Measure DP Adverbials, Aktionsart, and Functional Structure

DP adverbials have long posed some vexing analytical challenges, largely because they manifest seemingly contrary nominal and adverbial properties. This paper begins with the observation that certain DP adverbials constitute a natural class distinguished by several puzzling characteristics: obligatorily narrow scope, low structural position, and imposition of a requirement of aspectual homogeneity (that is, cumulativity and divisibility; Moltmann 1991). On the basis of these observations, an argument is constructed that the characteristics of this class constitute evidence that some Aktionsart information is encoded in a verbal functional projection.

The first puzzling characteristic is that some weak DP adverbials — henceforth 'measure DP adverbials'— obligatorily take narrow scope with respect to negation, the subject, and embedding verbs:

(1) a. He didn't sleep an hour.   (¬>*an hour*; **an hour*>¬)
     b. Few students slept an hour.   (*few students*>*an hour*; **an hour*>*few students*)
     c. She wanted to talk several minutes.   (*wanted*>*several minutes*; **several minutes*>*wanted*)

The distribution of measure DP adverbials is also fixed. They cannot front or occur as modifiers of NP:

(2) a. *An hour / several minutes, he didn't sleep.
     b. *his nap an hour / several minutes

In all these respects, they contrast with their PP paraphrases and with other DP adverbials. PPs such as *for an hour* or *for several minutes* allow both scope possibilities in sentences such as those in (1), and can be fronted and modify NPs in contexts such as those in (2):

(3) a. He didn't sleep for an hour.   (¬>*an hour*; *an hour*>¬)
     b. Few students slept for an hour.   (*few students*>*an hour*; *an hour*>*few students*)
     c. She wanted to talk for several minutes. (*wanted*>*several minutes*; *several minutes*>*wanted*)
(4) a. For an hour, he didn't sleep.
     b. his nap for an hour

Other DP adverbials, including strong ones such as *every hour* or *the whole hour,* permit both scope possibilities, and can be fronted and modify NPs:

(5) a. He didn't sleep every day.   (¬>*every day* ; *every day*>¬)
     b. Few students slept every day.   (*few students*>*every day*; *every day*>*few students*)
     c. She wanted to talk every day.   (*wanted*>*every day*; *every day*>*wanted*)
(6) a. Every day, he didn't sleep.
     b. his nap every day

Existing treatments of DP adverbials do not note or explain these facts.

Another puzzling characteristic of measure DP adverbials is that they impose a homogeneity requirement. They occur with states and processes quite naturally (*He lived/danced an hour*) but induce aspectual coercion in accomplishments and achievements (*?He died an hour; ?He walked to the corner an hour*). Though this is typical of measure adverbials generally, it is normally attributed (Dowty 1979, others) to an element such as a preposition. Yet there is no preposition here overtly, and positing null prepositions (Emonds 1976, 1987; Bresnan and Grimshaw 1978; McCawley 1988) would not distinguish measure DP adverbials from PPs. Nor would a special DP-adverbial licensing feature (Larson 1985) suffice here, since it would not explain the low structural position and narrow scope of measure DP adverbials.

These phenomena can receive a unified explanation, however, if measure DPs are introduced by a

verbal functional projection which occupies a fixed position low in the tree, such as the Dur(ative)P of Cinque (1999), and imposes the homogeneity requirement. Syntactically, this accords with Cinque's proposal that adverbs generally are specifiers of functional projections. Semantically, this head takes as arguments a VP and a measure DP adverbial:

(7) $[[[+\textbf{HOMOGENEOUS}]_{\textbf{Dur}}]] = \lambda P_{<s,t>} \lambda Q_{<i,t>} \lambda e . P(e) \wedge Q(\tau (e)) \wedge [t' \subseteq \tau(e) \rightarrow \e' P(e') \wedge \tau (e')=t']$

This permits measure DP adverbials to be interpreted in a fairly natural way as properties of intervals. This property interpretation also explains why they are obligatorily weak and do not QR. The low position of this projection — above VP but below negation, aspect, and the lowest subject position — accounts for their narrow scope and surface syntax. In languages in which the Dur head is overt, it appears to have this kind of semantics — Guyanese Creole *de*, for example, "occurs as a durative aspect marker" (Gibson 1992). This account is further elaborated in light of spatial measure DP adverbials and some specificity facts in English and Turkish; and its relation to the analysis of other DP adverbials is explored.

　　　　True adverbs provide support for this approach. On syntactic grounds, Cinque associates the Dur head with adverbs such as *briefly.* These adverbs also appear to impose a homogeneity requirement, a fact that would be expected in light of the denotation in (7). Thus *briefly* can simply denote the property of brief intervals, and the homogeneity requirement need not be stated separately for each adverb of this class. This simple, first-order denotation for such adverbs conforms to the intuition that functional categories should have higher-order denotations and lexical categories should have simpler ones. This analysis of measure DP adverbials therefore has ramifications for the interpretation of other modifiers. Syntactically, it suggests that Cinque's distinction between "adverb-related" and "DP-related" functional projections may not be absolute. More generally, it lends support to the view that modifiers, like arguments, may be introduced by functional heads.

Selected References

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