DONALD DAVIDSON ON THE LOGICAL FORM OF ACTION SENTENCES

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Sentences like "Vasco da Gama discovered the north pole", "Aristotle married Jocasta", or "I am telling falsities", are what we may call action sentences. What is the logical form of such sentences? My purpose here is a minimal one: to present the proposal on this issue that Donald Davidson has put forward three decades ago.

I don't have the time to say much about the larger project of which this particular proposal is a small part. I will say only that a basic presupposition of the enterprise is that which identifies knowing the meaning of a sentence with knowing its truth--conditions. And that the present task of uncovering the logical form of a certain class of sentences is seen as requiring that one elucidates the logical or grammatical roles of its components (words or expressions) in such a way that shows us how the meaning of the whole depends upon its structure.

Let me begin with two simple sentences:

(1) John kicked Bernard
(2) Mary gave the pencil to Beatrice.

Our first intuition readily prompts us to say that the elements in sentence (1) are the two proper names "John" and "Bernard", and the binary relational predicate "... kicked ...". Similarly, in sentence (2), we discern as elements "Mary", "Beatrice", "the pencil", and the three-place predicate "... gave ... to ...". So, our first formalization would be:

(1*) K (a, b) where "a" is "John", "b" is "Bernard", and "K" is "... kicked ..."; and
(2*) G (a, b, c) where "a" is "Mary", "b" is "the pencil", "c" is "Beatrice", and "G" is "... gave ... to ...".

For competent speakers of English, sentence (1) entails both:

(1a) John kicked someone, and
(1b) Someone kicked someone;

and sentence (2) entails both:

(2a) Mary gave something to Beatrice, and
(2b) Someone gave the pencil to Beatrice.

It can be thought as a virtue of our first formalization, of (1) and (2) by (1*) and (2*), that it provides a justification for this entailment relations. In fact, by very well known rules of first-order logic, from (1*) we can infer both:

(1a*) ($\exists x$) K (a, x) (which can be read "There is an x such that a kicked x", and be considered as revealing the logical form of (1a)), and

(1b*) $(\exists x)\ (\exists y)\ K\ (x, y)$ (which can be read "There is an x and there is an y such that x kicked y", and be considered as revealing the logical form of (1b));

and, from (2*) we can infer both:

(2a*) $(\exists x)\ G\ (a, x, c)$ ("There is an x such that a gave x to c", revealing the logical form of (2a)), and

(2b*) $(\exists x)\ G\ (x, b, c)$ ("There is an x such that x gave b to c", revealing the logical form of (2b).

I hope that it will be obvious how crucial it is, for those who hold that knowing the meaning of a sentence *is* knowing its truth-conditions, that the account we give of the logical form of a class of sentences be consistent with the entailment relations between such sentences.

In this respect, so far all went well. However there are dificulties waiting our first formalization. Consider sentence

(3) Mary gave the pencil to Beatrice in the classroom.

By a similar analysis, we would formalize (3) as:

(3*) $H\ (a, b, c, d)$ where "a" is "Mary", "b" is "the pencil", "c" is "Beatrice", "d" is "the classroom", and "H" is the four-place predicate "... gave ... to ... in ...".

The trouble arises when we acknowledge the fact that (3) entails (2), but (3*) does not likewise entail (2*), for the predicate "H", being four-place, is utterly different from the three--place predicate "G". When we compare (3) with (2), we discern the common element "gave" as being highly relevant for

the meaning relations between the two sentences. But between (2*) and (3*) there is no such common element.

As a first attempt to solve this problem, we might consider sentence (2) as eliptical for:

(2c) Mary gave the pencil to Beatrice in some place [or: somewhere]

This would restore the desired entailment relations, for the logical form of the sentence would be rather:

(2c*) $(\exists x)\, H\,(a, b, c, x)$

which follows logically from (3*).

The reason why this is not a satisfactory solution emerges when we see that, to (3), we can add "yesterday, by gently putting it on her table and without making any noise". For each of these additions we would need to say that there was a standby position in the predicate that was somehow hidden. But then we would need to be in possession of a method to determine, for each arbitrary verb of action, how many standby positions does it have. And presumably there is no such method, for it seems to be no definite limit to the positions that we can add on each occasion.

An alternative way of solving the problem would be to posit special axioms that would authorize the inferences like that of (2*) from (3*). In this particular case, the necessary axiom would be:

$(\forall w)\,(\forall x)\,(\forall y)\,(\forall z)\,[H\,(w, x, y, z) \rightarrow G\,(w, x, y)]$ which can be read "For every w, every x, every y and every z, if w gave x to y in z, then w gave x to y".

But by the same reason that precludes our having a method for computing the number of standby positions of each verb of action, in this case it is quite clear that we would need an infinite number of such special axioms. And this violates one of the most basic requirements that a compositional account of meaning must meet.

In the kind of formalization that we have so far been engaging in, actions are essentially represented by predicates which are satisfied by sequences of objects such as persons, pencils, classroms, etc. But in such a representation it doesn't seem easy (or perhaps even possible) to account for the very frequent fact that two sentences "describe", or are made true by, the same action.

Here is an example. Peter flips the switch, turns on the light, and illuminates the room. Unknowingly he also alerts a prowler to the fact the he is at home. How many actions does he perform? Following Elizabeth Anscombe, Davidson has given us strong reasons to say that we have here only one action, of which four different descriptions are given. Presumably, Peter's action is intentional under the first three descriptions, but not under the fourth.

This fact, that an action is intentional under some descriptions but not under some others, is of great importance when we want to assign responsibility. Oedipus intentionally married Jocasta, but he didn't marry his own mother intentionally, because he didn't know that Jocasta was his mother. He has an excuse for his having commited incest and the logic of this excuse seems to be the following: he is accused of having done *a*, which is reprochable; he admits he did *b*, which is admissible or even praisable; and he can claim that he didn't know that $a = b$.

All this talk of different descriptions of the same action strongly suggests that actions should be viewed as particular

entities which can be represented by singular terms or variables and variously described by very different predicates. (For if, alternatively, actions are represented by predicates, it is not so easy to distinguish between the action and its descriptions.)

But, as our examples have already shown, we not only give, in different sentences, different descriptions of the same action; we can also, in the same sentence, give multiple descriptions of the same action. This is what happens when I say "Oedipus married Jocasta, in Thebes, with great joy, in the palace, in the presence of her children". Intuitively at least, it seems that we have here a first description which somehow introduces the action – "Oedipus married Jocasta" –, which is then further characterized in many other ways. Something similar happens when I say "Murali bought a car, which is red, has airbag, four-wheel drive, and is equipped with air conditioning". Only that here it is not Murali's action of buying a car, but rather the car itself which was bought by Murali that is caracterized in a number of ways. We surely approach the logical form of this last sentence when we rephrase it as "There is a car such that Murali bought it, and it is red, and it has airbag, and it has four-wheel drive, etc." Here the iterated pronoun "it" works like a bound variable, tracing the reference back to the same object as often as desired. Can we do the same with the former Oedipus-sentence, and with action sentences generally? This brings us to the core of Davidson's proposal.

The basic idea in this proposal is to treat action predicates as having an extra position that they seem not to have. This hidden position is the event-position, that is to say, it is a position to be filled with a singular term or a variable that refers to the event that is the action. As it is obvious, this view implies that actions are events, and that there are such particular entities

as events, or that *events* constitute a basic ontological category, on a pair with *material objects*.

On this view, the logical form of sentence (1) would be, not (1*), but rather:

(1**) $(\exists e)\ K\ (a, b, e)$ which can be read "There is an event e such that e is a kicking of b by a", where "a" is "John" and "b" is "Bernard".

One advantage that is to be expected from this formalization is that it will justify (by logic alone) the inferences that we saw were problematic to the one we started with. As you remember, the trouble arose with the entailment of sentence (2) ("Mary gave the pencil to Beatrice") by sentence (3) ("Mary gave the pencil to Beatrice in the classroom"). The main idea in Davidson's proposal is to view the expression "in the classroom" as a new predicate, which is also true of the same event that the giving-predicate is true of. Let us say: *if* there is an event which was a giving of the pencil by Mary to Beatrice and this event occured in the classroom, *then* there is an event which was a giving of the pencil by Mary to Beatrice. And this becames an instance of a logical truth which can be put more symbolically thus:

$(\exists e)$ [Giving (Mary, pencil, Beatrice, e) & In (the classroom, e)] $\rightarrow (\exists e)$ Giving (Mary, pencil, Beatrice, e).

But someone may want to go one step further and argue that it is also the case that sentence (2) entails another sentence saying only that Mary gave the pencil, without saying to whom did she give it. (A sentence whose utterance occurs in conversational contexts like this one: "– Where does Mary keep her pencil? – She has it no more. She gave it.") To account for this

further inference we need to uncover more structure than we did. And more structure there is.

Instead of analysing sentence (2) as containing only a four--place predicate, we can (and perhaps should) analyse it as being a conjunction between two different predicates. As follows:

(∃*e*) Giving (Mary, pencil, *e*) & To (Beatrice, *e*).

And, surely, this entails:

(∃*e*) Giving (Mary, pencil, *e*) which is the logical form of "Mary gave the pencil".

What we notice here is a point that Davidson has often stressed: in general, if we treat prepositions as integral parts of verbs we conceal logical structure. In fact, Davidson's theory is particularly well fitted to show this general contribution of prepositions to the structure of sentences, and hence to its meaning.

A final remark. As you may have noticed, all the examples of Davidsonian formalization that I have presented are quantified, general sentences. In fact, it seems to be part of Davidson's view that all action sentences are general sentences. And it has been criticized for this, with the argument that, at least in this respect, it is strongly contraintuitive.

If the logical form of "John kicked Bernard" is given by a general analytical sentence like "There is an event *e* which was a kicking of Bernard by John", the original sentence is true even if John kicked Bernard fifteen times and we cannot claim that the sentence "refers" to one of this kickings more than to any of the others. But, it is argued, when someone utters this sentence,

isn't it true that the person is looking for a particular kicking? To this objection, the best reply that I know consists in pointing out that the answer is in the question: Yes, the speaker may be meaning *that* kicking in particular, but that isn't the meaning of the sentence itself. And we must not fail to distinguish the meaning of a sentence from the meaning that, on a particular occasion, a particular speaker may want to communicate by an utterance of that sentence.