Notes on the Thematic Properties of Manner and Subject-Oriented Adverbs

JAVIER GUTIÉRREZ-REXACH

1. Introduction¹

In this paper, I will study some aspects of the thematic and quantificational properties of so-called "manner adverbs" in English and Spanish. This label is not uniformly used in the literature and sometimes groups together several heterogeneous classes of adverbs. On the other hand, it seems that we can arrive at rather different classifications depending on whether our starting point is purely distributional or semantic.²

I will not analyze here in full detail the issue of cross-linguistic variation in the distribution of manner adverbs. This has been the focus of much recent research in the theory of phrase structure, from the pioneering work by Pollock (1989), Chomsky (1991) and Belletti (1990) to more recent contributions such as Cinque (1997) and Alexiadou (1997). Paradoxically, these investigations have not shed much light on the problem of the exact nature and articulation of these adverbs, even though they have been used as a crucial test in the determination of the position and structure of functional categories (specially Infl. and the projections originating from its functional decomposition).

Jackendoff (1972) distinguishes six major classes of adverbs according to their ability to occur in different sentence positions: initial, final or auxiliary (between the subject and the main verb).³ The sentences in (1) - (6) illustrate the contrasts:

- (1) These notes and reflections originated from a seminar on adverbs, tense and aspect at the Department of Linguistics, UCLA (1994). I would like to thank the participants, especially Tim Stowell for their suggestions. In their actual form, these notes reflect my thinking on these issues corresponding to that period. Only a few corrections and modifications have been added.
- (2) Just considering the literature of the early seventies, the difference can be appreciated if one compares the syntactic-based classification in Jackendoff (1972) with the classification in Stalnaker & Thomason (1973), which is semantically motivated.
- (3) See Rochette (1990) and Travis (1988) for a critical examination of Jackendoff's positional classification.

- (1) a. Clumsily(,) John dropped his cup of coffee.
 - b. John clumsily dropped his cup of coffee.
 - c. John dropped his cup of coffee clumsily.
- (2) a. Slowly(,) John dropped his cup of coffee.
 - b. John slowly dropped his cup of coffee.
 - c. John dropped his cup of coffee slowly.
- (3) a. Evidently George read the book.
 - b. George evidently read the book.
 - c. *George read the book evidently.
 - d. George read the book, evidently.
- (4) a. *Completely George read the book.
 - b. George completely read the book.
 - c. George read the book completely.
- (5) a. *Hard John hit Bill.
 - b. *John hard hit Bill.
 - c. John hit Bill hard.
- (6) a. *Simply Albert is being a fool.
 - b. Albert is simply being a fool.
 - c. *Albert is being a fool simply.

The positional classification we arrive at is the following (Rochette 1990):

- Class I: Initial, Aux, VP-final (meaning change) cleverly, clumsily, carefully, carelessly, happily, truthfully.
- Class II: Initial, Aux, VP-final (no meaning change) quickly, slowly, reluctantly, sadly, quietly, frequently.
- Class III: Initial, Aux evidently, probably, certainly, unfortunately, naturally
- Class IV: Aux, VP-final completely, easily, totally, handily, badly, mortally
- Class V: VP-final hard, well, early, fast, slow, terribly
- Class VI: Aux truly, virtually, merely, simply, hardly, scarcely.

Jackendoff also classifies adverbs according to their interpretation:

- 1/ Speaker-oriented adverbs. They occur only in initial or Aux position (class III). They are "understood as relating the speaker's attitude toward the event expressed by the sentence" or "somehow comment on the subject of the sentence" (p.56).
- 2/ Subject-oriented adverbs. They belong to classes I, II and "express some additional information about the subject" (p.57). A sentence like (7) can typically receive the paraphrases in (8) in its subject-oriented interpretation:

- (7) John clumsily spilled the beans.
- (8) a. John was clumsy to spill the beans.
 - b. It was clumsy of John to spill the beans.
- 3/ Manner adverbs. They can belong to classes I, II, IV and V. Sentence (9) is paraphrased as (10) in its manner interpretation:
 - (9) John opened the door slowly.
 - (10) a. The manner in which John opened the door was slow.
 - b. John opened the door in a slow manner.

There are some similarities between subject-oriented and manner adverbs. Some of them occur in the same positions (those belonging to classes I and II). Moreover, adverbs in class I exhibit a systematic association between syntactic position and meaning.

- (11) a. Cleverly, John prepared the exam.
 - b. John prepared the exam cleverly.
 - c. John cleverly prepared the exam.

The manner interpretation is absent in sentence (11a), because the adverb *cleverly* is clearly subject-oriented in sentence initial position. The preferred reading of sentence (11b) is the manner interpretation.⁴ Finally, sentence (11c) is ambiguous between a manner and a subject oriented interpretation.⁵ In light of these similarities, it would be tempting to pursue a totally unified semantic treatment of subject oriented and manner adverbs. But there are also significant differences which prevent us from doing that. Consider the Spanish paraphrases of the sentences in (11):

- (12) a. Inteligentemente, Juan preparó el examen.
 - b. Juan preparó el examen inteligentemente.
 - c. Juan inteligentemente preparó el examen.
 - d. Juan preparó inteligentemente el examen.

In (12a,b) the same interpretations arise as in the English counterparts. Sentence (12d) receives also a manner interpretation. This is perfectly compatible with the English data, since what makes the corresponding English sentence ungrammatical is, following Stowell (1981), the adjacency requirement on case assignment. Sentence (12c) differs from (11c) in not being ambiguous: the adverb *inteligentemente* in (12c) has only a subject oriented reading. Moreover, the sentence is grammatical only if the adverb is focused:

⁽⁴⁾ Some speakers can get a subject-oriented interpretation of the adverb. But in all cases, the intonation shows that the adverb needs to be focused to obtain this interpretation, whereas the manner interpretation is not associated with focus: John prepared the exam CLEVERLY (subject oriented) vs. John prepared the exam cleverly (manner).

⁽⁵⁾ As in the previous case, some speakers can get the subject-oriented interpretation only if the adverb is focused: John CLEVERLY prepared the exam (subject oriented) vs. John cleverly prepared the exam (manner).

- (13) a.* Juan inteligentemente preparó el examen.
 - b. Juan inteligentemente preparó el examen.

What this seems to show is that the overlapping distribution of class I adverbs in English does not provide sufficient ground for unifying them as a semantically homogeneous class, since in other languages they do not have the same distribution and other factors such as focus seem to play an important role.

2. Adverbs and argument structure

In the following I will defend the claim that subject-oriented and manner adverbs differ in their argument structure. I will assume the proposal in Davidson (1967) and Higginbotham (1985) that adverbs are predicates of events. Davidson (1967) suggested that predicates in action sentences contain an additional event argument, besides the one assigned to individuals. The logical form⁶ of sentence (14) should be the one in (15) instead of any of the two alternatives in (16):

- (14) A man walked slowly.
- (15) $\exists e \exists x [man (x) \& walk (x,e) \& slow(e)]$
- (16) a. $\exists x [man(x) \& walk slow(x)]$
- (16) b. $\exists x [man (x) \& walk(x) \& slow(x)]$

One of the advantages of the logical representation in (15) is that it captures the so-called "adverb-dropping inference" property of this class of sentences, illustrated in the following conditional sentence: the antecedent entails the adverbless consequent.

(17) If John walked slowly, then John walked.

Higginbotham (1985) adopts Davidson's theory, generalizing his proposal: all verbs have an event argument e in their θ -grid, not only the action denoting ones. Although the reasons for this move are not specifically stated, it is clear from his discussion that the idea has at least three advantages: (I) Verbs receive a uniform thematic treatment. Higginbotham differs in this point from Kratzer (1995), who claims that only stage-level predicates have an event argument; (ii) modification is treated as conjunction of predicates of events; (iii) differences in adverb meanings are differences in their argument structure. Assuming that all adverbs are predicates with at least one argument in their θ -grid (the event argument), the distinction between subject-oriented and manner adverbs has to be elucidated on the basis of their respective thematic properties.

It seems that the term "subject-oriented" is perhaps misleading, since the adverbs in this class behave more as *agent-oriented*. Consider the following examples:

(18) a. John deliberately sank the boat. b. The boat was deliberately sunk (by John).

Sentence (18a) has a subject oriented interpretation, as the paraphrase in (19) shows:

- (19) It was deliberate of John to sink the boat.
- (6) Technically, the translation language LF is a first order language in which variables range over two sorted domains: individuals and events.

On the other hand, (18b) has no subject oriented interpretation:

(20) *It was deliberate of the boat to be sunk.

In fact, the paraphrase in (19) is also adequate for (18b), showing that the adverb is capable of modifying an implicit subject. We can conclude that the adverb deliberately is agent oriented. Moreover, the sentences in (18) lack the manner interpretation. Hence, it can be proposed that deliberately assigns an agent θ -role (Zubizarreta 1982; Roberts 1988). This hypothesis receives additional support from the fact that subject-oriented adverbs cannot co-occur with expletive or non thematic subjects:

- (21) a. *There deliberately seems to be an arrest.
 - b. *John deliberately seems to be arrested.

The co-occurrence of unambiguous subject-oriented adverbs with inanimate subjects also triggers ungrammaticality:

(22) *The ball {deliberately/carefully/cruelly} rolled down the hill.

The ungrammaticality of (22) arises from the fact that *the ball* is assigned the theme θ -role by *roll down*, and the adverbs in (22) require an agent NP. On the other hand, an adverb like *slowly* is compatible with a theme.

(23) The ball slowly rolled down the hill.

In sentence (23), the adverb can only have a manner interpretation, as shown by the unavailability of the paraphrase in (24):

(24) *It was slow of the ball to roll down the hill.

There are some passive sentences which constitute a potential counterexample to our claim that subject oriented adverbs are agent oriented. Consider the following examples:

- (25) a. The police deliberately arrested Mary.
 - b. Mary deliberately was arrested by the police.
- (26) a. John intentionally seduced Mary.
 - b. Mary intentionally was seduced by John.

In (25a) and (26a), the adverb property is predicated of the sentence agent/subject. But (25b) and (26b) are ambiguous: the intention can be attributed either to the surface subject or to the agent in the *by*-phrase.⁷ The meaning of the subject-oriented interpretation of (25b) is that after a process of deliberation Mary decided to get arrested by the police. In (26b), Mary wanted to be seduced by John. In both cases, the argument *Mary* cannot be considered an inert THEME, since there is an element of

⁽⁷⁾ Native speakers judgements are not so clear cut. For some of them, the agent-oriented interpretation is the only available and the other is very marginal. For other speakers, the situation is the opposite. The same conflict between dialects seems to arise in Spanish. In English, get-passives disambiguate the interpretation, favoring the subject-oriented one, as in Mary got intentionally seduced by John.

volitionality in her behavior, an element introduced by the adverb. It is a well-known fact (Chomsky 1981, etc.) that passives do not assign an AGENT θ -role to the subject position. Nevertheless, considering examples such as (25b) and (26b), it seems that in certain contexts there is an element of volitionality in the THEME argument that makes it a quasi-agent and, as a consequence, it makes also the argument of the by-phrase an instrument of a previous deliberation/intention rather than a pure agent.

In line with the above idea, it is research in thematic theory (Jackendoff 1987; Dowty 1991) that has shown that θ -roles do not seem to be uniform semantic entities and should not be considered as primitives of thematic theory. According to Dowty (1991), more primitive entities called thematic proto-roles can be defined that include all the entailments associated with standard thematic roles. For instance, the Proto-Agent role is associated with volitional involvement, causing an event or state, etc. The argument with most Proto-Agent entailments becomes the subject. In the case of passives, the subject is the argument with most Proto-Patient entailments. In the sentences in (27), Mary is associated with most of the entailments of the Proto-Patient θ -role:

(27) a. Mary was arrested by the police. b. Mary was seduced by John.

If an adverb holding some Proto-Agent entailments (an agent oriented adverb) is added to the above sentences, Mary will be then associated with some Proto-Patient and some Proto-Agent entailments. Our former claim that agent-oriented adverbs assign an agent θ -role can be relativized, by proposing that agent-oriented adverbs associate with one of their arguments a set containing some Proto-Agent entailments. Consequently, they have a theta-grid with two arguments <1,2>, where 1 is the event argument and 2 is the Proto-Agent argument.

Stowell (1991) studies the syntactic behavior of a class of adjectival predicates involving the attribution of mental properties (MP adjectives). Examples of MP adjectives are *stupid*, *mean*, *nice*, *kind*, *skillful*, *generous*, etc. Stowell shows that these adjectives have two arguments: an individual denoting argument to which they assign the MP θ -role, and an optional action-denoting argument to which they assign the event θ -role. MP adjectives differ from other adjectives in argument structure. For instance, adjectives such as *tall*, *handsome*, *blond*, *old*, *green*, etc. attribute physical properties (PP) and are strictly monadic (they only take an individual-denoting argument). Other adjectives like *famous*, *powerful*, *rich*, attribute other individual-level properties (what we can call "social properties" (SP)) and do not take event arguments either. Neither PP adjectives nor SP adjectives can incorporate to an affixal *-ly* head in order to form adverbs:

(28) *handsomely, *greenly, *oldly, *richly, *famously.

The same generalization holds in Spanish with respect to the affix -mente, where the following adverbs are ill-formed:

(29) *bellamente, *verdemente, *viejamente, *ricamente (in its non metaphoric sense) and *famosamente.

These facts are consistent with our claim that adverbs are predicates of events. Since PP and SP adjectives (or predicates in general) lack an event argument in their θ -grid, they cannot function as adverbs. MP adjectives can function as adverbial predicates of the agent-oriented type because they have the same argument structure.

Turning back to the agent-oriented/ manner ambiguity in adverbs, we are now in a position to defend the idea that it is a genuine lexical ambiguity (a difference in argument structure). Consider a famous example analyzed in McConnell-Ginet (1982):

(30) Lisa rudely departed.

McConnell-Ginet proposes positing an extra argument place in the verb *depart*, under the manner reading, and the adverb fills this argument position. Within the event-predicational theory of adverbs that is being adopted here, this formalization is no longer possible. Adverbs cannot be treated as arguments and as predicates at the same time. The simplest alternative would be the following: under the agent-oriented interpretation, adverbs denote relations between an event and a participant (agent) in this event, i.e., they are dyadic predicates; under the manner reading, they are monadic and take only an event argument. Thus, we would have the following LFs:

- (31) a. Manner reading: $\exists e[depart (e, Lisa) \& rude (e)]$
 - b. Agent-oriented reading: \(\frac{1}{2} \) \(\text{depart (e, Lisa) & rude (e, Lisa) } \)

This suffices for our current purposes. Nevertheless, the distinction can be made more fine-grained from a semantic point of view if we go more intensional and relativize the predicates to properties, as proposed in Higginbotham (1989). This seems even natural because we may wonder what it means for an event to be rude or, in other words, whether "rudeness" is not an absolute property of events but rather something we predicate of them in comparison with other similar events. In (30) we say that Lisa rudely departed because she slammed the door or she did not say goodbye. We are establishing an implicit comparison with what we consider polite to do in a departure. A plausible LF that takes these considerations into account, would be as follows:

(32) Manner reading: ∃e[depart (e, Lisa) & rude (e∃e'∃x[depart(e', x)])

In the above LF representation the property of being rude is relativized to the set of events e'such that e' is a departure event in which some individual participates. Lisa is considered to be rude in comparison with the standard of rudeness in these situations.

- (8) I depart here from Stowell (1991) who considers that SP adjectives like *important* "can be predicated of either an individual or an event, but they can never take both types of arguments simultaneously" (p.112). In my view, *important* can behave like an MP adjective in taking an event argument and an individual-denoting argument which can be implicit, as (ib) shows:
 - (i) a. It is important for us to win the elections.
 - b. It is important to win the elections [PRO to save our country].

In addition, important can also behave as a SP adjective, taking only an individual-denoting argument:

(ii) a. John is important in his job. b.*John is important to win the elections.

3. Adverbs and Manners

From the discussion in previous pages, it is clear that agent-oriented and manner adverbs do not belong to the same class. But this is not the end of the story, since we can also argue that manner adverbs, when this term is used in its broadest sense, do not constitute a single category either. Firstly, there are certain selectional restrictions which yield the result that not every verb can be modified by manner adverbs in an unrestricted fashion, as the examples below illustrate:

- (33) a. *Lisa walks honestly / cruelly.
 - a'. *Lisa camina honestamente / cruelmente.
 - b. *Lisa knows carefully / rudely / frequently.
 - b'. *Lisa sabe cuidadosamente / groseramente / a menudo
 - c. *Lisa sleeps furiously / ironically.
 - c'. *Lisa duerme furiosamente / irónicamente.
 - d. *Lisa behaves silently / quickly / partly.
 - d'. *Lisa se comporta silenciosamente / rápidamente / en parte.

These selectional restrictions were observed for the first time in Chomsky (1965). In the Principles and Parameters model of generative grammar, there are not selectional rules available to rule out the sentences in (33). Thus, it could be posited that the above verbs select differential projections under which the adverbs are generated. One possible alternative would be to claim that pragmatic factors are coming to play. But the fact that certain predicates select only for certain adverbs cannot be considered completely a matter of how the speaker views the world. Consider, for instance, the verb behave or its Spanish correlate comportarse. One can behave well (bien), bad (mal), carefully (cuidadosamente), but not frequently (a menudo), partly (en parte), etc. Some thematic and LF-syntactic factors must be operating.

Recall that we are treating modification as conjunction of predicates at LF. But there are two additional conditions for A to satisfy in order to be able to modify B:

- 1/ Syntactic condition (Zubizarreta 1987): Sisterhood. A modifies B in the context [C...A...B...] iff C immediately dominates A and B, C is a projection of B, and B is not a head.
- 2/ Thematic condition (Higginbotham 1985; Zubizarreta 1987): θ -identification. If A is a modifier with arguments $x_1,...,x_n$, then for every x_i ($1 \le I \le n$), B or the head of B contains an argument variable y with index j and x is assigned the value j.

Let us assume that subject-oriented adverbs and "pure" manner adverbs (the individual-level predicates belonging to classes I, II and V) are generated as adjuncts to VP: [$_{\rm VP}$ Adv VP]. We may say that these adverbs can modify the verb, since they satisfy condition 1.10 To obtain a proper modification configuration, the thematic condition has to be satisfied: every argument in the θ -grid of the adverb must be

⁽⁹⁾ My formulation is more technical than theirs, but preserve the essence of the original proposals.

⁽¹⁰⁾ The syntactic condition would also be satisfied under the assumption that there is no adjunction and that all adverbs occupy specifier positions, as claimed by Sportiche (1994).

identified with one argument of B. Consider again the sentences in (26), repeated now as (34):

- (34) a. John intentionally seduced Mary.
 - b. Mary intentionally was seduced by John.

Intentionally is an unambiguous agent-oriented adverb. Thus, it has two arguments in its θ -grid: the event argument and an individual-denoting argument satisfying a group of Proto-Agent entailments (those associated with the content of the predicate intentional). From the assumptions spelled out previously, we claim that intentionally modifies the VP, so either Mary or John can be identified with the argument x of the adverb from a structural point of view. The event argument e of intentionally is identified with the event argument of seduced, and the individual-denoting argument of the adverb is assigned the same index I of the argument of seduced which satisfy the Proto-Agent entailments carried by x. In (34a), x is identified with the index of John, and in (34b) it can be identified with John or Mary, as seen before.

The ungrammaticality of some of the examples in (33) may be explained in terms of failure of θ -identification. In (33a,a'), the argument x of the adverbs honestly (honestamente), cruelly (cruelmente) can be identified only with an argument y of walk (andar) satisfying the relevant Proto-Agent entailments. Since the intersection of the Proto-Agent entailment set of the two adverbs is empty, θ -identification fails. Similar arguments can be built for *know carefully / rudely, *sleep furiously /ironically or *behave silently and their respective Spanish counterparts. In general, genuine or pure manner and agent-oriented adverbs can only fail to satisfy θ -identification of the individual-denoting arguments.

The rest of the cases illustrated in (33) above deserve a more sophisticated explanation. They involve two different kinds of adverbs. I will call degree adverbs lexical items like partly (en parte), completely (completamente), gradually (gradualmente), etc. Other adverbs such as frequently (frecuentemente), often (a menudo), rarely (raramente) are Aktionsart adverbs. Both classes refer to aspectual properties of the event, so failure of θ -identification will be related to differences in the event argument of the adverb and the event argument of the verb.

In English, degree adverbs have a more reduced distribution than Aktionsart adverbs. They belong to class IV: they can occur only in Aux and VP-final position. Aktionsart adverbs belong to class II: they occur in initial, Aux and VP-final position. In Spanish, we also find a parallel difference, since degree adverbs occur only before or after the verb whereas Aktionsart adverbs behave more freely.

- (35) a. Frecuentemente Juan lee el libro. Frequently John read the book
- b. Juan frecuentemente lee el libro.
- John read the book c. Juan lee frecuentemente el libro.
 - d. Juan lee el libro frecuentemente.

⁽¹¹⁾ I follow Koopman & Sportiche (1988), Kitagawa (1986), etc., in assuming that subjects originate inside VP.

- (36) a. *Completamente Juan leyó el libro.

 Completely John read the book
- b. *Juan completamente leyó el libro.
- c. Juan leyó completamente el libro.
- d. Juan leyó el libro completamente.

Informally, the relevant property of degree adverbs, both in English and Spanish. is that they have to occur "close enough" to the main verb. 12 Another significant property is that they require the presence of an object (an internal argument). This is why they combine mainly with predicates that affect their internal argument, such as build (construir), destroy (destruir), complete (completar), improve (mejorar), etc. They can also occur with predicates that "incorporate the internal argument" (Zubizarreta 1987), like eat (comer), shave (afeitarse), etc.. Finally, these adverbs can combine with predicates whose internal argument is a non-stative experiencer, such as amuse (entretener), interest (interesar), bore (aburrir). In sum, degree adverbs require that the internal argument of the verb is affected¹³ for proper θ -identification. The structural condition on modification is satisfied by adjunction of the adverb to Agr-Object P.14 The reason for this claim is that case and agreement features of the internal argument are checked under this projection by Spec-Head agreement. Since identification is syntactically a type of checking, 15 this is the minimal projection in the dominance hierarchy where it can take place. Evidence for this claim is found in languages with overt object agreement, like Italian. Consider the following sentence from Bertinetto & Squartini (1993):

- (37) a. La situazion<u>e</u> è migliorat<u>a</u> gradualmente. The situation has improved gradually
 - b. Pippo ha risolto il puzzle gradualmente. Pippo has solved the puzzle gradually

Migliorare (improve) is an unaccusative verb (Burzio 1986), as shown by the presence of the auxiliary essere. The internal argument ends up in the subject position at S-structure, but its features are checked at an earlier stage of the derivation at Agr-O.P., triggering past participle agreement (Kayne 1989). The θ -identification features for adverbial modification are also checked at this projection.

Affectedness is not a privative notion, in the sense that there are degrees of affect-edness of the relevant entities. Verbs such as *know*, *need* or *desire*, do not affect their objects at all. Others, like *memorize*, *translate*, *solve* affect it only in an indirect way (whose exact nature exceeds the purposes of this paper). Finally, *destroy*, *read*, *disperse*,

- (12) Notice also the following contrast from Jackendoff (1972: 75):
 - (i) a. *George completely has/will read the book.b. John has/will completely read the book.
- (13) See Tenny (1987), Zubizarreta (1987), for a more detailed explanation of the notion of affectedness.
 - (14) In the sense of Chomsky (1989) and subsequent work.
 - (15) The semantic effect would be identity in value assignment under the relevant function.

etc. exhibit total affectedness. Verbs that do not affect their objects cannot be modified by degree adverbs:

- *Iohn entirely needs/desires the cake.
 - *Iohn needs/desires the cake entirely.

Verbs that affect their internal argument only in part can occur with degree adverbs, but there is an important decrease in acceptability in "long distance modification" contexts, as shown in Zubizarreta (1987: 83). Total affectedness verbs can be long-distance modified. The sentence in (39) shows this contrast:

- John partially destroyed the city = 'John destroyed part of the
 - b. The police entirely dispersed the crowd = 'the police dispersed the entire crowd'
 - c. John completely read/wrote the book = 'John read/wrote the entire book'
 - d. ?? John completely discussed/memorized/understood the book.

A similar phenomenon is found in Italian. Only Italian total affectedness verbs can be modified by di parecchio (by a lot). Consider the following contrasts, from Bertinetto & Squartini (1993):

- (40) a. La situazione è migliorata di parecchio.
 - *Pippo ha risolto il puzzle di parecchio.

In French, the adverbs beaucoup and peu modify in long-distance configurations the same class of verbs, as the following examples from Obenauer (1984) show:

(41) a. Max a beaucoup vendu de livres. b. *La critique a peu aprécié de films Max has many sold of books

The critic has few appreciated of pic-

'Max has sold many of the books'

'The critic appreciated few pictures'

Aktionsart adverbs such as frequently, often, seldom, etc., interact more straightforwardly with the aspectual properties of verbs, as observed in Vendler (1967), Parsons (1990), and many other studies. For instance, state-denoting verbs like know cannot be modified by frequently, slowly, etc. This interaction seems to be lexical in nature, so a natural proposal would be that Aktionsart adverbs are adjuncts to VP and that they impose some aspectual conditions for θ -identification with the event argument of the verb. It follows from this hypothesis that manner adverbs and Aktionsart adverbs are closely related, since both of them are adjoined to (modify) the VP. The only difference would reside in the nature of θ -identification. They impose different conditions on the event argument. This prediction is confirmed by incorporation data in Greek. Rivero (1992) observes that only manner and Aktionsart adverbs in Greek incorporate to a head noun, whereas time adverbs and other related adverbs do not incorporate. Nevertheless, her classification seems to be different from ours, so some asymmetries may arise. On the other hand, Aktionsart adverbs also interact with properties of the subject and the object (Verkuyl 1989, Hornstein & Schmitt 1993). As a consequence, an alternative hypothesis could be that they are adjoined to an Aspectual Phrase or to the ZeitPhrase, in the sense of Stowell (1993). A more detailed comparison of these alternatives goes also beyond the scope and limitations of this paper.

4. Manner adverbs and generic quantification

From Lewis (1975) to Kratzer (1995) and Diesing (1992), it is a well-known and widespread assumption in the unselective-binding literature, that certain adverbs like *generally, commonly*, and perhaps many others (*always, often*, etc.) behave as quantifiers. The specific property of adverbs of quantification is their ability to bind all the variables in their scope, i.e., they are unselective binders. We consider now how middle constructions interact with manner adverbials and generic quantification.

Middle constructions (Keyser & Roeper 1984, Keyser & Hale 1987; Jaeggli 1986) require a manner adverb to be licensed in general:

(42) a. Water boils easily.

b. *Water boils.

(43) a. The speech transcribes well.

b. *The speech transcribes.

Middles receive a generic interpretation, as the ungrammaticality of the sentence in (43) shows:

(44) a. *The water boils easily.

b. *Water is boiling easily.

The speech transcribed well yesterday.

The definite article in (44a) is incompatible with the generic reference of water. The progressive and the definite past tense are not allowed either, because they are not compatible with the atemporal or the habitual interpretation expected. Generic interpretation can be predicted by positing a generic operator in the LF representation of these constructions. This operator surfaces normally as an adverb of quantification:

(45) a. This car generally drives well. b. Ice always melts quickly.

The systematic association between generic interpretation and the occurrence of a manner adverb is not necessarily restricted to middles. As Keyser & Hale (1987) observe, a wider class of verbs in Romance behaves similarly. Consider the following contrast in Spanish:

- (46) a. Los planetas se ven fácilmente.

 Planets are seen easily
 - b. Esta distancia se recorre rápidamente. This distance is covered quickly
- (47) a. *Los planetas se ven. b. *Esta distancia se recorre.

Other adverbs can make the sentences in (47) grammatical, but only explicit adverbs of quantification or manner adverbs yield a generic interpretation. The sentences in (48) lack a generic reading:

- (48) a. Los planetas se ven desde aquí.

 Planets are seen from here
 - Esta distancia se recorre en autobús.
 This distance is covered by bus

Both English middle constructions and Spanish sentences with middle se have in common the absence of an argument to which an agent θ -role is assigned, besides the already mentioned generic interpretation. Neither a by-phrase nor a purpose clause can be attached to these constructions:

- (49) a. *The speech transcribes well by me.
 - b. *This car drives well to feel safe.
- (50) a. *Los planetas se ven fácilmente por mí.

 Planets are seen easily by me
 - b. *Esta distancia se recorre rápidamente para llegar a casa.

 This distance is covered quickly to arrive home

Since agent-oriented adverbs need to be identified with a Proto-Agent individual denoting argument, they cannot occur in a middle construction:

(51) *Bread cuts carefully.

The same prediction holds in Spanish, where we find a contrast between two adverbs: the manner adverb *con cuidado* (carefully), and the agent-oriented one *cuidadosamente* (carefully). Only the first one occur in middle sentences:

- (52) a. Esta distancia se recorre con cuidado.
 - b. Esta distancia se recorre cuidadosamente.

The fact that in middle constructions an agent θ -role is not assigned does not mean that any Proto-Agent entailment is absent. Keyser & Hale (1986: 11) note that "a 'semantic' or 'implicit' agent is inescapably present in the middle construction, since it is present in the Lexical Conceptual Structure of the verb." In less formal terms, in a middle construction some Proto-Agent entailments have to be associated with the meaning of the verb, but an explicit (or implicit) agent argument is not needed. Here is where manner adverbs come to play. Recall the LF representation that was proposed in (32) for the manner interpretation of the adverb *rudely*. A similar one can be adopted for *easily*:

(53) easily :=
$$\lambda P \lambda e[P \& easy (e, \lambda e' \lambda x_1,...,x_n[P (e', x_1,...,x_n)])$$

The only difference between (32) and the general logical form for manner adverbs in (53) is that it can be assumed that the variable x is bound in (32) by existential closure (Heim 1982). Thus, the adverb *easily* compares an event e with the set of other events e' of which the property denoted by P is predicated. By establishing a comparison, all possible participants $x_1,...,x_n$ in alternative events e' are recovered too. The LF representation of (54) would be (55):

- (54) This pot breaks easily.
- (55) $G_{e,v} \exists_x [pot (x) \& break (e,x) \& easy (e, \lambdae'[break (e',x,y)])]$

This LF captures all the facts regarding genericity and middle constructions that we have been discussing so far. The verb *break* has three arguments in its θ -grid: the event argument e, an agent argument y and a theme argument x. The process of middle formation involves the deletion of the agent θ -role from the predicate argument structure of the verb (Keyser & Hale 1986). This is shown in the predication structure: *break* (e, x). Nevertheless, this argument-deletion process is compatible with the preservation of the minimal agent entailments in the denotation of *break*, via modification by a manner adverb. Since what is intrinsic to these adverbs is, in this case, the comparison with all other breaking events, the entailments associated with *break* in *this pot breaks* are preserved when its event argument is identified with the event argument in the θ -grid of *easily*. The generic operator is introduced under TP (generic or sometimes habitual present) and it unselectively binds all variables not previously bound. The variable x is bound by the determiner *this*, the event variable is naturally bound by G, and y is also bound by G to avoid a violation of the Prohibition Against Vacuous Quantification (Kratzer 1995).

Manner adverbs are the only class of adverbs that are adequate for this sort of recoverability of thematic entailments, because other adverbs either do not recover them (temporal adverbs, locatives) or require identification with the agent argument (agent-oriented adverbs). Only manner adverbs can recover thematic entailments without requiring θ -identification with the participants in the event.

5. Conclusions

In this paper, it has been argued that manner and subject-oriented adverbs differ in their thematic structure. Subject-oriented adverbs should be considered agent-oriented and carry an agent argument in their θ -grid. Some arguments for a more fine-grained classification of manner adverbs have been also presented, distinguishing degree adverbs, aktionsart adverbs and pure manner adverbs on the basis of a theory of θ -identification and sisterhood adjunction. Finally, a few critical aspects of middle constructions have been explained, making a crucial use of the θ -identification properties of manner adverbs again.

6. References

Alexiadou, A., 1997, Adverb Placement, Amsterdam: John Benjamins.

Belletti, A., 1990, Generalized Verb Movement, Torino: Rosenberg and Sellier.

Bertinetto, P. and M. Squartini, 1993, Talk at the Cortona Conference on Tense and Aspect.

Burzio, L., 1986, Italian Syntax, Dordrecht: Kluwer.

Chomsky, N., 1965, Aspects of the Theory of Syntax.

_____, 1981, Lectures on Government and Binding, Dordrecht: Foris.

______, 1991, "Some Notes on the Economy of Derivation and Representation" in *Principles and Parameters in Comparative Grammar*, ed. R. Freidin, Cambridge, Mass.: MIT Press.

Cinque, G., 1997, Adverbs and Functional Heads (forthcoming in Oxford University Press).

Davidson, D., 1967, "The Logical Form of Action Sentences" in *The Logic of Decision and Action*, ed. N. Rescher, Pittsburgh: Univ. of Pittsburgh Press, 81-95.

Diesing, M., 1992, Indefinitess, Cambridge, Mass.: MIT Press.

```
Dowty, D., 1991, "Thematic Proto-Roles and Argument Selection", Lg 67, 547-617.
Higginbotham, J., 1985, "On Semantics", LI 16, 547-593.
       , 1989, "Elucidations of Meaning", Linguistics and Philosophy 12, 463-517.
Hornstein, N. & Schmitt, 1993, Talk at the Cortona Tense and Aspect Conference.
Jackendoff, R., 1972, Semantic Interpretation in Generative Grammar, Cambridge, Mass.: MIT
     Press.
     __, 1987, "The Status of Thematic Relations in Linguistic Theory", LI 18, 369-411.
Jaeggli, O., 1986, "Passive", LI 17, 587-622.
Keyser, S. and K. Hale, 1986, "Some Transitivity Alternations in English" in Lexicon Project
     Working Papers, vol. 7, MIT.
& 1987, "A View from the Middle", Lexicon Project Working Papers, vol. 10, MIT.
& T. Roeper, 1984, "On the Middle and Ergative Constructions in English", LI 15, 381-
     416.
Kayne, R., 1989, "Facets of Romance Past Participle Agreement", in Dialect Variation and the
     Theory of Grammar, ed. P. Benincà, Dordrecht: Foris, 85-103.
Kitagawa, Y., 1986, Subjects in Japanese and English, Ph.D. diss, U.Mass.
Koopman, H. and D. Sportiche, 1988, "Subjects", ms., UCLA.
Kratzer, A., 1995, "Stage-level and Individual-Level Predicates", in The generic book, eds. Greg
     Carlson and Francis Pelletier, Chicago: Chicago University Press, 125-175.
Lewis, D., 1975, "Adverbs of Quantification" in Formal Semantics of Natural Language, ed. E.
     Keenan, Cambridge: Cambridge Univ. Press, 1-15.
McConnell-Ginet, S., 1982, "Adverbs and Logical Form", Lg 58, 144-184.
Obenauer, H.G., 1984, "On the Identification of Empty Categories", The Linguistic Review 4,
     153-202.
Parsons, T., 1990, Events in the Semantics of English, Cambridge, Mass.: MIT Press.
Pollock, J. Y., 1989, "Verb-movement, UG and the Structure of IP", LI 20, 365-424.
Rivero, M. L., 1992, "Adverb Incorporation and the Syntax of Adverbs in modern Greek",
     Linguistics and Philosophy, 15. 289-331.
Roberts, I., 1988, "Thematic Minimality", Rivista di Grammatica Generativa 13, 111-137.
Rochette, A., 1990, "The Selectional Properties of Adverbs", CLS 26-I.
Sportiche, D., 1994, "Adjuncts and Adjunction", ms., UCLA.
Stalnaker, R. and R. Thomason, 1973, "A Semantic Theory of Adverbs", LI 4, 195-220.
Stowell, T., 1981, Origins of Phrase Structure, Ph.D. diss., MIT.
        , 1991, "The Alignment of Arguments in Adjective Phrases" in Syntax and Semantics,
     Vol. 25: Perspectives on Phrase Structure, New York: Academic Press, 105-135.
      __, 1993, "Syntax of Tense", ms., UCLA.
Tenny, C., 1987, "The Aspectual Interface Hypothesis", MIT Lexicon Project Working Papers.
Travis, L., 1988, "The Syntax of Adverbs", McGill Working Papers in Linguistics, 280-310.
Vendler, Z., 1967, "Verbs and Times", in Linguistics in Philosophy, New York: Cornell Univ.
     Press.
 Zubizarreta, M.L., 1982, On the Relation of the Lexicon to Syntax, Ph.D. diss., MIT.
    _____, 1987, Lexical Relations in the Lexicon and in the Syntax, Dordrecht: Foris.
```