

# Ontology, Composition, Quantification, and Action

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Bryan Frances

Abstract:

The literature on material composition has largely ignored the composition of actions and events. I argue that this is a mistake. I present a set of individually plausible yet jointly inconsistent claims regarding the connection between quantification and existence, the composition of physical entities, and the logical forms of action sentences.

Keywords: quantification, existence, composition, physicalism, action, logical form

Claim (1): the following action sentences are true.

- a) Sirhan killed Kennedy
- b) Sirhan killed Kennedy with a gun
- c) Sirhan shot Kennedy
- d) Sirhan killed Kennedy by shooting him

Claim (2): (d) entails (a) and (c), and (b) entails (a).

Claim (3): if (1) and (2) are true, then (a)-(d) quantify over action tokens. That is, something *more or less akin to* (e)-(h) express the logical forms of (a)-(d), as that's the most plausible way to account for (1) and (2).

- e)  $(\exists x)[\text{Killing}(x, \text{Kennedy}, \text{Sirhan})]$
- f)  $(\exists x)(\exists y)[\text{Killing}(x, \text{Kennedy}, \text{Sirhan}) \ \& \ \text{With}(x, y) \ \& \ \text{Gun}(y)]$
- g)  $(\exists x)[\text{Shooting}(x, \text{Kennedy}, \text{Sirhan})]$
- h)  $(\exists x)(\exists y)[\text{Shooting}(x, \text{Kennedy}, \text{Sirhan}) \ \& \ \text{Killing}(y, \text{Kennedy}, \text{Sirhan}) \ \& \ \text{Method}(x, y)]$

Claim (4): if (a)-(d) are true and quantify over action tokens, then those action tokens exist. That is, *whatever* the connection is between quantification and existence, it will secure the material conditional 'If (a)-(d) are true and quantify over action tokens, then those action tokens exist'.

Claim (5): if the Kennedy action sentences are true, then the Jasmine ones below are true as well, as they are on a par with the Kennedy sentences. That is, there is no reason to think people can kill and shoot but can't do the things Jasmine does.

Jasmine raised three children  
Jasmine earned her Ph.D.

Jasmine discovered the riches of mathematical logic  
Jasmine courted her lover  
Jasmine wrote a novel  
Jasmine planned for her retirement

Claim (6): if the action tokens for (a)-(d) exist, then provided the Jasmine sentences are true, the action tokens for the Jasmine sentences exist as well. Again, the thought is that one cannot drive a wedge between relatively short actions (like the Kennedy ones) and long, involved actions (like the Jasmine ones).

Claim (7): if the Jasmine action tokens exist, then they (i) are physical and (ii) in some sense “boil down to” a great many physical entities. Presumably, the entities would themselves be events or processes (since the action tokens are thus). I will say more about this “boiling down to” below.

Claim (8): if the Jasmine action tokens exist and are physical things that in some sense “boil down to” a great many physical entities, then each of the action tokens has a *not wildly indeterminate* composition into tiny physical bits (e.g., events or processes involving individual molecules or atoms). I will say more about indeterminacy below.

Claim (9): it's not true that the Jasmine action tokens have a not wildly indeterminate composition into tiny physical bits. That is, if they have any composition into tiny physical bits, the composition will be wildly indeterminate.

The claims are collectively inconsistent. So ... which one is false?

I am not going to solve the puzzle; I'm not even going to present my guess at a solution. Instead, I will comment just enough to establish the worth of the puzzle. Only claims (7)-(9) need much in the way of detailed explanation.

Claim (7) is not just physicalism for the Jasmine action tokens: it adds the claim that those tokens are physically *high-level*, so to speak, since they boil down to a great many physical events. For instance, no matter what you think the token corresponding to 'Jasmine earned her PhD' is, you will agree that if it's physical then it's nothing like the absorption of a photon by an individual atom, say, which for all its complexity is exceedingly simple in comparison to virtually any neurological event or macroscopic bodily process. If physical, each of her action tokens mentioned above includes an enormous number molecular or atomic events or processes, especially since each token extends over a considerable time period and involves a great many actions as parts.

In claims (8) and (9) the qualification 'not wildly indeterminate' is key. Most of us will insist that just about any physical thing fails to have a “fully determinate” physical composition, regardless of whether the vagueness is epistemic, representational, or ontological. In order to understand this claim, imagine a large brick wall that is crumbling away. If the case is chosen carefully, there will be many bricks for which the question 'Is this particular brick part of the wall?' is unanswerable. It's clear that the brick in question *was* part of the wall, but the wall has now deteriorated to the point that it's not at all clear that the brick is still part of the wall. So you could say that the wall is made of these 1023 bricks, or those 994 bricks or those 1102 bricks—each answer is quite reasonable given all the borderline cases (naturally, those three won't be the only reasonable answers; there will be many other ones that are just as reasonable; and of course the pluralities of bricks will overlap almost entirely). But it would be bizarre to

think that the wall is made of just 392 bricks or 2328 bricks: it can't be the case that the first three answers are reasonable and these two are reasonable as well. Vagueness generates multiple more or less equally reasonable answers to 'Which bricks make up the wall?', but it won't generate the *extreme* indeterminacy just described, the 392 and 2328 answers alongside the 1023, 994, and 1102 answers. *No matter what vagueness comes to* (ontic, epistemic, representational), if each of those five answers is reasonable and they are about equally reasonable, then either there is no brick wall there or there are several. Claim (a) is true but (b) is false.

- (a) It's possible that 'The bricks that make up wall W' has precisifications that are both reasonable and about equally reasonable even though they differ in attributing 994, 1023, and 1102 bricks.
- (b) It's possible that 'The bricks that make up wall W' has precisifications that are both reasonable and about equally reasonable even though they differ in attributing 392, 994, 1023, 1102, and 2328 bricks.

No other thesis about vagueness is involved in the puzzle, and I take it that '(a) is true and (b) is false' is consistent with most epistemic, ontic, and representational theories of vagueness. Claim (8) is saying that an analogous point is true for action tokens, making the shift from substances to events/processes. I'll consider possible counterexamples to (8) below.

The paradox exists because the Jasmine action tokens *do* appear to have wildly indeterminate physical compositions, assuming they have physical makeups at all. That gives us claim (9), which I turn to now.

Consider some action tokens that are the best candidates for being physically grounded: Jasmine pulled the trigger, flicked the switch, and crossed her toes. In each of these three situations it may seem to a realist about action tokens that there is one event or process token that satisfies an action predicate and is composed of a plurality of straightforwardly physical events or processes. There is plenty of disagreement regarding what might be called the *arena* of physical events that compose an action token. For instance, when Jasmine flicks a light switch upon entering a room, is the action nothing over and above the movements of her arm and hand? Or do we include just muscular movements *inside* her arm and hand? Should we include just the neurophysiological events that caused the arm movements—or the brain events that caused the muscle contractions? Or is the action composed of some causal processes extending from brain events to the arm and hand movements or muscular contractions?

Let us suppose for the sake of argument that these questions have been settled in favor of the idea that if action tokens are physically composed, then they are grounded in *just* neurophysiological events that cause muscle contractions. The case for (9) holds up even if this "arena problem" is solved.

Consider the action token of Jasmine earning her PhD. Jasmine found that pacing back and forth was quite helpful while brainstorming on her dissertation topics. Which physical events involved in these episodes bear the physical whole-part relation to her action token, assuming for the sake of argument that there is such an action token—the Jasmine token? Do we choose just some of her brain events associated with internal verbalizations, or do we also include the brain processes that caused her muscular movements in walking? Suppose she also found it necessary to talk while thinking—do we include another batch of physical events associated with her talking? What about all the time and effort she put into writing a paper that did not make it into the dissertation but influenced it some ways? What about the times she was checking through the library and failed to come up with anything of relevance to her dissertation? Suppose she spent many hours going over elementary mind-body issues when

grading for an introductory philosophy course but did her dissertation on applied ethics and did not have the philosophy of mind count even as an area of competence; do we include her brain processes during those hours, given that they made her a better philosopher and thus improved her work on her dissertation? Suppose she gave an APA talk that had a profound effect on her thinking because her presentation manner was so good that she won her audience over. Do we include the neurological causes of the physical movements included in those mannerisms that played the crucial role or have we ventured too far from the nuts and bolts requirements for earning a PhD? What about all the time she spent writing material initially intended for her dissertation but abandoned because it was not exactly relevant? What about the acknowledgments section or dedication?

That's the *mere beginning* of the questions one would need to answer to find the physical composition of the action token. The problem is that no plausible principles are available to adjudicate among *wildly* incompatible candidate composition sets: even if we stick to neurophysiological tokens that do not overlap, the sizes of candidate composition sets for the Jasmine token appear to differ *enormously*. This is not an irrelevant difference along the fringes or penumbra of a vaguely defined system of entities; instead, it's akin to the impossible brick wall that could be reasonably said, with equal and significant plausibility, to have 392, 2328, 1023, 994, or 1102 bricks. The case is just as or even more convincing when it comes to many, many other actions of Jasmine's: her discovering the riches of mathematical logic, writing a book, selling her home, coming to understand Wittgenstein's *Philosophical Investigations*, planning her retirement, developing some new software, deciding whether to get married, arranging child care, courting her lover, editing an anthology, preparing for the bar exam, and raising her three children.

Consider the latter action: what about the physical movements that she lives through while going to night school, while at work during the day, while taking out the trash, while brushing her teeth with the bathroom door open so as to set an example, etc.? One can very reasonably include in or omit from Jasmine's action token many molar body movements (or neurophysiological events) associated with these actions, movements that bear no significant overlapping or whole-part relations to each other. Even if the questions regarding what action tokens typically get grounded in get settled—e.g., molar body movements, neurophysiological events, causal processes from the latter to the former, etc.—we still have *enormous* leeway in choosing the putative composition sets for this action token of her raising her three children. You might pine for a philosophical genius to come along and reveal the more or less determinate physical composition for the Jasmine action tokens. If so, I have a bridge to sell you, you foolish philosopher who should know better or is hopelessly naïve. So we get claim (9).

There is a way to object to claim (8), the one that says that if the Jasmine action tokens exist and are physically complicated things with a great many physical parts, then they have a *not wildly indeterminate* composition into tiny physical bits. You could argue that earthquakes, for instance, really exist and are composed of a great many molecular events and in a wildly indeterminate manner. We can no more find an even roughly determinate compositional base in terms of tiny physical events for earthquakes than we can for the Jasmine tokens. But surely earthquakes are physical entities that in some sense "boil down to" a great many physical entities. So claim (8) is false when generalized to other events; but then there is no reason for thinking it's true for the Jasmine action tokens. In sum:

- i. Earthquakes exist/happen.
- ii. Earthquakes "boil down to" a great many physical entities.
- iii. Earthquakes have wildly indeterminate physical compositions.

- iv. Hence, conditional C is false: if an event exists/happens and it boils down to a great many physical entities, then it does not have a wildly indeterminate physical composition.
- v. But if C is false, then (8) is false.
- vi. Thus, (8) is false.

I am skeptical that earthquakes are really so compositionally indeterminate; so even if they exist and are physically high-level (so (i) and (ii) are true), they do not falsify C (since (iii) is false). As one might guess, there are several kinds of earthquake; and the term 'earthquake' is polysemous. Once the term is clarified, I don't think any given "earthquake" has a wildly indeterminate physical makeup. For instance, in one of the simple cases, an earthquake is the *cause* of seismic waves above a certain arbitrary threshold (and hence can be caused by humans, such as in the case of fracking), and the cause—assuming there is just one token cause—will not be so compositionally indeterminate. And the seismic waves themselves (which some people use 'earthquake' for) are not so wildly indeterminate. I am not going to defend this response to the alleged counterexample, as my job is to merely motivate the puzzle. Thus, premise (iii) of earthquake objection to (8) is not clearly true and as a consequence it's not so clear that (8) is false. Hence, it's not so easy to respond to the paradox that way.

The earthquake example is useful in another way since it illustrates other ways one might respond to the paradox by rejecting at least one of (1)-(4).

There are three options for rejecting premise (i) of the earthquake objection to (8):

- Sentences like 'There were two earthquakes in Kansas in 2014' are false; earthquakes don't happen/exist; premise (i) is false.
- Sentences like 'There were two earthquakes in Kansas in 2014' are true but don't quantify over earthquakes (as the semantics is much more complicated than it appears); earthquakes don't happen/exist; premise (i) is false.
- Sentences like 'There were two earthquakes in Kansas in 2014' are true and do quantify over earthquakes, but quantification isn't always ontologically serious, so to speak, so earthquakes don't happen/exist; premise (i) is false.

If one goes with the first option, then one may well also reject claim (1), about ordinary action sentences being true. Most philosophers don't want to reject the truth of sentences that commonsensical. If one accepts the second option, then one will accept (1) and probably (2) but reject (3), thinking that the semantics of action sentences is considerably more complicated than what many philosophers have said over the years. If one endorses the third option, then one will reject (4), the thesis about the consequences of the connection between quantification and existence.

As I said earlier, I'm not defending any particular response to the set of nine claims. My thesis is that the set shows something philosophically interesting about *either* the logical forms of action sentences, the quantification-existence connection, *or* physical composition. Which option is the true one is more difficult to determine.