What to do with agent-oriented adverbs

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1 Introduction

Jackendoff (1972, p. 49) points out that adverbs such as *cleverly* and *clumsily* may appear in three positions but with a difference in meaning according to position:

(1)   a.   John $\left\{ \begin{array}{c} \text{cleverly} \\ \text{clumsily} \end{array} \right\}$ dropped his cup of coffee.

   b. $\left\{ \begin{array}{c} \text{Cleverly} \\ \text{Clumsily} \end{array} \right\}$(,) John dropped his cup of coffee.

   c.   John dropped his cup of coffee $\left\{ \begin{array}{c} \text{cleverly} \\ \text{clumsily} \end{array} \right\}$.

The sentences in (1b) and (1c) allow for the approximate paraphrases in (2a) and (2b), respectively:

(2)   a.   It was $\left\{ \begin{array}{c} \text{clever} \\ \text{clumsy} \end{array} \right\}$ of John to drop his cup of coffee.

   b.   The manner in which John dropped his cup of coffee was $\left\{ \begin{array}{c} \text{clever} \\ \text{clumsy} \end{array} \right\}$.

The sentence in (1a) is ambiguous between (1b) and (1c), allowing for either paraphrase in (2). Jackendoff calls the adverbs in (1b) *subject-oriented*, but I will adopt *agent-oriented*, which is a more revealing label (see also Ernst 2002, p. 54). In contrast, the adverbs in (1c) are *manner* adverbs. Some other adverbs that pattern like *cleverly* and *clumsily* in exhibiting the "alternation" illustrated in (1) are as follows:

(3)   aggressively, foolishly, graciously, intelligently, ostentatiously, rudely, stupidly, tactfully, wisely

Such adverbs raise two central questions. The first is how to account for the perceived polysemy between the agent-oriented and manner readings (as opposed to a plain ambiguity account). Despite various claims to the contrary (e.g., Ernst

2000, Ernst 2002, chap. 2.3.2, Wyner 2008), this question is (to my mind) still awaiting a satisfactory answer.

The second question is what the adverbs are "modifying" on each reading, i.e., what the "lexico-logical forms" of these adverbs are. Arguably, the first question presupposes an answer to the second question, and so it is largely this second question that will occupy me here (with the first question in the background).

2   Four previous analyses

There are a number of ideas about how to analyse the agent-oriented/manner contrast. I will briefly discuss four analyses that have been proposed.

2.1   Moore (1995)

Moore, in a paper originally published in 1989, suggests that whereas manner adverbs are best analyzed as predicates of *events*, agent-oriented adverbs are best treated as predicates of *situations*. As an illustration, he proposes (p. 168) that the sentences in (4a) and (5a) receive the analyses in (4b) and (5b).[1]

(4)   a.   John sang strangely.
       b. $\exists e(\mathsf{Sang}(\mathsf{John}, e) \land \mathsf{Strange}(e))$

(5)   a.   Strangely, John sang.
       b. $\exists s(\mathsf{Fact}(s, \exists e(\mathsf{Sang}(\mathsf{John}, e))) \land \mathsf{Strange}(s))$

The relation Fact in (5b) holds between a situation and a true proposition. In Moore's words, the formula in (5b) "says literally that there exists a fact (or situation) of there being a singing-by-John event and that fact is strange, or more informally, the fact that John sang is strange." This substitution of "fact" for "situation" may seem surprising at first, but since in Moore's approach only actual situations stand in the relation Fact to true propositions, such situations effectively play the role of facts.

Moore's analysis has a couple of nice consequences. The first is that agent-oriented adverbs are *factive*. For instance, the meaning of the sentence in (5a) entails that John sang. This follows because the situations that stand in the relation Fact to true propositions are real pieces of the world.

The second consequence is that a sentence with an agent-oriented adverb is *nonextensional* in that a substitution of coreferential singular terms may affect its truth value. Moore illustrates this (p. 169) with the following pair of examples:

(6)   a.   Rudely, John spoke to the Queen.
       b.   Rudely, John spoke to the woman next to him.

On a *de dicto* reading, it may well be that the sentence in (6a) is true, while the one in (6b) is false, even if the Queen is the woman next to John. In Moore's approach, this follows because situations are more finely individuated than events. In short, since the proposition that John spoke to the Queen is different from the

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[1]For greater perspicacity, I have employed sorted variables for events and situations (Moore uses unsorted variables).

proposition that John spoke to the woman next to him, the situations that stand in the relation Fact to these propositions are different. Consequently, one of these situations may be rude without the other one also being rude.

Moore views the agent-oriented/manner contrast as providing empirical evidence for reconciling a situation semantic approach à la Barwise and Perry (1983) with an event semantic approach à la Davidson (1980). Although such a reconcilation may be desirable for a number of reasons, the immediate question is whether Moore's analysis of this contrast—and, in particular, that of agent-oriented adverbs—is convincing.

From the present perspective, there are two main points of criticism that can be made against Moore's analysis of the agent-oriented/manner contrast. The first is that the polysemy of adverbs that show the agent-oriented/manner contrast is unaccounted for. For example, there is no apparent link between Strange as a predicate of events in (4b) and Strange as a predicate of situations (or facts) in (5b).

The second is that insofar as the acceptability or unacceptability of paraphrases with the noun *fact* is supposed to constitute evidence for or against a fact-based analysis, it seems unlikely that agent-oriented adverbs contribute predicates of facts in the way that Moore's analysis suggests:

(7)   a.   Cleverly, John dropped his cup of coffee. (From (1b)) $\not\approx$
             !The fact that John dropped his cup of coffee is clever.
       b.   Rudely, John spoke to the Queen. (= (6a)) $\not\approx$
             !The fact that John spoke to the Queen is rude.
       c.   Foolishly, the senator has been talking to reporters.
             (From Ernst 2002, p. 54) $\not\approx$
             !The fact that the senator has been talking to reporters is foolish.
       d.   Strangely, John sang. (= (5a)) $?\approx$
             The fact that John sang is strange.

Of these, only the *fact*-paraphrase in (7d) is plausible—it is thus probably not an accident that Moore chose this example to illustrate his analysis. Indeed, the plausibility of the *fact*-paraphrase in this case may suggest that *strangely* has a third reading as well, as an *evaluative* adverb, in addition to its agent-oriented and manner readings. This is supported by the observation that the following two sentences are not approximate paraphrases:

(8)   It was strange of John to sing. ($\approx$ (5a)) $\not\approx$
       The fact that John sang is strange.

To put this point another way: if the fact that John sang is strange, then we can conclude that there is a strange fact, but if it was strange of John to sing, then we cannot necessarily conclude that there is a strange fact. (Or so I would argue.)

2.2   Geuder (2000)

It would be difficult to summarize Geuder's (chap. 4) account of agent-oriented adjectives and adverbs and the agent-oriented/manner contrast in a short space accurately. One of the practical difficulties in doing so is that when he attempts

to be more explicit, his concern is almost exclusively with the (detailed) lexical semantics of *stupid(ly)*, and as a consequence it is not entirely obvious what he takes the semantics of *stupid(ly)* to have in common with other agent-oriented adjectives and adverbs. Furthermore, there are (to my mind) several details that are not clear even in his treatment of *stupid(ly)*. (He does not provide semantic derivations.) In any case, Geuder proposes (pp. 171, 180) a single interpretation for both the agent-oriented and the manner reading of *stupid(ly)*, adding (p. 170) that he has "to resort to a mixed representation, which is clearly provisional."

(9) $\text{stupid}_{C,w*}(x)(k) = 1$
with $k \approx \langle \{e, x, \ldots\}, \{P_{w_0}(e, x, \ldots)\} \rangle$ and:
(i) $C \models \exists e* : e \text{ CAUSE } e*$, &
(ii) x does not intend to bring about $e*$, the occurrence of $e*$ is incompatible with the preferences of x in w_0, &
(iii) $\forall w' \in W : \exists e[P_{w'}(e)(x)] \Leftrightarrow D_{w'}(x)$.

For present purposes, there are two points of criticism to make. The first is that it is implausible to think that the agent-oriented and manner readings of an alternating adverb receive the same analysis unless a very clear story is told about how to derive the undeniable difference between these readings:

(10) a. John stupidly negotiated.
b. John negotiated stupidly.

To be fair, Geuder does try (pp. 184–185) to tell a story in prose with an appeal to abduction, causal chains, and scripts about how the property P may get instantiated in a particular context, but I fear that the story still needs to be spelled out. (By all appearances, the value of P should be supplied by the sentence-internal linguistic material.)

The other criticism is that Geuder's analysis states that *stupid(ly)* has a fact argument k and yet it seems doubtful that *stupid(ly)* has a fact argument if we base ourselves on the (un)availability of paraphrases with the noun *fact*.

(11) John stupidly negotiated. (= (10a)) $\approx$
It was stupid of John that he negotiated.

(12) a. ??It was stupid of John the fact that he negotiated.
b. ??The fact that he negotiated was stupid of John.

In this respect, the situation is worse for the manner reading:

(13) John negotiated stupidly. (= (10b)) $\approx$
The manner in which John negotiated was stupid. $\napprox$
!The fact that John negotiated was stupid.

As far as I can tell, one of the main reasons that Geuder wants a fact argument is for factivity. However, there is a much simpler way to get factivity in an event semantic analysis, and that is with a conjunctive meaning. Furthermore, the introduction of the fact argument k in his analysis in (9) causes technical worries because of the binding of e and x into the DRS embedded under k.

2.3 Wyner (2008)

One of Wyner's central aims is to propose a semantic account of the following contrast:

(14) a.   Stupidly, Bill passionately kissed Jill.   (= Wyner's (22a))
      b. *Passionately, Bill, stupidly, kissed Jill.   (= Wyner's (23c))

Wyner takes manner adverbs (e.g., *passionately*) to be predicates of events and takes agent-oriented adverbs (e.g., *stupidly*) to be predicates of facts. His analysis of *stupidly* is as follows:

(15) $\lambda P \exists f (\mathsf{Fact}(P) = f \wedge \mathsf{stupid}(f))$,   (= Wyner's (32))
      where P is a literal and f is an individual fact

According to Wyner (p. 264), "a fact is a *literal* of predicate logic, that is, a positive or negative expression which is true or false in a world and does not quantify over worlds." Unfortunately, he doesn't provide explicit derivations, but we would presumably have something like the following representation for (14a) (assuming his use of thematic role functions):

(16) $\exists f (\mathsf{Fact}(\exists e(\mathsf{kiss}(e) \wedge \mathsf{agent}(e) = \mathsf{bill} \wedge \mathsf{theme}(e) = \mathsf{jill} \wedge \mathsf{passionate}(e))) = f \wedge \mathsf{stupid}(f))$

It's now clear that we won't be able to derive (14b), because after the application of the agent-oriented adverb *stupidly*, the event argument is no longer available for modification by the manner adverb *passionately*.
    There are at least three problems with this analysis:

- The claim that (e.g.) the meaning of (14a) asserts that a fact is stupid (still) doesn't seem convincing.

- In (16), it's unclear how Bill's behavior/action is said to be stupid.

- For alternating adverbs such as *stupidly* (*rudely*, etc.), it's unclear how the predicate of events (for the manner reading) and the predicate of facts (for the agent-oriented reading) are related.

    Observe that Wyner's analysis is much in the same spirit as Moore's and so, not surprisingly, suffers from similar problems.
    Geuder convincingly argues (pp. 125–133) that an earlier analysis in Wyner (1994) of the agent-oriented/manner contrast is unsuccessful.
    Finally, note that Parsons (1990, p. 291, fn. 28) also suggests in passing that agent-oriented adverbs take a fact argument.

2.4 Ernst (2002)

Geuder (pp. 135–138) has already convincingly argued against the analysis proposed in Ernst (2000). The proposal in Ernst (2002) builds on the earlier one. For present purposes, it suffices to mention what Ernst takes to be the core difference between agent-oriented and manner adverbs, using *rudely* as an example:

(17)   a.   Rudely, she left.   (= Ernst's (2.44a))

b.   She left rudely.   (= Ernst's (2.44b))

(18)   a.   e [_{REL} warrants positing] rudeness in Agent   (= Ernst's (2.45a))
          b.   e [_{REL} manifests] rudeness in Agent   (= Ernst's (2.45b))

Ernst also postulates a "Manner Rule" (p. 58) that "converts" [_{REL} warrants positing] to [_{REL} manifests] (though it's not clear how the rule accomplishes this).

Unfortunately, quite apart from the problem of understanding how the Manner Rule works, it's difficult to appreciate what the notions "warrants positing" and "manifests" amount to in the end in the absence of at least a partial characterization. For instance, on intuitive grounds, it would be easy to imagine that "manifests" should entail "warrants positing," but this is not what Ernst intends (for otherwise *rudely* as a manner adverb would entail *rudely* as an agent-oriented adverb).

Until Ernst's analysis is more spelled out, it's difficult to regard it as satisfactory.

3   A new direction

The leading idea is that agent-oriented adverbs are also manner adverbs in a way, but they are manner adverbs for another "higher" event predication as opposed to the one introduced by the verb. In fact, this idea is really not so new; but at the same time, it seems to have been mostly forgotten.

3.1   McConnell-Ginet (1982)

Among other things, McConnell-Ginet (pp. 172–173) asks how the agent-oriented/manner contrast should be accounted for:

(19)   a.   Louisa rudely departed.
          b.   Louisa departed rudely.

McConnell-Ginet takes *rudely* in (19b), the manner reading, to be an argument of the verb *depart*. This is made possible by an operation that extends the argument structure of verbs (e.g., *depart*) to include an argument place for (compatible) manner adverbs. (The details of this operation need not concern us here.)

She then suggests that *rudely* in (19a), the agent-oriented reading, also be treated as a manner adverb, though of a higher verb *act*, which is syntactically "abstract" in (19a). She observes the following near-equivalence in support of her suggestion:

(20)   Louisa rudely departed (= (19a)) ≈
          Louisa acted rudely to depart

In a similar fashion, the argument structure of *act* would be extended to include an argument place for (compatible) manner adverbs.

McConnell-Ginet's proposal is simple and elegant, and it suggests an exciting general scenario in which *(nearly) every adverb is a manner adverb*, even if she does not quite put it this way. Unfortunately, though, her proposal also faces a couple of problems.

3.2 Geuder on McConnell-Ginet

As far as I am aware, Geuder (pp. 122–124) is the only one to have critically reviewed this particular proposal by McConnell-Ginet. He points out two important shortcomings. The first is that the postulation of a higher abstract verb *act* seems unjustified in light of the following non-equivalence:

(21)   Louisa departed $\not\approx$ Louisa acted to depart

In other words, if an agent-oriented adverb is absent, the paraphrase offered by McConnell-Ginet with *act* is much less compelling.

The second problem that Geuder observes is that McConnell-Ginet's account could not straightforwardly deal with the following contrast:

(22)   a.   Louisa acted rudely.
        b.   Louisa rudely acted.

Geuder correctly notices that the analysis of (22b) would have to include an abstract verb *act* in addition to the concrete verb *act*, which he does not find to be an attractive move.

Although these two shortcomings may seem decisive at first (Geuder speaks of "fatal disadvantages"), I believe that they can in fact be overcome.

3.3 Recasting McConnell-Ginet's analysis

Suppose that the "higher verb" in question is not *act* but rather the following relation "decide to do A," where A stands for relations between individuals (namely, agents) and events. Note that, strictly speaking, this is not so much a "higher verb" as it is a "higher relation."

(23) $\lambda x \lambda e \lambda A.\mathsf{decide}(e, x, [^{\wedge}\lambda x' \lambda e'.A(e', x')](x))$

(24) $\forall x \forall e \forall A (\mathsf{decide}(e, x, [^{\wedge}\lambda x' \lambda e'.A(e', x')](x)) \rightarrow \mathsf{agent}(e, x))$ (axiom)

(25) $\forall x \forall e \forall A (\mathsf{decide}(e, x, [^{\wedge}\lambda x' \lambda e'.A(e', x')](x)) \rightarrow$ (axiom)
        $\forall x'' \forall e''(A(e'', x'') \rightarrow \mathsf{agent}(e'', x'')))$

The relation decide is not always present in a derivation; instead, it may be contributed by an agent-oriented adverb, e.g., *rudely^a*:

(26)   rudely^a $\rightsquigarrow$
        $\lambda A \lambda x \lambda e.\exists e''(\mathsf{decide}(e'', x, [^{\wedge}\lambda x' \lambda e'.A(e', x')](x)) \wedge \mathsf{cause}(e'', e) \wedge A(e, x) \wedge$
        $\mathsf{rude}(e''))$

This yields the following approximate paraphrases:

(27)   Louisa rudely departed (= (19a)) $\approx$
        Louisa's decision to depart was rude $\approx$
        Louisa decided rudely to depart $\approx$
        Louisa rudely decided to depart

Note that Geuder's first criticism against McConnell-Ginet's proposal is not a problem for the present proposal, because the relation decide is not always present—

it is introduced by an agent-oriented adverb. Consequently, the following non-equivalence is expected:

(28)   Louisa departed $\not\approx$ Louisa decided to depart and she departed (Cf.(21))

In order to meet Geuder's second criticism, it helps to adopt a transitivity principle which says that "decide to decide to do A" reduces to "decide to do A":

(29) $\forall x \forall e \forall A(\mathsf{decide}(e, x, {}^{\wedge}\lambda e'.\mathsf{decide}(e', x, [{}^{\wedge}\lambda x'' \lambda e''.A(e'', x'')](x))) \rightarrow$ (axiom)
           $\mathsf{decide}(e, x, [{}^{\wedge}\lambda x'' \lambda e''.A(e'', x'')](x)))$

Insofar as the relation decide is a semantic reflection of the verb *decide*, this has the consequence that there is no agent-oriented/manner contrast with *decide*:

(30)   Louisa rudely decided to depart $\approx$ Louisa decided rudely to depart (see (27))

The manner reading of alternating adverbs such as *rudely* could be treated—as a first approximation—as a predicate of the "lower events" introduced by the verb itself:

(31)   rudely$^m \rightsquigarrow \lambda E \lambda e.E(e) \wedge \mathsf{rude}(e)$

I conclude with the following points:

- An analysis of agent-oriented adverbs not only does not need to make reference to "facts" as a distinct ontological sort but also should not (*pace* Moore 1995 and Geuder 2000, among others).

- The agent-oriented/manner contrast also does not rely on a reference to "facts."

- McConnell-Ginet (1982) has the right intuition that agent-oriented adverbs are a kind of manner adverbs but her analysis is flawed (as Geuder argues).

- It is feasible (and desirable) to recast McConnell-Ginet's intuition in a new semantic analysis that is not subject to Geuder's criticisms. In the new analysis, an agent-oriented adverb (e.g., *rudely^a*) introduces a "higher relation" (e.g., decide) whose event argument it is predicated of.

- The agent-oriented/manner contrast depends on which event argument is modified, that of the "higher relation" (agent-oriented) or that of the verb (manner).

References

Barwise, Jon and John Perry. 1983. *Situations and Attitudes*. Cambridge, MA: The MIT Press/Bradford Books.

Davidson, Donald. 1980. The logical form of action sentences. *Essays on Actions and Events*, 105–122. Oxford: Clarendon Press. (Originally published in 1967.)

Ernst, Thomas. 2000. Manners and events. *Events as Grammatical Objects: The Converging Perspectives of Lexical Semantics and Syntax*, ed. Carol Tenny and James Pustejovsky, 335–358. Stanford, CA: CSLI Publications.

Ernst, Thomas. 2002. *The Syntax of Adjuncts*. Cambridge University Press.

Geuder, Wilhelm. 2000. *Oriented Adverbs: Issues in the Lexical Semantics of Event Adverbs*. Doctoral dissertation, Universität Tübingen.

Jackendoff, Ray S. 1972. *Semantic Interpretation in Generative Grammar*. Cambridge, MA: The MIT Press.

McConnell-Ginet, Sally. 1982. Adverbs and logical form: a linguistically realistic theory. *Language* 58, 144–184.

McNally, Louise and Christopher Kennedy, eds. 2008. *Adjectives and Adverbs: Syntax, Semantics, and Discourse*. Oxford University Press.

Moore, Robert C. 1995. Events, situations, and adverbs. *Logic and Representation*, pp. 159–170. Stanford, CA: CSLI Publications. (Originally published in 1989.)

Parsons, Terence. 1990. *Events in the Semantics of English: A Study in Subatomic Semantics*. Cambridge, MA: The MIT Press.

Wyner, Adam Zachary. 1994. *Boolean Event Lattices and Thematic Roles in the Syntax and Semantics of Adverbial Modification*. PhD dissertation, Cornell University.

Wyner, Adam Zachary. 2008. Towards flexible types with constraints for manner and factive adverbs. McNally and Kennedy (2008, pp. 249–273).