties of the *action*. My (holding a) principle (about the action) could hardly be construed as a property *of the action* being judged.

Another way to make this point is to imagine a possible world (fully, or at least relevantly, described by  $N_1...N_n$ ) which I judge to be, say, unjust. I might later judge this world (or one exactly/relevantly like it) to be just. Here we have no temptation to think of my judgement as (a naturalistic) part of the situation being evaluated. Yet the world has ceased to be  $M$  [unjust], without changing in respect of some member of  $N_1...N_n$ .

This case, however, does bring out a problem not always noticed—the cases we have been considering have clearly treated moral properties as projected by a judge, rather than as “had” by an action. They are cases of what I have called *ascriptive supervenience*, whereas we may have had something else in mind.<sup>6</sup> (Interestingly, Blackburn, like Hare and even Davidson, really did have ascriptive supervenience in mind after all—even though his phrasing suggests otherwise.<sup>7</sup>)

Suppose we focus, instead, on what I have called *ontological supervenience*. This would involve being realists about the supervening properties, rather than anti-realists. Could we imagine violations of diachronic ontological supervenience—Could the supervening *facts* change over time without a change in the subvening facts? The cases that come most readily to mind here are cases of what we would call “conceptual change.”

Consider the medical condition of “consumption,” known to us now mainly through the novels of Dostoevsky and Dickens. In *Crime and Punishment* Sonia’s step-mother, Katerina Ivanovna Marmeladov, has consumption. In fact in 1815, one in four deaths in England was due to consumption. Now, no one dies of consumption—not because, like smallpox, we have virtually cured the disease, but because there is no such disease any longer. If a molecule-by-

molecule replica of Katerina Ivanovna were to appear now, she would not have consumption, but, most likely, tuberculosis. If Katerina Ivanovna's consumption were not "rapid," and she managed to live with it through the changes in medicine of the early Twentieth Century, it might be said that she had ceased to have *M* [consumption], without changing in respect of some member of  $N_1...N_n$ . (This is a stretch, especially since consumption is a "progressive wasting away of the body," but you get my point.) She wasn't *cured* however—which presumably would require a change in respect of some member of  $N_1...N_n$ .<sup>8</sup>

One may be tempted to try to assimilate this example to the case of ascriptive supervenience discussed earlier. Rather than saying that she *had* and then *ceased to have* consumption, we should say that: she was *said to have* consumption and then was *no longer said to have* consumption. There was never a *fact* of Katerina Ivanovna having consumption, because consumption was shown to have been a defective concept, conflating, as it did, various conditions which we now would *call* tuberculosis, lung cancer, pleurisy, and so forth.

This is a possible position to take, especially given our modern rejection of consumption as a useful concept. But it is hard to divide concepts confidently between those we can afford to take an ascriptive view of, and those we honor as factual (or, ontological). For example, according to the World Health Organization, lung cancer causes 1.3 million deaths annually world-wide. Yet those who study cancer know that, like consumption, it may turn out to conflate a variety of conditions that researchers will eventually find to be worth distinguishing. And it is hard to know what it would take to be confident of a concept, in a way that would insulate it from these kinds of considerations.

If the assimilation to ascriptive supervenience is to be complete, however, we must not only say that Katerina Ivanovna no longer has consumption, but that she *never did*. And not only

that people no longer die from consumption, but that they *never did*. That seems harder to accept. It holds the truth of all such claims hostage to the future march of science (and not the discoveries of science, but the conceptual impact of science).

On the other hand, my judgement that this case of abortion today is morally acceptable entails that the same or relevantly similar case yesterday wasn't morally wrong *after all*, despite my condemnation of it at the time. And we similarly would feel comfortable (don't we?) with an analogous treatment of the concept of a *witch*—having decided that there are no such things as witches, we comfortably add: *and there never were*.

So the fate of diachronic ontological supervenience seems to hang on our treatment of cases of conceptual evolution where we come to, not so much reject as, refine a concept. Under such circumstances it seems fair to say that something that was *M* has ceased to be *M*, without changing in respect of some member of  $N_1 \dots N_n$ . So what we seem to have is a contingency in the relationship between *N*-type properties and *M*-type properties, not at a time, but over time.<sup>9</sup>

How might a concept evolve in this way? Imagine a world at a (span of) time  $t_1$  in which there are (among other things) two activities, which we will characterize in physicalistic terms as *Q* and *Z*. And let us suppose that *Q* is a sport, and *Z* is not. Now imagine the passage of time in which, in a later world at  $t_2$ , *Q* and a related activity *R* are both engaged in. *R* is sufficiently similar to *Q* that *R* is (considered) a sport. Now imagine the passage of time in which, in a later world at  $t_3$ , *Q* and *R* and a related activity *S* are all engaged in. *S* is sufficiently similar to *R* that *S* is (considered) a sport. And so on.... We can imagine a later world at  $t_{10}$  in which *Z* occurs, and in which there also exist enough other activities, intermediate between *Z* and *Q*, that *Z* is (considered) a sport. The extension of the concept of *sport* to *Z* is appropriate at  $t_{10}$  because of the many intermediate activities that connect *Z* to *Q*, but the extension to *Z* is not appropriate at

$t_1$  because there are no intermediate activities that, in a sense, constitute the similarity of Z to Q. One might say: Q and Z do not form a family; but Q, R, S, T, U, V, W, X, Y, and Z *do* form a family.

This is not meant to be an epistemological point, as though the intermediate activities merely help us to *see* the similarities. But it is the actual presence of the intermediate activities that form a chain of connections that join Q and Z, making an extension of the concept natural in a way that it was not before. So that Z was not a sport at  $t_1$  and is a sport at  $t_{10}$ .

An example I have in mind is Rock-Paper-Scissors. When I was growing up, this was a game, but not a sport. Now it is televised on ESPN.

One might hold that what makes it a sport (now) is the *fact* that competitions are held and they are televised. If this were the reason, then we could say that RPS-when-I-was-growing-up, and RPS-now are not really the same activity after all, because of the publicity. But I propose that what makes something a sport is not *that* its competitions are televised, but rather *that* it is the kind of activity that might be televised (on ESPN).

What makes RPS a sport, now, is that poker is apparently a sport. And what made poker a sport was...well, I don't know. But the point is that there is now a chain of activities intermediate between Q (say, baseball) and Z (say, RPS), including poker, such that Z is now a sport, but wasn't before. Yet Z has not changed. That would seem to be a violation of diachronic supervenience.

But perhaps these problems just arise from context—the existence of the continuum, or the existence of the other cases in the family. The best way to ensure that contextual factors are not playing an inappropriate role here—by changing Z into something else, say,  $Z^*$ —would be to redescribe the cases in terms of possible worlds. So we consider a possible world in which Z

(RPS) occurs over a stretch of time. Is that a “sporting” world or not? Judged when I was growing up, it is not. Judged now, it is. Shall we say it changed to become a sporting world? Suppose the world we are considering is just a fairly short time-span, and we consider it when I was growing up, and we re-consider *it* now. This might lead us to say there is a violation here of even synchronic supervenience. The question is whether we are now judging that it was a mistake to judge it, when I was growing up, as a non-sporting world. I think not. We weren’t simply failing to appreciate that it was a sporting world.

Consider, however, the following general argument, designed to prevent diachronic supervenience from diverging from synchronic supervenience. Earlier we considered (S<sub>2</sub>), which I called *weak* synchronic supervenience.<sup>10</sup> Weak—because it only applies to similar situations within a possible world. This can be strengthened, however, to what has been called *strong* synchronic supervenience, which applies to similar situations whether they are in the same or in different possible worlds:

(S<sub>1</sub>) A property *M* is supervenient<sub>1</sub> upon properties *N*<sub>1</sub>...*N*<sub>*n*</sub> if, given that an object with properties *N*<sub>1</sub>...*N*<sub>*n*</sub> in a possible world has *M*, any object with properties *N*<sub>1</sub>...*N*<sub>*n*</sub> in any possible world has *M*.

or, more formally (where N<sup>#</sup> ranges over maximal conjunctions of naturalistic properties):

$$(\forall M \forall N^{\#} \forall x \forall w) \{ (x \in w \ \& \ N^{\#}x \ \& \ Mx) \supset [(\forall y \forall v)(y \in v \ \& \ N^{\#}y) \supset (My)] \}.$$

Which is to say, if an object with a certain naturalistic constitution has a supervening property in one world, then it has it in any possible world—(necessarily) it has it necessarily. So if we simply treat time as an additional index for possible worlds, or if we treat worlds at different times as different possible worlds, then we can model diachronic supervenience within (strong) synchronic supervenience. And hence, it follows from (strong) synchronic supervenience.

Or else, what it shows is that the tools of possible worlds do not adequately capture supervenience in all its aspects. In particular, possible worlds conflate the difference between evaluating-at-different-times a (type of) situation, and evaluating situations-at-different-times. Thus, we have not really modeled diachronic supervenience after all—we have conflated the scenarios (B) and (C) from earlier in this paper. So, I think this general counterargument fails.<sup>11</sup>

To the extent that the surrounding factors are assimilated to the thing being judged, we may be inclined to say that the thing being judged has changed over time. To the extent that we assimilate the surrounding factors to the realm of the judge, we may be inclined to say that the judgement concerns ascriptive supervenience, not ontological supervenience. So there is a genuine resistance in us to the possibility of violations of ontological diachronic supervenience.

Does this prove that ontological diachronic supervenience is true? It seems to show, rather, that it is a regulative principle we are committed to holding onto. But given the strong tendency to redescribe cases that seem to conflict with it as violations of ascriptive supervenience, one might turn the argument around and wonder whether there are any cases of *ontological* supervenience after all. The clearest case would seem to be one in which we have independent access to the supervening property—independent, that is, of its subvening base. This independent access would presumably assure us of the ontological solidity of the supervening property, so that we needn't suspect it of having a merely ascriptive nature.

Perhaps mental properties would be the best example to try—one's own mental state of, say, pain. While pain, as well as other mental states, might be supposed to supervene on an organism's physical states, presumably brain states, we don't take ourselves to be in pain or not on the *basis* of our brain states—that is, we don't use brain states as *evidence*. So, could I be in pain at one time, my brain remain the same, and yet not be in pain at another time? Here the use



of “I” is crucial—indicating not just a particular person, but a first-person perspective on that person. After all, the possibility of conceptual change allows that *he* might “change” from being in pain to not being in pain, without a change in his brain, as judged from the third-person perspective. But from the first-person perspective, any conceptual shift that changed the scope of the concept pain would presumably be embodied in the judge, and this would then entail a change in the judge’s brain, which would undermine the hypothesis that the subject’s brain (which in this case *is* the judge’s brain) remains the same through this process.

So, for example, the eliminative materialists’ idea that our self-understanding may evolve—so that, say, the concept of pain drops out of our conceptual scheme altogether, or breaks down into a variety of different concepts—would allow that what we call pain now would not be called pain later. But whatever it is that leads us not to call it pain later presumably is embodied in the very brain that is not later said to be in pain. So the scenario is not one in which the brain remains the same after all. Thus, the scenario cannot be used as a test of supervenience.

The necessity of the first-person perspective to make this case work as it does, is just the feature that leads Wittgenstein to assimilate “I am in pain”—the very judgement we are using here—to a *cry* of pain.<sup>12</sup> That is, it is not the application of a concept to classify a state of affairs after all, but an expression of feeling. So again we have left the realm of ontological supervenience. Saying that *he* has pain can be a description alright, but then we are back to the possibility of conceptual change.

So then...The two main threats to diachronic supervenience are changing ascriptions, or changing concepts. In both cases, these can be interpreted so as not to threaten diachronic ontological supervenience—which can then, however, seem vanishingly thin.<sup>13</sup>

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<sup>1</sup> Originally published in 1971, reprinted in Simon Blackburn, *Essays on Quasi-Realism*, Oxford University Press, 1993.

<sup>2</sup> But see my essay "Davidson's Troubles with Supervenience," *Synthese*, vol. 85, no. 2, November, 1990, p. 350 note 27. For earlier mention of the issue, see G. E. Moore, "The Conception of Intrinsic Value," in his *Philosophical Studies*, 1922, pp. 260-61.

<sup>3</sup> Originally published in 1985, and also reprinted in *Essays on Quasi-Realism*.

<sup>4</sup> Ralph Waldo Emerson, "Self-Reliance" (1841): "A foolish consistency is the hobgoblin of little minds, adored by little statesmen and philosophers and divines." One might judge that Creon was such a "little statesman" for sticking by his pronouncement to punish Antigone for her (attempted) burial of Polynices (in Sophocles' play *Antigone*). Even as reasons accumulate for him to rethink his pronouncement, unwillingness to be seen as changing his mind prevents him from doing so. Similar things might be said of George W. Bush's dogged pursuit of the war against Iraq.

<sup>5</sup> Blackburn's formulation (S) does not allow us to capture the important distinction between my cases (B) and (C).

<sup>6</sup> See my essay "Supervenience: Ontological and Ascriptive," *Australasian Journal of Philosophy*, vol. 66, no. 4, December, 1988, §II.

<sup>7</sup> Blackburn uses the term "projectivist" (p. 144) rather than "ascriptivist." I bring out the ascriptivist aspect of Davidson's views, and compare him with Hare, in my essay "Davidson's Troubles with Supervenience," §3.

<sup>8</sup> Presumably the miraculous cures in the Bible were ones in which the sufferer miraculously changed in respect of some member(s) of  $N_1...N_n$ , and thereby ceased to have the disease. But a *truly* miraculous cure would be one in which the sufferer remained the same in regard to  $N_1...N_n$  yet ceased to have the disease!

<sup>9</sup> I discuss cases like this in my essay "Wittgenstein and Neuroscience," *Synthese*, vol. 78, no. 3, March, 1989, §§2-3. Traditionally, discussions of Wittgenstein's notion of criteria have made it seem that criteria are fixed and non-contingent, but in fact Wittgenstein acknowledges that criteria can fluctuate (through time), making it "look as though there were nothing but symptoms" (*Philosophical Investigations* §354). This suggests to me synchronic supervenience (at a time, insofar as criteria are considered fixed) but not diachronic supervenience (since what were criteria could become mere symptoms).

<sup>10</sup> For the distinction between weak and strong supervenience, see my essay "An Alleged Difficulty Concerning Moral Properties," *Mind*, vol. XCIII, no. 371, July, 1984, §II and Appendix.

<sup>11</sup> The background of this argument can be found in my essay "Supervenience: Perspectives vs. Possible Worlds," *Philosophical Quarterly*, vol. 37, no. 148, July, 1987, §§III and IV. This is further illustration of my contention that possible-worlds formulations do not capture all the various complexities of supervenience claims.

<sup>12</sup> *Philosophical Investigations* §244.

<sup>13</sup> An earlier version of this paper was presented at the Pacific Division Meeting of the American Philosophical Association, Pasadena, CA, March, 2008. I have benefited from comments on that occasion by Stavroula Glezakos and JeeLoo Liu.