

The Metaphysics of Adverbs

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Three accounts of adverbs

(1) Maria stabbed Sam violently.

What are we to make of “violently”?

First theory: adverbs are operators on intensions:

(2) ((violently)stabbed)(Maria,Sam)

but

- not all adverbs map intensions of predicates to subsets of these intensions: negators, neutralizers, enlargers and fictionalizers
- in the case of iterations the detachment principle licenses not all of the intuitively valid inferences
- we do not individuate intensions fine-grainedly enough

Second theory: adverbs are predications of specific properties:

(3) $\exists f(f \text{ is a stabbing-property} \wedge f(\text{Maria,Sam}) \wedge f \text{ is violent})$

but

- properties are not violent
- the account is parasitic on underlying events

Third theory: adverbs are predications of events:

(4) $\exists e(e \text{ is a stabbing} \wedge e \text{ is by Maria} \wedge e \text{ is of Sam} \wedge e \text{ is violent})$

The account is general:

(5) Cesar died.

is analysed as:

(6) $\exists e(e \text{ is a dying} \wedge e \text{ is by Caesar} \wedge e \text{ culminates before now})$

It handles conjunctions of adverbs, analysing “Maria stabbed Sam violently with a knife” as

(7) $\exists e(e \text{ is a stabbing} \wedge e \text{ is by Maria} \wedge e \text{ is of Sam} \wedge e \text{ is violent} \wedge e \text{ is with a knife})$

which entails both “Maria stabbed Sam violently” and “Maria stabbed Sam with a knife” and is not entailed by their conjunction.

Some problems with underlying events

1. Some adverbs modify adverbs rather than verbs.
2. The contrast class of adverbs does not always seem to be a set of *events*:
 - (8) James Bond, freshly captured, cleverly stammered stupidly to his interrogators.
3. Not all iterations of adverbs can be analysed as conjunctions of predications of events.
 - (9) John painstakingly wrote illegibly.

seems different *both* from (10) and from (11):

 - (10) John wrote painstakingly and illegibly.
 - (11) John wrote painstakingly and John wrote illegibly
4. Not all iterations of adverbs that cannot be analysed as conjunctions modify sentences:
 - (12) She walked deliberately slowly.
5. Sentential and subject-oriented adverbs can take narrow scope. “John carefully carried the eggs in his left hand to the wrong house” can be taken to be three-way ambiguous – but is it between
 - (13) $\exists e \text{ Careful} (\text{Carrying}(e) \wedge \text{Agent}(\text{John}, e) \wedge \text{Theme}(\text{the eggs}, e) \wedge \text{In}(e, \text{John's left hand}) \wedge \text{To}(e, \text{the wrong house}))$
 - (14) $\exists e \text{ Careful} (\text{Carrying}(e) \wedge \text{Agent}(\text{John}, e) \wedge \text{Theme}(\text{the eggs}, e) \wedge \text{In}(e, \text{John's left hand})) \wedge \text{To}(e, \text{the wrong house})$
 - (15) $\exists e \text{ Careful} (\text{Carrying}(e) \wedge \text{Agent}(\text{John}, e) \wedge \text{Theme}(\text{the eggs}, e) \wedge \text{In}(e, \text{John's left hand}) \wedge \text{To}(e, \text{the wrong house}))$
6. If Kim’s buying to Sheenan is quiet and Sheehan’s selling from Kim is noisy, are the selling and the buying two different events?

An alternative?

Aim: Keeping as much of the power and flexibility of the underlying events account while including also subject-oriented and sentential adverbs and being more tolerant with respect to the identity conditions of the entities quantified over

Why not take adverbs to be modifiers of particular cases of the exemplification relation:

$$(16) \text{ex}_1(\langle \text{Maria, Sam} \rangle, \chi \text{ stabs } \xi) \wedge \text{ex}_2(\text{ex}_1, \chi \text{ is violent})$$

When we say that the exemplification of the stabbing relation was slow, we are not saying that they slowly exemplified the stabbing – the latter would have to be analysed as “They exemplified the stabbing in a slow manner” which qualifies not the exemplifying of the stabbing, but the exemplifying of the exemplifying of the stabbing.

We may, if we want, call ex_1 the stabbing of Sam by Maria. The predication of “ χ is violent” of this event, however, is another event, which is available for further predications.

We keep the account of modifier conjunction. “He buttered the toast slowly and meticulously” is (17) and different from “He buttered the toast meticulously slowly” (18):

$$(17) \text{ ex}_1(\langle \text{he, the toast} \rangle, \chi \text{ butters } \xi) \wedge \text{ex}_2(\text{ex}_1, \chi \text{ is slow}) \wedge \text{ex}_3(\text{ex}_1, \chi \text{ is meticulous})$$

$$(18) \text{ ex}_1(\langle \text{he, the toast} \rangle, \chi \text{ butters } \xi) \wedge \text{ex}_2(\text{ex}_1, \chi \text{ is slow}) \wedge \text{ex}_3(\text{ex}_2, \chi \text{ is meticulous})$$

Thematic relations are relational properties of the cases of the exemplification relation:

$$(19) \text{ ex}_1(\langle \text{Maria, Sam} \rangle, \chi \text{ stabs } \xi) \wedge \text{ex}_2(\text{ex}_1, \chi \text{ is violent}) \wedge \text{ex}_3(\langle \text{ex}_1, \text{knife} \rangle, \chi \text{ is with } \xi)$$

“He ran from a to b ” is analysed as (20) and “He ran from a and to b ” as (21):

$$(20) \text{ ex}_1(\text{he, } \chi \text{ runs}) \wedge \text{ex}_2(\langle \text{ex}_1, a \rangle, \chi \text{ is from } \xi) \wedge \text{ex}_3(\text{ex}_1, b), \xi \text{ is to } \chi)$$

$$(21) \text{ ex}_1(\text{he, } \chi \text{ runs}) \wedge \text{ex}_2(\langle \text{ex}_1, a \rangle, \chi \text{ is from } \xi) \wedge \text{ex}_3(\text{he, } \chi \text{ runs}) \wedge \text{ex}_4(\text{ex}_3, b), \chi \text{ is to } \xi)$$

What about attributives? “She stabbed him surprisingly quickly” and “She stabbed him increasingly violently” are analysed as

$$(22) \text{ ex}_1(\langle \text{Maria, Sam} \rangle, \chi \text{ stabs } \xi) \wedge \text{ex}_2(\text{ex}_1, \chi \text{ is quick}) \wedge \text{ex}_3(\text{ex}_2, \chi \text{ is surprising})$$

$$(23) \text{ ex}_1(\langle \text{Maria, Sam} \rangle, \chi \text{ stabs } \xi) \wedge \text{ex}_2(\text{ex}_1, \chi \text{ is violent}) \wedge \text{ex}_3(\text{ex}_2, \chi \text{ is increasing})$$

Whenever a binary relation is exemplified, two relational properties are exemplified too: if a exemplifies F , a has the property $\lambda x(\text{ex}_i(x, F))$ and F has the property $\lambda \phi(\text{ex}_i(a, \phi))$. Whenever there is an instance of the exemplification relation ex_i , there are two relational cases ex_i^1 and ex_i^2 .

“James Bond cleverly stammered stupidly to his interrogator” is:

$$(24) \text{ ex}_1(\text{James Bond, } \chi \text{ stammers}) \wedge \text{ex}_2(\langle \text{ex}_1, \text{the interrogators} \rangle, \chi \text{ is to } \xi) \wedge \\ \text{ex}_3(\text{ex}_1^1, \chi \text{ is clever}) \wedge \text{ex}_4(\text{ex}_1^2, \chi \text{ is stupid})$$

Why not read “ $\text{ex}_3(\text{ex}_1^1, \xi \text{ is clever})$ ” as “Whoever stammered, was behaving cleverly” and “ $\text{ex}_4(\text{ex}_1^2, \xi \text{ is stupid})$ ” as “What James Bond did was done stupidly”?

We keep the event approach for perceptual idioms, quantification over events and the inference from (25) to (26):

$$(25) \text{ After the } \textit{Marseillaise} \text{ was sung they saluted the flag.}$$

$$(26) \text{ After the singing of the } \textit{Marseillaise} \text{ they saluted the flag.}$$

“John carried the eggs in his left hand to the wrong house” becomes:

$$(27) \text{ ex}_1(\langle \text{John, the eggs} \rangle, \chi \text{ carries } \xi) \wedge \text{ex}_2(\langle \text{ex}_1, \text{John's left hand} \rangle, \chi \text{ is in } \xi) \wedge \\ \text{ex}_3(\langle \text{ex}_1, \text{the wrong house} \rangle, \chi \text{ is to } \xi)$$

To distinguish the different readings of “carefully”, we now add to (27) either just “ $\text{ex}_4(\text{ex}_3, \chi \text{ is careful})$ ” or this *and* “ $\text{ex}_5(\text{ex}_2, \chi \text{ is careful})$ ” or these two together with “ $\text{ex}_6(\text{ex}_1, \chi \text{ is careful})$ ”.

If we do not want to identify the (slowly) heating up of the ball with the (fast) rotating, we have

$$(28) \text{ ex}_1(\text{the ball, } \chi \text{ heats up}) \wedge \text{ex}_2(\text{the ball, } \chi \text{ rotates}) \wedge \text{ex}_3(\text{ex}_1, \chi \text{ is slow}) \wedge \text{ex}_4(\text{ex}_2, \chi \text{ is fast})$$

If we want to identify them, however, we may still say:

$$(29) \text{ ex}_1(\text{the ball, } \chi \text{ heats up}) \wedge \text{ex}_1(\text{the ball, } \chi \text{ rotates}) \wedge \text{ex}_2(\text{ex}_1^1, \chi \text{ is slow}) \wedge \text{ex}_3(\text{ex}_1^1, \chi \text{ is fast})$$