

Manner adverbs and manners

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1 Introduction

The leading question, which is more to be asked than answered:

- Is there a semantic/ontological perspective on manner adverbs that treats their meanings as essentially different from the meanings of verbs?

On a standard event semantic approach (e.g., neo-Davidsonian; Parsons 1990), both manner adverbs and verbs are treated as predicates of events which are then simply conjoined:

- (1) a. Rebecca wrote illegibly.
b. $\lambda e.\text{write}(e) \wedge \text{agent}(\text{rebecca})(e) \wedge \text{illegible}(e)$

The standard approach is attractive because of its simplicity and because it naturally accounts for the fact that a clause with a manner adverb entails the corresponding clause without a manner adverb. For example, (1a) entails the corresponding clause without *illegibly*:

- (2) a. Rebecca wrote.
b. $\lambda e.\text{write}(e) \wedge \text{agent}(\text{rebecca})(e)$

In general, once an event semantic approach is available, a return to an “operator approach” such as that of Parsons (1972) or Stalnaker and Thomason (1973) for the analysis of manner adverbs would appear to be a step backward (Eckardt 1998, chap. 1).

However, observe that, on the standard event semantic approach, manner adverbs are semantically on a par with verbs, which are also analysed as predicates of events. Consequently, the difference between manner adverbs and verbs is largely if not wholly *syntactic*—there is no sharp *semantic* difference between them. While this may be correct, it is not obviously correct, as I will now suggest.

2 Three issues

Manner adverbs with scope Not all manner adverbs can be treated as simple predicates of events, e.g., *painstakingly* or *carefully* (Parsons 1972, Peterson 1997, chap. 10, Schäfer 2005, chap. 6, Schäfer 2007):

- (3) a. Rebecca painstakingly wrote illegibly \nrightarrow Rebecca wrote painstakingly
b. Malika carefully spoke softly \nrightarrow Malika carefully spoke

In other words, certain manner adverbs may sometimes take scope over other manner adverbs, which is not captured by the standard event semantic treatment:

- (4) $\lambda e. \text{write}(e) \wedge \text{agent}(\text{rebecca})(e) \wedge \text{painstaking}(e) \wedge \text{illegible}(e)$ ▷ Standard analysis of (3a)

Verbs of perception How should the difference between the following pairs of sentence be captured?

- (5) a. Malika saw Rebecca write illegibly.
 b. Malika saw how Rebecca wrote.
- (6) a. Rebecca heard Malika speak softly.
 b. Rebecca heard how Malika spoke.

On the standard event semantic approach to verbs of perception with a bare IP complement, (5a) would be analyzed as involving a visually perceived event:

- (7) $\lambda e. \text{see}(e) \wedge \text{experiencer}(\text{malika})(e) \wedge \exists e'(\text{write}(e') \wedge \text{agent}(\text{rebecca})(e') \wedge \text{illegible}(e') \wedge \text{stimulus}(e')(e))$ ▷ Standard analysis of (5a)

However, it is not evident how to treat (5b) and (6b) in the standard framework. Note, moreover, that (5b) and (6b) also need to be distinguished from the case where *see* and *hear* take a canonical propositional complement:

- (8) a. Malika saw that Rebecca had written illegibly.
 b. Rebecca heard that Malika had spoken softly.

Minimally, it is clear that (5b) and (6b) are not equivalent to (5a)/(8a) and (6a)/(8b), respectively.

Paraphrase with *the way* ... In general, a clause with a manner adverb can be appropriately paraphrased by one in which the corresponding adjective is predicated of a complex NP headed by *the way*, illustrated as follows (cf. Schäfer's (2005) test 3.1):¹

- (9) a. Rebecca wrote illegibly \approx The way Rebecca wrote was illegible
 b. Malika spoke softly \approx The way Malika spoke was soft

More interesting is the case where there are two manner adverbs, with one taking scope over the other:

- (10) a. Rebecca painstakingly wrote illegibly \approx
 The way Rebecca wrote was painstakingly illegible
 b. Malika carefully spoke softly \approx The way Malika spoke was carefully soft

This differs from the case where the two manner adverbs do not stand in a scopal relation:

- (11) a. Rebecca wrote painstakingly and illegibly \approx
 The way Rebecca wrote was painstaking and illegible
 b. Malika spoke carefully and softly \approx
 The way Malika spoke was careful and soft

¹Schäfer (2007) claims that *unleserlich* is an implicit resultative and not a manner adverb after all. Although I disagree with him about this (it seems to me that it can be a manner adverb), another example could be chosen to make the same point, if necessary.

The question is why this test works, i.e., why such a paraphrase is appropriate. The standard event semantic treatment seems to offer no ready answer here.

3 Reifying manners

The leading idea of the new approach is to reify manners, i.e., to take manners as objects in their own right. Like ordinary individuals, events, and times, manners are concrete particulars, but they differ from ordinary objects, events, and times in their ontological status. In particular, manners differ events in that they are *ontologically dependent* on events and event types, i.e., they could not exist if events of a particular type did not exist. In what follows, the variables m, m', \dots stand for manners.

Manners, I Taking *illegibly* as an illustration, the proposal is to treat its core lexical semantic meaning as a predicate of manners. However, something has to be said about how such manners relate to events. The idea is that (e.g.) writing events have a *form*—imagine the trajectory of motion of the point of the writing instrument (e.g., a pen) in a writing event. It is this trajectory that may be said to legible or illegible. This is one manner of a writing event—in fact, it is the *form-manner* of a writing event. Suppose, then, that there is a function **form** that yields the form-manner of a writing event, as in (12b):

- (12) a. $\lambda E \lambda e. \mathbf{form}(E)(e)$ \triangleright Function from event types and events to form-manners
 b. $\lambda e. \mathbf{form}(\lambda e'. \mathbf{write}(e'))(e)$
 \triangleright Function from events to form-manners for the writing event type

We need to ensure that the particular events applied to are really of the event type E :

$$(13) \quad \forall E \forall e (\exists m (\mathbf{form}(E)(e) = m) \rightarrow E(e)) \quad \triangleright \text{Axiom}$$

Arguably, if the event type is one of writing by hand, then it always has a form-manner:

$$(14) \quad \forall E \forall e (E = [\lambda e'. \mathbf{write}(e') \wedge \mathbf{by-hand}(e')] \wedge E(e) \rightarrow \exists m (\mathbf{form}(E)(e) = m)) \quad \triangleright \text{Axiom}$$

It is questionable whether all writing events have a form-manner in the sense intended here. For example, if one writes a paper using a computer, it may not be possible to (literally) write illegibly. In any case, I will assume that we are concerned with events of writing by hand.

Since manners, as concrete particulars, are intimately tied to the particular events that they are manners of, no two writing events can have the same form-manner:

$$(15) \quad \forall e \forall e' (\exists m (\mathbf{form}(\lambda e''. \mathbf{write}(e''))(e) = m \wedge \mathbf{form}(\lambda e''. \mathbf{write}(e''))(e') = m) \rightarrow e = e') \quad \triangleright \text{Axiom}$$

If we now introduce **illegible** as a predicate of manners, then an somewhat oversimplified statement² of the ontological dependence of such manners on the writing event type and a particular (writing) event (not to mention the **form** function) is as follows:

$$(16) \quad \forall m (\mathbf{illegible}(m) \rightarrow \exists e (\mathbf{form}(\lambda e'. \mathbf{write}(e'))(e) = m)) \quad \triangleright \text{Axiom}$$

With manners in place, the semantic analysis of (1a) is as in (17).

²It is oversimplified because ontological dependence is a modal notion, but the modal dimension is suppressed here.

$$(17) \quad \text{Rebecca write- illegibly} \rightsquigarrow \lambda e. \mathbf{agent(rebecca)}(e) \wedge \mathbf{write}(e) \wedge \mathbf{illegible(form}(\lambda e'. \mathbf{write}(e'))(e)) \quad \triangleright \text{Cf. (1)}$$

If we assume that *illegibly* is syntactically a VP-modifier, then the VP in (17) may be derived as in (18):

$$(18) \quad \begin{array}{l} 1: [\text{VP write-}] \rightsquigarrow \lambda e. \mathbf{write}(e) \\ 2: \text{illegibly} \rightsquigarrow \lambda E \lambda e. E(e) \wedge \mathbf{illegible(form}(E)(e)) \\ 3: [\text{VP} [\text{VP write-}] \text{illegibly}] \rightsquigarrow \lambda e. \mathbf{write}(e) \wedge \mathbf{illegible(form}(\lambda e'. \mathbf{write}(e'))(e)) \end{array}$$

If we wanted to take into account the implicit incremental theme of *write*, this analysis could be refined. For example, it might be preferable to take illegible manners to be ontologically dependent on a *relation* between incremental themes and writing events (as well as a particular writing event and a incremental theme).

To summarize, manners are concrete particulars ontologically dependent on an event type and event as well as a function (e.g., **form**) that determines the sort of manners they are.

Manners, II The treatment of *painstakingly* is similar in that the manners denoted are ontologically dependent on an event type and an event as well as a function determining the kind of manners they are. In this case, suppose that the function at issue is **effort** and the manners in question are *effort-manners*:

$$(19) \quad \lambda E \lambda e. \mathbf{effort}(E)(e) \quad \triangleright \text{Function from event types and events to effort-manners}$$

Arguably, **effort** is defined just in case the event type *E* implies an agent:

$$(20) \quad \forall E \forall e ((E(e) \rightarrow \exists x (\mathbf{agent}(x)(e))) \leftrightarrow \exists m (\mathbf{effort}(E)(e) = m)) \quad \triangleright \text{Axiom}$$

An analogue of the axiom in (15) is needed, and—once the predicate **painstaking** is introduced—an analogue of (16) is also desirable:

$$(21) \quad \begin{array}{ll} \text{a.} & \forall E \forall e \forall e' (\exists m (\mathbf{effort}(E)(e) = m \wedge \mathbf{effort}(E)(e') = m) \rightarrow e = e') \quad \triangleright \text{Axiom} \\ \text{b.} & \forall m (\mathbf{painstaking}(m) \rightarrow \exists E \exists e (\mathbf{effort}(E)(e) = m)) \quad \triangleright \text{Axiom} \end{array}$$

A simple example with *painstakingly* is analyzed as follows:

$$(22) \quad \text{Rebecca write- painstakingly} \rightsquigarrow \lambda e. \mathbf{agent(rebecca)}(e) \wedge \mathbf{write}(e) \wedge \mathbf{painstaking}(\mathbf{effort}(\lambda e'. \mathbf{write}(e'))(e))$$

The derivation of the VP in (22) parallels the one in (18).

However, the more interesting case is when *painstakingly* takes scope over *illegibly*, seen earlier in (3a):

$$(23) \quad \text{Rebecca painstakingly write- illegibly} \rightsquigarrow \lambda e. \mathbf{agent(rebecca)}(e) \wedge \mathbf{write}(e) \wedge \mathbf{illegible(form}(\lambda e'. \mathbf{write}(e'))(e)) \wedge \mathbf{painstaking}(\mathbf{effort}(\lambda e'. \mathbf{write}(e') \wedge \mathbf{illegible(form}(\lambda e''. \mathbf{write}(e''))(e'))(e)) \quad \triangleright \text{Cf. (3a)}$$

To obtain this result, we need to assume that the event type to which the meaning of *painstakingly* applies is that of writing illegibly. Observe that this analysis correctly predicts that this sentence does not entail the one in (22) (cf. (3a)).

In sum, manner adverbs with scope receive a natural treatment in the new approach. Indeed, if manner adverbs are basically predicates of manners and manners are ontologically dependent on an event type (as well as on an event and a function determining the

sort of manners in question), then it is expected that the complexity of the event type may vary, other things being equal.

In closing, I add a brief comparison of the present treatment with Schäfer's (2005, 2007) proposals for the analysis of such examples:

- No need for contextual parameters for this phenomenon (Schäfer 2005 assumes two contextual parameters)
- No need to proliferate events for this phenomenon—only one event is needed to treat the sentence in (23) (Schäfer 2007 assumes three events for such sentences)
- No need to shift activities into accomplishments for this phenomenon—the sentence in (23) remains an activity (Schäfer 2007 requires such sentences to be shifted into accomplishments)

4 Extensions

The new approach also sheds light on the other two issues for the standard approach.

Perceiving manners Since manners are concrete particulars, they may be perceived. This does not mean that they may be perceived in complete isolation from the events that they ontologically depend on, but they can be perceived nonetheless.

The sentence in (5b) receives the following analysis in the present approach:

$$(24) \quad \text{Malika see- how Rebecca write- } \rightsquigarrow \quad \triangleright \text{ Cf. (5b)}$$

$$\lambda e.\text{see}(e) \wedge \text{experiencer}(\text{malika})(e) \wedge$$

$$\text{stimulus}(\iota m(\exists e'(\text{write}(e') \wedge \text{agent}(\text{rebecca})(e') \wedge \text{form}(\lambda e''.\text{write}(e''))(e') = m)))(e)$$

Observe that the first argument of **stimulus** is a manner term corresponding to the *how*-clause:

$$(25) \quad \text{how Rebecca write- } \rightsquigarrow$$

$$\iota m(\exists e'(\text{write}(e') \wedge \text{agent}(\text{rebecca})(e') \wedge \text{form}(\lambda e''.\text{write}(e''))(e') = m))$$

It should be acknowledged that the meaning of (5b) is actually underspecified with respect to the exact manner that is visually perceived, as is shown by the following two ways of specifying the manner:

- $$(26) \quad \begin{array}{l} \text{a. Malika saw how Rebecca wrote, namely, illegibly.} \\ \text{b. Malika saw how Rebecca wrote, namely, painstakingly.} \end{array}$$

In fact, the *how*-clause can also refer to a complex manner such as *painstakingly illegibly*:

$$(27) \quad \begin{array}{l} \text{a. Malika saw how Rebecca wrote, namely, painstakingly illegibly.} \\ \text{b. painstakingly illegibly } \rightsquigarrow \quad \triangleright E \text{ and } e \text{ are anaphoric here} \\ \quad \iota m(\text{painstaking}(\text{effort}(\lambda e'.\text{illegible}(\text{form}(E)(e'))))(e) = m)) \end{array}$$

Why the paraphrase with *the way* ... works The idea that there are definite descriptions of manners is also useful for showing why a manner adverb can be appropriately paraphrased with the corresponding adjective predicated of an NP headed by *the way* In a nutshell, such NPs can be treated as definite descriptions of manners.

The paraphrase in (9a) receives the following analysis:

- (28) The way Rebecca write- be- illegible \rightsquigarrow ▷ Cf. (9a)
 $\text{illegible}(\text{im}(\exists e(\text{agent}(\text{rebecca})(e) \wedge \text{form}(\lambda e'.\text{write}(e'))(e) = m)))$

Notice that the argument of **illegible** is a manner term corresponding to the NP headed by *the way*:

- (29) the way Rebecca write- \rightsquigarrow
 $\text{im}(\exists e'(\text{agent}(\text{rebecca})(e') \wedge \text{form}(\lambda e''.\text{write}(e''))(e')) = m)$

It is now straightforward to see why a paraphrase with *the way ...* is a good test for manner adverbs, provided that the event referred to in both instances is the same (cf. (17) and (28)):

- (30) a. Rebecca write- illegibly \approx The way Rebecca write- be- illegible (Cf. (9a))
 b. $\forall e(\text{agent}(\text{rebecca})(e) \wedge \text{write}(e) \wedge \text{illegible}(\text{form}(\lambda e'.\text{write}(e'))(e))) \leftrightarrow$
 $\text{illegible}(\text{im}(\text{agent}(\text{rebecca})(e) \wedge \text{form}(\lambda e'.\text{write}(e'))(e) = m))$ ▷ Fact

I end with a treatment of the paraphrase in (10a):

- (31) The way Rebecca write- be- painstakingly illegible \rightsquigarrow
 $\text{illegible}(\text{im}(\text{agent}(\text{rebecca})(e) \wedge \text{form}(\lambda e'.\text{write}(e'))(e)) = m) \wedge$
 $\text{painstaking}(\text{im}'(\text{agent}(\text{rebecca})(e) \wedge$
 $\text{effort}(\lambda e'.\text{illegible}(\text{form}(\lambda e''.\text{write}(e''))(e''))(e) = m'))$

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