

The Individuation of Events

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When are events identical, when distinct? What criteria are there for deciding one way or the other in particular cases?

There is a familiar embarrassment in asking identity questions of this sort that comes out clearly if we rephrase the question slightly: when are two events identical? Or, when is one event identical with another? It seems only one answer is possible: no *two* events are identical, no event is ever identical with *another*. It is hopeless to try to improve matters by asking instead, when is an event identical with itself? For again, only one answer is possible: always.

The difficulty obviously has nothing special to do with events, it arises in relation to all identity questions. The only move I know for circumventing this conundrum is to substitute for questions about identities questions about sentences about identities. Then instead of asking when events are identical, we may ask when sentences of the form ' $a = b$ ' are true, where we suppose ' a ' and ' b ' supplanted by singular terms referring to events.

We have no sooner to restate our problem in this standard way, however, than to realize something scandalous about events. Events, even in the best philosophical circles, lead a double life. On the one hand, we talk confidently of sentences that 'describe' or 'refer to' events, and of cases where two sentences refer to the same event; we have grown used to speaking of actions (presumably a species of event) 'under a description'. We characterize causal laws as asserting that every event of one sort is followed by an event of another sort, and it is said that explanation in history and science is often of particular events, though perhaps only as those events are described in one way rather than another. But – and this is the other hand – when we turn to the sentences, formalized in standard ways or in our native dialect, that are so familiarly interpreted as describing or referring to events, or as making universal claims about events, we generally find nothing commonly counted as singular terms that could be taken to refer to events. We are told, for example, that on occasion 'He raised his arm' and 'He signalled' describe the same action; yet where are the singular terms in these sentences that could do the describing? 'Whenever a piece of metal is heated it expands' is normally taken as quantifying over physical objects and perhaps times; how could we analyse it so as to justify the claim that it literally speaks of events?

Quine has quipped: 'No entity without identity' in support of the Fregean thesis that we ought not to countenance entities unless we are prepared to make sense of sentences affirming and denying identity of such entities. But then more obvious still is the motto: 'No identity without an entity', and its linguistic counterpart: 'No statements of identity without singular terms'.

Our problem was to determine when sentences formed by flanking an identity sign with singular terms referring to events are true; at this point the problem seems to invite the response that there are no such sentences because there are no such singular terms. But of course this is too strong; there are singular terms that apparently name events: 'Sally's third birthday party', 'the eruption of Vesuvius in AD 1906', 'my eating breakfast this morning', 'the first performance of *Lulu* in Chicago'. Still, the existence of these singular terms is of uncertain relevance until we can firmly connect such singular terms with sentences like 'Vesuvius erupted in AD 1906' or 'I ate breakfast this morning', for most of our interest in identity sentences about events depends upon the assumption that the singular terms that appear in them refer to entities that are needed for the analysis of more ordinary sentences. If the only pressure for adopting an ontology of events comes from such phrases as 'Sally's third birthday party', we would probably do better to try and paraphrase these away in context than meddle with the logical form of sentences like 'Brutus killed Caesar' or 'Bread nourishes' so as to show singular terms referring to events or variables ranging over them.

Are there good reasons for taking events seriously as entities? There are indeed. First, it is hard to imagine a satisfactory theory of action if we cannot talk literally of the same action under different descriptions. Jones managed to apologize by saying 'I apologize'; but only because, under the circumstances, saying 'I apologize' was apologizing. Cedric intentionally burned the scrap of paper; this serves to excuse his burning a valuable document only because he did not know the scrap was the document and because his burning the scrap was (identical with) his burning the document. Explanation, as already hinted, also seems to call for events. Last week there was a catastrophe in the village. In the course of explaining why it happened, we need to redescribe it, perhaps as an avalanche. There are rough statistical laws about avalanches: avalanches tend to occur when a heavy snow falls after a period of melting and freezing, so that the new snow does not bind to the old. But we could go further in explaining this avalanche – why it came just when it did, why it covered the area it did, and so forth – if we described it in still a different and more precise vocabulary. And when we mention, in one way or another, the cause of the avalanche, we apparently claim that though we may not know such a description or such a law, there must be descriptions of cause and avalanche such that those descriptions instantiate a true causal law. All this talk of descriptions and redescriptions makes sense, it would seem, only on the assumption that there are *bona fide* entities to be described and redescribed. A further need for events springs from the fact that the most perspicuous forms of the identity theory of mind require that we identify mental events with certain physiological events; if such theories or their denials are intelligible, events must be individuals. And for such theories to

be interesting, there must be ways of telling when statements of event-identity are true.¹

The reasons just canvassed for accepting an explicit ontology of events rest upon the assumption that one or another currently accepted or debated philosophical position or doctrine is intelligible when taken at face value; so it remains possible to resist the conclusion by rejecting the relevant doctrines as unintelligible, or by attempting to reinterpret them without appeal to events. The prospects for successful resistance are, in my opinion, dim: I do not believe we can give a cogent account of action, of explanation, of causality, or of the relation between the mental and the physical, unless we accept events as individuals. Each of these claims needs detailed defence.²

There remains, however, a more direct consideration (of which the others are symptoms) in favour of an ontology of events, which is that without events it does not seem possible to give a natural and acceptable account of the logical form of certain sentences of the most common sorts; it does not seem possible, that is, to show how the meanings of such sentences depend upon their composition. The situation may be sketched as follows. It is clear that the sentence 'Sebastian strolled through the streets of Bologna at 2 a.m.' entails 'Sebastian strolled through the streets of Bologna', and does so by virtue of its logical form. This requires, it would seem, that the patent syntactical fact that the entailed sentence is contained in the entailing sentence be reflected in the logical form we assign to each sentence. Yet the usual way of formalizing these sentences does not show any such feature: it directs us to consider the first sentence as containing an irreducibly three-place predicate ' x strolled through y at t ' while the second contains the unrelated predicate ' x strolled through y '. It is sometimes proposed that we can mend matters by treating 'Sebastian strolled through the streets of Bologna' as elliptical for 'There exists a time t such that Sebastian strolled through the streets of Bologna at t '. This suggestion contains the seed of a general solution, however, only if we can form a clear idea of how many places predicates of action or change involve. But it is unlikely that we can do this since there appear to be ways of adding indefinitely to the number of places that would be required. Consider, for example, 'The shark devoured Danny by chewing up his left foot, then his left ankle, then his left knee, then . . .', or, 'The fall of the first domino caused the fall of the last by causing the fall of the second, which caused the fall of the third, which caused. . .'.³

Ingenuity may conceive more than one way of coping with these and associated puzzles, but it is impressive how well everything comes out if we accept the obvious idea that there are things like falls, devourings and strolls for sentences such as these to be about. In short, I propose to legitimize our intuition that events are true particulars by recognizing explicit reference to them, or quantification over them, in much of our ordinary talk. Take as an example, 'Sebastian strolled': this may be construed along lines suggested by 'Sebastian took a stroll'. 'There is an x such that x is a stroll and Sebastian took x ' is more ornate than necessary, since there is nothing an agent can do with a stroll except take it; thus we may capture all there is with 'There is an x such that Sebastian strolled x '.

In this way we provide each verb of action or change with an event-place; we may say of such verbs that they take an *event-object*. Adverbial modification is thus seen to be logically on a par with adjectival modification: what adverbial clauses modify is not verbs, but the events that certain verbs introduce. 'Sebastian strolled through the streets of Bologna at 2 a.m.' then has this form: 'There is an event x such that Sebastian strolled x , x took place in the streets of Bologna, and x was going on at 2 a.m.' Clearly, the entailments that worried us before go through directly on this analysis.

We recognize that there is no singular term referring to a mosquito in 'There is a mosquito in here' when we realize that the truth of this sentence is not impugned if there are two mosquitos in the room. It would not be appropriate if, noticing that there are two mosquitos in the room, I were to ask the person who says, 'There is a mosquito in the room', 'Which one are you referring to?' On the present analysis, ordinary sentences about events, like 'Doris capsized the canoe yesterday', are related to particular events in just the same way that 'There is a mosquito in here' is related to particular mosquitos. It is no less true that Doris capsized the canoe yesterday if she capsized it a dozen times than if she capsized it once; nor, if she capsized it a dozen times, does it make sense to ask, 'Which time are you referring to?' as if this were needed to *clarify* 'Doris capsized the canoe yesterday'. We learned some time ago, and it is a very important lesson, that phrases like 'a mosquito' are not singular terms, and hence do not refer as names or descriptions do. The temptation to treat a sentence like 'Doris capsized the canoe yesterday' as if it contained a singular term referring to an action comes from other sources, but we should be equally steadfast in resisting it.

Some actions are difficult or unusual to perform more than once in a short or specified time, and this may provide a specious reason in some cases for holding that action sentences refer to unique actions. Thus with 'Jones got married last Saturday', 'Doris wrote a cheque at noon', 'Mary kissed an admirer at the stroke of midnight'. It is merely illegal to get married twice on the same day, merely unusual to write cheques simultaneously, and merely good fortune to get to kiss two admirers at once. Similarly, if I say, 'There is an elephant in the bathtub', you are no doubt justified in supposing that one elephant at most is in the bathtub, but you are confused if you think my sentence contains a singular term that refers to a particular elephant if any. A special case arises when we characterize actions in ways that logically entail that at most one action so characterized exists: perhaps you can break a certain piece of news to a particular audience only once; a man can assassinate his enemy only once; a woman can lose her virtue only once. 'Brutus killed Caesar' is then arguably equivalent to 'Brutus killed Caesar exactly once' which is arguably equivalent (by way of Russell's theory of descriptions) to 'The killing of Caesar by Brutus occurred'. This last certainly does contain a description, in the technical sense, of an action, and so we could say that 'Brutus killed Caesar' refers to or describes the killing of Caesar by Brutus in that it is logically equivalent to a sentence that overtly refers to or describes the killing of Caesar by Brutus. By parity of reasoning we should, of course, maintain that 'There exists a prime between 20 and 28' refers to the number 23. There is a good reason against

taking this line, however, which is that on this view someone could be uniquely referring without knowing he was using words that imputed singularity.

Confusion over the relation between ordinary sentences about actions, and particular actions, has led some philosophers to suppose or to suggest that these sentences are about *generic* actions, or *kinds* of actions. Von Wright, for example, says that 'Brutus killed Caesar' is about a particular action, while 'Brutus kissed Caesar' is about a generic action.⁴ It is true that we can paraphrase 'Brutus killed Caesar' as 'There is at least one event belonging to the genus, a kissing of Caesar by Brutus'; but we can equally well paraphrase 'Brutus killed Caesar' as 'There is at least one event belonging to the genus, a killing of Caesar by Brutus'. In neither case does the sentence refer to a generic action. Analogous remarks apply to the idea that 'Lying is wrong' is about a kind of action. 'Lying is wrong' may be rendered, 'For all x if x is a lie then x is wrong' or even, 'The class of lies is included in the class of wrong actions', but neither of these says that a kind of action is wrong, but rather that each action of a kind is wrong.

Failure to find an ordinary singular term referring to an event in a sentence like 'Caesar died' is properly explained by the fact that such sentences are existential and general with respect to events: we do not find a singular term referring to an event because there is none. But many philosophers, not doubting that 'Caesar died' refers to or describes an event, have confusedly concluded that the sentence *as a whole* refers to (or perhaps 'corresponds to') an event. As long ago as 1927, Frank Ramsey pointed out this error, and how to correct it; he described it as the error of conflating facts (which in his view are what sentences or propositions correspond to) and events.⁵ And certainly there are difficulties, of a kind more general than we have indicated, with the idea that whole sentences refer to events. For suppose we agree, as I think we must, that the death of Scott is the same event as the death of the author of *Waverley*: then if sentences refer to events, the sentence 'Scott died' must refer to the same event as 'The author of *Waverley* died'. If we allow that substitution of singular terms in this way does not change the event referred to, then a short and persuasive argument will lead to the conclusion that all true sentences refer to the same event. And presumably only true sentences refer to an event; the conclusion may therefore be put: there is exactly one event. Since the argument is essentially the argument used by Frege to show that all sentences alike in truth-value must name the same thing, I spare you the details.⁶

The mistaken view that a sentence like 'Doris capsized the canoe yesterday' refers to a particular event, whether or not tied to the idea that it is the sentence as a whole that does the referring, is pretty sure to obliterate the difference between 'Doris capsized the canoe yesterday' and 'Doris's capsizing of the canoe occurred yesterday'. Yet without this distinction firm in our minds I do not believe we can make good sense of questions about the individuation of events and actions, for while the second sentence does indeed contain a singular description (the sentence as a whole meaning 'There is an event identical with the capsizing of the canoe yesterday by Doris'), the first sentence merely asserts the existence of at least one capsizing. If we are not alert to the difference, we are apt to ask wrongheaded

questions like: if Jones apologized by saying 'I apologize', do 'Jones apologized' and 'Jones said "I apologize"' describe the same action? The right response is, I have urged, that neither sentence describes an action. We may then add, if we please, that at least one, or perhaps exactly one, action accounts for the truth of both sentences; but both sentences could be true although no apology by Jones was made by his saying, 'I apologize'.⁷

To see how not appreciating the generality in 'Jones apologized' can lead to mistakes about the individuation of events, consider a suggestion of Kim's.⁸ Kim assumes that sentences such as 'Brutus killed Caesar' and 'Brutus stabbed Caesar' refer to events, and he asks under what conditions two such sentences describe or refer to the same event. He proposes the following criterion: two sentences are about the same event if they assert truly of the same particulars (i.e. substances) that the same properties (or relations) hold of them. Kim has a rather complicated doctrine of property identity, but it need not delay us since the point to be made depends only on a simple principle to which Kim agrees: properties differ if their extensions do. The effect is to substitute for what I think of as particular, dated events classes of such, and thus to make identities harder to come by. Where I would say the same event may make 'Jones apologized' and 'Jones said "I apologize"' true, Kim is committed to holding that these sentences describe different events. Nor can Kim allow that a stabbing is ever a killing, or the signing of a cheque the paying of a bill. He must also hold that if psychological predicates have no coextensive physical predicates, then no psychological event is identical with a physical event.

Kim recognizes these consequences of his criterion, and accepts them; but for reasons I find weak. He writes:

Brutus' killing Caesar and Brutus' stabbing Caesar turn out, on the proposed criterion of event identity, to be different events, and similarly, 'Brutus killed Caesar' and 'Brutus stabbed Caesar' describe different events. Notice, however, that it is not at all absurd to say that Brutus' killing Caesar is *not the same as* Brutus' stabbing Caesar. Further, to explain Brutus' killing Caesar (why Brutus killed Caesar) is not the same as to explain Brutus' stabbing Caesar (why Brutus stabbed Caesar)...⁹

Certainly Brutus had different reasons for stabbing Caesar than for killing him; we may suppose he went through a little piece of practical reasoning the upshot of which was that stabbing Caesar was a good way to do him in. But this reasoning was futile if, having stabbed Caesar, Brutus has a different action yet to perform (killing him). And explanation, like giving reasons, is geared to sentences or propositions rather than directly to what sentences are about: thus an explanation of why Scott died is not necessarily an explanation of why the author of *Waverley* died. Yet not even Kim wants to say the death of Scott is a different event from the death of the author of *Waverley*. I turn last to Kim's remark that it is not absurd to say that Brutus's killing Caesar is not the same as Brutus's stabbing Caesar. The plausibility in this is due, I think, to the undisputed fact that not all stabbings are killings. We are inclined to say: *this* stabbing might not

have resulted in a death, so how can it be identical with the killing? Of course the death is not identical with the stabbing; it occurred later. But neither this nor the fact that some stabbings are not killings shows that this particular stabbing was not a killing. Brutus's stabbing of Caesar did result in Caesar's death; so it was in fact, though of course not necessarily, identical with Brutus's killing of Caesar.

Discussions of explanation may also suffer from confusion about how sentences are related to events. It is sometimes said, for example, that when we explain the occurrence of an event, we can do so only under one or another of its sentential descriptions. In so far as this remark reminds us of the essential intensity of explanation, it is unexceptionable. But a mistake may lurk. If what we are to explain is why an avalanche fell on the village last week, we need to show that conditions were present adequate to produce *an* avalanche. It would be confused to say we have explained only an aspect of 'the real avalanche' if the reason for saying this lies in the fact that what was to be explained was itself general (for the explanandum contained no mention of a particular avalanche). We might instead have asked for an explanation of why *the* avalanche fell on the village last week. This is, of course, a harder task, for we are now asking not only why there was at least one avalanche, but also why there was not more than one. In a perfectly good sense the second explanation can be said to explain a particular event; the first cannot.

An associated point may be made about causal relations. Suppose it claimed that the lighting of this match was caused by the striking of the match. The inevitable comment (since the time of Mill anyway) is that the striking may have been *part* of the cause, but it was hardly sufficient for the lighting since it was also necessary for the match to be dry, that there be enough oxygen, etc. This comment is, in my opinion, confused. For since this match was dry, and was struck in enough oxygen, etc., the striking of this match was identical with the striking of a dry match in enough oxygen. How can one and the same event both be, and not be, sufficient for the lighting? In fact, it is not *events* that are necessary or sufficient as causes, but events as *described* in one way or another. It is true that we cannot infer, from the fact that the match was struck, and plausible causal laws, that the match lit; we can do better if we start with the fact that a dry match was struck in enough oxygen. It does not follow that more than the striking of this match was required to cause it to light.

Now that we have a clearer idea what it is like to have singular terms, say '*a*' and '*b*', that refer to events we may return to our original question when a sentence of the form '*a = b*' is true. Of course we cannot expect a general method for *telling* when such sentences are true. For suppose ' $(\iota x)(Fx)$ ' describes some event. Letting '*S*' abbreviate any sentence,

$$(\iota x)(Fx) = (\iota x)(Fx \ \& \ S)$$

is true just in case '*S*' is true. Since '*S*' is an arbitrary sentence, a general method for telling when identity sentences were true would have to include a method for

telling when any sentence was true. What we want, rather, is a statement of necessary and sufficient conditions for identity of events, a satisfactory filling for the blank in:

If x and y are events, then $x = y$ if and only if—.

Samples of answers (true or false) for other sorts of entities are classes are identical if and only if they have exactly the same members; times are identical if and only if they are overlapped by exactly the same events; places are identical if and only if they are overlapped by exactly the same objects; material objects are identical if and only if they occupy exactly the same places at the same times. Can we do as well as this for events? Here follows a series of remarks that culminate in what I hope is a satisfactory positive answer.

(1) Many events are changes in a substance. If an event a is a change in some substance, then $a = b$ only if b is also a change in the same substance. Indeed, if $a = b$, every substance in which a is a change is identical with a substance in which b is a change. To touch on such necessary conditions of event-identity is to do little more than reflect on what follows if events really do exist; but that is to the present point. And of course we will not alter the event, if any, to which a description refers if in that description we substitute for the name or description of a substance another name or description of the same substance: witness the fact that the death of Scott is identical with the death of the author of *Waverley*. This is an example of a sufficient condition of identity.

We very often describe and identify events in terms of the objects to which they are in one way or another related. But it would be a mistake to suppose that, even for events that are naturally described as changes in an object, we *must* describe them (i.e. produce unique descriptions of them) by referring to the object. For in fact any predicate of any event may provide a unique description: if an event a is F , a may turn out also to be the only event that is F , in which case 'the event that is F ' uniquely refers to a . One important way to identify events without explicit reference to a substance is by demonstrative reference: 'that shriek', 'that dripping sound', 'the next sonic boom'.

These last points are well made by Strawson.¹⁰ Strawson also remarks that the possibilities for identifying events without reference to objects are limited, because, as he puts it, events do not provide 'a single, comprehensive and continuously usable framework' of reference of the kind provided by physical objects.¹¹ This claim is made by Strawson in support of a grander thesis, that events are conceptually dependent on objects. According to Strawson we could not have the idea of a birth or a death or a blow without the idea of an animal that is born or dies, or of an agent who strikes the blow.

I do not doubt that Strawson is right in this: most events are understood as changes in a more or less permanent object or substance. It even seems likely to me that the concept of an event depends in every case on the idea of a change in a substance, despite the fact that for some events it is not easy to say what substance it is that undergoes the change.

What does seem doubtful to me is Strawson's contention that while there is a conceptual dependence of the category of events on the category of objects, there is not a symmetrical dependence of the category of objects on the category of events. His principal argument may, I think, be not unfairly stated as follows: in a sentence like 'There is an event that is the birth of this animal' we refer to, or quantify over, events and objects alike. But we can, if we please, express exactly the same idea by saying, 'This animal was born' and here there is no reference to, or quantification over, events. We cannot in the same way eliminate the reference to the object.¹² This is supposed to show that objects are more fundamental than events.

A closely related argument of Strawson's is this: the sentence 'The blow which blinded John was struck by Peter' presupposes, for its truth, that John exists, that Peter exists, and that there is a striking of John by Peter. But the last presupposition may also be expressed simply by saying that Peter struck John, which does not treat the blow as an entity on a par with Peter and John. Strawson again concludes that events are dispensable in a sense in which objects are not.¹³ It is hard to see how the evidence supports the conclusion.

If 'Peter struck John' and 'There was a striking of John by Peter' express the same presupposition, how can they require different ontologies? If 'This animal was born' and 'There is an event that is the birth of this animal' are genuine paraphrases one of the other, how can one of them be about a birth and the other not? The argument proves either too much or too little. If every context that seems to refer to, or to presuppose, events may be systematically rephrased so as not to refer to events, then this shows we do not need an ontology of events at all. On the other hand if some categories of sentence resist transformation into an eventless idiom, then the fact that we can apparently banish events from other areas cannot suffice to relegate events to a secondary status; indeed it does not even serve to show that the sentences we know how to parse in superficially event-free terms are not about events. It was in fact in just this vein that I have been urging that we cannot give acceptable analyses of 'This animal was born' and 'Peter struck John' without supposing that there are such things as births and blows. In Strawson's view, if I understand him, 'The blow which blinded John was struck by Peter' entails 'Peter struck John'. But a theory about what these sentences mean that justifies the entailment must, or so I have argued, acknowledge an ontology of events. Thus if my interpretation of the evidence is correct, there is no reason to assign second rank to events; while if, contrary to what I have maintained, total reducibility is possible, then again events do not take a back seat, for there are no events.

In my view, a sentence like 'John struck the blow' is about two particulars, John and the blow. The distinction between singular terms and predicates is not abolished: rather, striking is predicated alike of John and of the blow. This symmetry in the treatment of substances and their changes reflects, I think, an underlying symmetry of conceptual dependence. Substances owe their special importance in the enterprise of identification to the fact that they survive through time. But the idea of survival is inseparable from the idea of surviving certain sorts of change – of position, size, shape, colour and so forth. As we might expect, events often play an essential role in identifying a substance. Thus if we track

down the author of *Waverley* or the father of Annette, it is by identifying an event, of writing, or of fathering. Neither the category of substance nor the category of change is conceivable apart from the other.¹⁴

(2) Should we say that events are identical only if they are in the same place? Of course if events have a location, same events have same locations; but here is a puzzle that may seem to cast a doubt on the project of assigning a clear location to events. Perhaps those events are easiest to locate that are obviously changes in some substance: we locate the event by locating the substance. But if one substance is part of another, a change in the first is a change in the second. Every substance is a part of the universe: hence every change is a change in the universe. It seems to follow that all simultaneous events have the same location. The error lies in the assumption that if an event is a change in a substance, the location of the event is the entire space occupied by the substance. Rather, the location of the event at a moment is the location of the smallest part of the substance a change in which is identical with the event.

Does it make sense to assign a location to a mental event such as remembering that one has left a zipper open, deciding to schuss the headwall, or solving an equation? I think we do assign a location to such an event when we identify the person who remembered, decided or solved: the event took place where the person was. Questions about the location of mental events are generally otiose because in identifying the event we have usually identified the person in whom the event was a change, so no interesting question about the location of the event remains that is not answered by knowing where the person was when the event occurred. When we do not know who the relevant person is, queries about the location of mental events are perfectly in order: 'Where was the infinitesimal calculus invented?'

Mental events (by which I mean events described in the mental vocabulary, whatever exactly that may be) are like many other sorts of events, and like material objects, in that we give their locations with no more accuracy than easy individuation (within the relevant vocabulary) demands. Aside from a few dubious cases, like pains, itches, pricks and twitches, we have no reason to locate mental events more precisely than by identifying a person, for more than this would normally be irrelevant to individuation. Similarly, we uniquely identify a mountain by giving the latitude and longitude of its highest summit, and in one good sense this gives the location of the mountain. But a mountain is a material object, and so occupies more than a point; nevertheless convention decrees no formula for defining its boundaries.

An explosion is an event to which we find no difficulty in assigning a location, although again we may be baffled by a request to describe the total area. The following quotation from an article on locating earthquakes and underground explosions illustrates how smoothly we operate with the concept of the place of an event:

Information on the accuracy with which a seismic event can be located is not as complete as could be wished. . . . If data from stations distant from the event are used, it seems realistic to estimate that the site can be located within a circular area whose

radius is about eight kilometers. Stations that are 500–2,000 kilometers from the event may give much larger errors. . . .¹⁵

(3) No principle for the individuation of events is clearer or more certain than this, that if events are identical, they consume identical stretches of time. Yet even this principle seems to lead to a paradox.

Suppose I pour poison in the water tank of a spaceship while it stands on earth. My purpose is to kill the space traveller, and I succeed: when he reaches Mars he takes a drink and dies. Two events are easy to distinguish: my pouring of the poison, and the death of the traveller. One precedes the other, and causes it. But where does the event of my killing the traveller come in? The most usual answer is that my killing the traveller is identical with my pouring the poison. In that case, the killing is over when the pouring is. We are driven to the conclusion that I have killed the traveller long before he dies.

The conclusion to which we are driven is, I think, true, so coping with the paradox should take the form of reconciling us to the conclusion. First, we should observe that we may easily know that an event is a pouring of poison without knowing it is a killing, just as we may know that an event is the death of Scott without knowing it is the death of the author of *Waverley*. To describe an event as a killing is to describe it as an event (here an action) that caused a death, and we are not apt to describe an action as one that caused a death until the death occurs; yet it may be such an action before the death occurs. (And as it becomes more certain that a death will result from an action, we feel less paradox in saying, 'You have killed him'.)¹⁶

Directness of causal connection may also play a role. To describe the pouring as a killing is to describe it as the causing of a death; such a description loses cogency as the causal relation is attenuated. In general, the longer it takes for the effect to be registered, the more room there is for a slip, which is another way of saying, the less justification there is for calling the action alone the cause.

Finally, there may be a tendency to confuse events described (partly or wholly) in terms of terminal states and events described (partly or wholly) in terms of what they cause. Examples of the first sort are 'the rolling of the stone to the bottom of the hill' (which is not over until the stone is at the bottom of the hill) or 'his painting the barn red' (not over until he has finished painting the barn red); examples of the second sort are 'the destruction of the crops by the flood' (over when the flood is, which may be finished before the crops are) and 'Jones' inviting Smith to the party' (which Jones does only if Smith gets invited, but has finished doing when he drops the card in the mail).¹⁷

It is a matter of the first importance that we may, and often do, describe actions and events in terms of their causal relations – their causes, their effects or both. My poisoning of the victim must be an action that results in the victim being poisoned; my killing of the victim must be an action that results in the death of the victim; my murdering of the victim must be an action that results in the death of the victim and also an action that was caused, in part, by my desire for the victim's death. If I see that the cat is on the mat, my seeing must be caused, in part, by the

cat's being on the mat. If I contract Favism, I must contract haemolytic anaemia as a consequence of eating, or otherwise coming in contact with, the Fava bean. And so forth. This tendency to identify events in terms of their causal relations has deep roots, as I shall suggest in a moment. But it should not lead to a serious difficulty about the dates of events.

(4) Do place and time together uniquely determine an event; that is, is it sufficient as well as necessary, if events are to be identical, that they occupy exactly the same time and the same place? This proposal was made (somewhat tentatively) by John Lemmon;¹⁸ of course the same proposal has often been made for physical objects. I am uncertain both in the case of substances and in the case of events whether or not sameness of time and place is enough to ensure identity. Doubt comes easily in the case of events, for it seems natural to say that two different changes can come over the whole of a substance at the same time. For example, if a metal ball becomes warmer during a certain minute, and during the same minute rotates through 35 degrees, must we say these are the same event? It would seem not; but there may be arguments the other way. Thus in the present instance it might be maintained that the warming of the ball during *m* is identical with the sum of the motions of the particles that constitute the ball during *m*; and so is the rotation. In the case of material objects it is perhaps possible to imagine two objects that in fact occupy just the same places at all times but are different because, though never separated, they are separable.

(5) We have not yet found a clearly acceptable criterion for the identity of events. Does one exist? I believe it does, and it is this: events are identical if and only if they have exactly the same causes and effects. Events have a unique position in the framework of causal relations between events in somewhat the way objects have a unique position in the spatial framework of objects. This criterion may seem to have an air of circularity about it, but if there is circularity it certainly is not formal. For the criterion is simply this: where *x* and *y* are events,

$$(x = y \text{ if and only if } ((z)(z \text{ caused } x \longleftrightarrow z \text{ caused } y) \text{ and } (z)(x \text{ caused } z \longleftrightarrow y \text{ caused } z)))$$

No identities appear on the right of the biconditional.

If this proposal is correct, then it is easy to appreciate why we so often identify or describe events in terms of their causes and effects. Not only are these the features that often interest us about events, but they are features guaranteed to individuate them in the sense not only of telling them apart but also of telling them together. It is one thing for a criterion to be correct, another for it to be useful. But there are certainly important classes of cases at least where the causal criterion appears to be the best we have. If we claim, for example, that someone's having a pain on a specific occasion is identical with a certain complex physiological event, the best evidence for the identity is apt to be whatever evidence we have that the pain had the same causes and the same effects as the physiological change. Sameness of cause and effect seems, in cases like this one, a far more useful criterion than sameness of place and time.¹⁹

Perhaps sameness of causal relations is the only condition always sufficient to establish sameness of events (sameness of location in space and time may be another). But this should not be taken to mean that the only way of establishing, or supporting, a claim that two events are identical is by giving causal evidence. On the contrary, logic alone, or logic plus physics, or almost anything else, may help do the job, depending on the descriptions provided. What I do want to propose is that the causal nexus provides for events a 'comprehensive and continuously usable framework' for the identification and description of events analogous in many ways to the space-time coordinate system for material objects.

This paper may be viewed as an indirect defence of events as constituting a fundamental ontological category. A defence, because unless we can make sense of assertions and denials of identity we cannot claim to have made sense of the idea that events are particulars. Indirect, because it might be possible to make such needed sense, and to provide clear criteria for identity, and yet to have made no case at all for the need to posit events as an independent category. In other places I have tried to make good on the question of need; here I have not much more than summarized the arguments. But I have found that even those who are impressed with the arguments often have a residual doubt that centres on the apparent intractability of the question when events are identical.

I have tried to banish this doubt as far as I could. The results are not, it must be allowed, overwhelming. But how much should one expect? Can we do any better when it comes to giving criteria for individuating material objects? It should be noticed that the subject has been the individuation of events quite generally, not kinds of events. The analogous problem for material objects would be to ask for conditions of identity of equal generality. At this level, there is individuation without counting. We cannot answer the question, 'How many events occurred (since midnight, between Easter and Christmas)?' but neither can we answer the question, 'How many material objects are there (in the world, in this room)?' We do equally badly on counting classes, points and intervals of time. Nor are there very good *formulas* for individuating in some of these cases, though we make good enough sense of assertions and denials of identity.

Individuation at its best requires sorts or kinds that give a principle for counting. But here again, events come out well enough: rings of the bell, major wars, eclipses of the moon and performances of *Lulu* can be counted as easily as pencils, pots and people. Problems can arise in either domain. The conclusion to be drawn, I think, is that the individuation of events poses no problems worse in principle than the problems posed by individuation of material objects; and there is as good reason to believe events exist.

Notes

- 1 This point is well stated by Jaegwon Kim, 'On the Psycho-Physical Identity Theory'.
- 2 See 'Actions, Reasons, and Causes' in *Essays on Actions and Events*, 3-19; 'The Logical Form of Action Sentences' in *Essays on Actions and Events*, 105-22; 'Causal Relations' in

- Essays on Actions and Events*, 149–62; 'Mental Events' in *Essays on Actions and Events*, 207–25.
- 3 The difficulty discussed here is raised by Anthony Kenny in *Action, Emotion and Will*, ch. VII. In 'The Logical Form of Action Sentences' (in *Essays on Actions and Events*, 105–22) I devote more space to these matters and to the solution about to be outlined.
 - 4 Georg Henrik von Wright, *Norm and Action*, p. 23.
 - 5 'Facts and Propositions', pp. 140, 141. Also see the reply to Martin in 'The Logical Form of Action Sentences', in *Essays on Actions and Events*.
 - 6 See 'The Logical Form of Action Sentences' in *Essays on Actions and Events*, 105–22; 'Causal Relations' in *Essays on Actions and Events* 149–62.
 - 7 F. I. Dretske in 'Can Events Move?' correctly says that sentences do not refer to or describe events, and proposes that the expressions that do refer to events are the ones that can properly fill the blank in 'When did ——— occur (happen, take place)?' This criterion includes (as it should) such phrases as 'the immersion of the paper' and 'the death of Socrates' but also includes (as it should not) 'a discoloration of the fluid'.
 - 8 In 'On the Psycho-Physical Identity Theory'. Essentially the same suggestion is made by Richard Martin in 'On Events and Event-Descriptions'.
 - 9 *Op. cit.*, 232 (footnote).
 - 10 *Individuals*, pp. 46 ff. I am not sure, however, that Strawson distinguishes clearly among: pointing out an entity to someone; producing a unique description of an entity; producing a description guaranteed to be unique.
 - 11 *Ibid.*, p. 53.
 - 12 *Ibid.*, pp. 51 ff.
 - 13 *Ibid.*, p. 200.
 - 14 The same conclusion is reached by J. Moravcsik, 'Strawson and Ontological Priority'.
 - 15 E. C. Bullard, 'The Detection of Underground Explosions', p. 24.
 - 16 Harry Levin, *The Question of Hamlet*, p. 35, says in effect that the poisoned Hamlet, in killing the King, avenges, among other murders, his own. This he could not do if he had not already been murdered.
 - 17 I discuss this issue at greater length in 'Agency' in *Essays on Actions and Events*, 43–61.
 - 18 E. J. Lemmon, 'Comments on D. Davidson's "The Logical Form of Action Sentences"'. Lemmon goes further, suggesting that 'we may invoke a version of the identity of indiscernables and identify events with *space-time zones*'. But even if there can be only one event that fully occupies a space-time zone, it would be wrong to say a space-time zone is a change or a cause (unless we want to alter the language).
 - 19 Thomas Nagel suggests the same criterion of the identity of events in 'Physicalism', p. 346.

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