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Unaccusative or Unergative? Verbs of Manner of Motion[#]
(Paper submitted)

The Unaccusative Hypothesis claims that intransitive verbs fall into two subclasses--unaccusative verbs and unergative verbs, each associated with a particular underlying syntactic structure (Perlmutter 1978). This hypothesis is based on a number of linguistic phenomena (called unaccusative diagnostics) that differentiate between the two subclasses of verbs (Levin & Rappaport-Hovav 1995:3). Thus, for instance, unaccusatives select the auxiliary verb *essere* in Italian, whereas unergatives select *avere* (Burzio 1986; Perlmutter 1989). This difference in the behaviour of the two subclasses of intransitive verbs has been linked to differences in their underlying syntactic structure (Perlmutter 1978). Within the GB approach, unaccusatives are posited to have a direct object (or direct internal argument) and no subject, while unergatives have a subject (or external argument) but no direct object at d-structure (Levin & Rappaport-Hovav 1995:3). The unaccusative-unergative dichotomy has also been linked to differences in the *semantic* properties of these verbs and the constructions in which they appear. The unaccusative behaviour of a subclass of intransitive verbs with respect to a number of diagnostics can be linked to factors such as agentivity or telicity, without positing a direct object at some level of syntactic representation (Van Valin 1990; Dowty 1991; Wechsler 1996). A third approach is proposed by Levin & Rappaport-Hovav (1995) who claim that, although the difference between unaccusative and unergative verbs is *syntactically* encoded in terms of d-structure configurations, it is also *semantically* determined (as originally assumed by the Unaccusativity Hypothesis as well).

The class of agentive manner of motion verbs poses an interesting problem with respect to the Unaccusativity Hypothesis. This class of verbs exhibits properties of both unaccusative and unergative verbs. Any approach that posits a syntactic difference between unaccusatives and unergatives would have to assume that each verb in this class has two argument structures, one of which projects the d-structure configuration corresponding to unaccusatives while the other projects the unergative d-structure configuration. Levin & Rappaport-Hovav (1995) propose such an analysis, and formulate a lexical argument-structure changing rule which derives unaccusatives from unergative manner of motion verbs. The semantic approach, on the other hand, does not posit two argument structures since unaccusative behaviour is not linked to a particular type of syntactic encoding. Rather, the variable behaviour of this class of verbs is explained in terms of differences in the interaction of the lexical semantic properties of the verbs with the semantics of the constructions in which they occur.

In this paper, we examine the arguments provided by Levin & Rappaport-Hovav in favour of a lexical rule for this class of verbs and conclude that these arguments are not well-supported empirically. While we do not attempt to elaborate an alternative semantic account (see Wechsler 1996 for such an account), our observations suggest that an account relying on semantic factors alone can provide a simpler and more adequate explanation of the unaccusative behaviour of agentive manner of motion verbs.

The class of agentive verbs of manner of motion such as *walk*, *run*, *hobble* etc. are unergative with respect to a number of diagnostics when used in isolation (1). They occur in

constructions that typically select unergative verbs such as resultatives with a fake reflexive or a non-subcategorised direct object; they are found in the X's way construction; they are typically not found in the causative alternation; and, in Italian, they select the auxiliary *avere* in the absence of a directional phrase (L&RH 1995:185-189). However, when used with directional phrases, these verbs behave like unaccusatives (2). They select the *essere* auxiliary in Italian, appear in the unaccusative resultative pattern, and occur in causative constructions (L&RH, pp.186-188):

(1)   They swam.   unergative

(2)   They swam apart.   unaccusative

Within the GB approach, the surface subject in (1) is also a deep structure subject. However, in (2), the surface subject starts out as a direct object at d-structure which then moves to the subject position at s-structure in order to get Case (since unaccusative verbs do not assign Case, following Burzio (1986)).

In order to reconcile the variable behaviour of this class of verbs with their approach, L&RH propose that each of these verbs is basically unergative, but can undergo a lexical meaning shift such that the verb becomes unaccusative in the presence of a directional phrase. Since L&RH do not provide an explicit representation of the rule that induces this shift, we assume that the single external argument is "demoted" to a direct internal argument, and an additional directional argument is added to the argument structure of the verb (a_1 refers to the external argument; a_2 and a_3 are internal arguments):

$$< a_1 <...>> \longrightarrow <...< a_2, a_3>>$$

Such a rule is restricted to the class of agentive manner of motion verbs and does not allow other unergative verbs (e.g. *laugh*, *shout*) to be an input to this rule.

We propose that a semantic account would be more satisfactory for the following reasons:

- an analysis that does not posit a lexical shift is more parsimonious,
- there are counterexamples to the lexical shift analysis,
- semantic factors play a role in inducing unaccusative behaviour which, if we still want to retain a lexical shift analysis, would restrict the application of the lexical rule even further on the basis of semantic criteria.

This, in effect, reduces to a semantic approach.

In order to substantiate our claim that a lexical shift analysis is not necessary, we shall review and discuss four main kinds of data that L&RH present:

a) causative constructions,
b) the resultative construction,
c) the X's way construction,
d) the auxiliary selection data.

Causative constructions
Agentive manner of motion verbs in isolation do not causativize, whereas they are well-formed in the presence of a directional phrase (p.188):

(3)   ??The general marched the soldiers

(4)   The general marched the soldiers to their tents.

(5)   *We ran the mouse.

(6)   We ran the mouse through the maze.

L&RH suggest that the causativization operation is possible only because the external argument is no longer present (as a consequence of the lexical shift), and thus allows an

external argument to be "added" after the verb is causativized (see also Pinker 1989). Since it is rule-governed, this process is predicted to be *productive* (L&RH, p.188). Thus if all agentive manner of motion verbs can undergo a lexical shift in the presence of a directional phrase, they should *all* fit the input conditions for causativisation. However, the constructions below are clearly ill-formed:

(7)   *John swam/ran/danced the children apart.

(8)   *She jumped/leapt the dog clear of the oncoming vehicle.

(9)   *The general trudged/ambled the tired soldiers to their tents.

(10)   *We sashayed/swaggered the models along the catwalk.

Such counterexamples suggest that the causativised constructions in (4) and (6) are not products of a rule-governed process. Furthermore, even where such verbs do have causative counterparts, their occurrence is influenced by factors such as the telicity of the directional phrase in the construction. Rosen (1996:198-99) points out that causativisation is blocked when the directional phrase in the VP is atelic: (*in 15 minutes* and in *a split second* are felicitous only with telic constructions):

(11)   a.   *Bill danced Sue along the hall in 15 minutes.
        b.   Bill danced Sue around the room in 15 minutes.

(12)   a.   *The trainer jumped the horse around the corral in a split second.
        b.   The trainer jumped the horse over the fence in a split second.

In order to account for such data, the lexical shift account would then have to be restated to include this special aspectual condition, a move that reduces to the semantic approach.

The resultative construction argument
L&RH (p.186-87) suggest that *swim* in the fake reflexive resultative pattern (13) is unergative but in the unaccusative resultative pattern in (14), it is unaccusative. However, when followed by a change of state rather than a change of location result phrase, it is ill-formed in the unaccusative resultative construction in (15) :

(13)   Don't expect to swim yourself sober.

(14)   They slowly swam apart.

(15)   *Don't expect to swim sober.

According to L&RH, agentive manner of motion verbs are ill-formed in the unaccusative resultative pattern with a change of state result phrase because they are the output of a lexical rule that adds a *directional* phrase to the argument structure of the verb. Hence the agentive manner of motion verb can only appear with a result phrase denoting a change of *location*, and not a change of *state*.

However, an alternative explanation for the ill-formedness of (15) could be traced to the selectional restrictions of the verb with respect to that of the result phrase (Wechsler 1996). Motion verb designate a "locative goal" as a canonical result rather than a change of state (1996:2). Conversely, verbs of change of state do not usually result in a change of *location*, and should be incompatible with directional result phrases:

(16)   *The water froze out of the ice box. (the water got out of the ice box by freezing)

(17)   *The glass broke onto the floor. (the glass got onto the floor as a result of breaking)

Clearly, the ill-formedness of (16) and (17) does not entail that verbs of change of state have undergone a lexical shift. Rather, the selectional restrictions of the verb determine whether or not it is compatible with a given result phrase.

A second argument in favour of a "selectional restrictions" account has to do with *roll* verbs. Verbs such as *roll* and *bounce* belong to a class of manner of motion verbs that can be agentive or non-agentive:

(18)   The log rolled down the hill.

(19)   John rolled down the hill. (ambiguous between agentive and non-agentive readings)

When they take an animate, agentive argument, they are unergative, and in their non-agentive sense, they are unaccusative (L&RH, p.208). However, their unaccusative behaviour is not linked to the presence of a directional phrase since they can causativise even in the absence of a directional phrase--*The bowler rolled the bowling ball (into the room)* (p.189). L&RH suggest that such verbs are inherently unaccusative in their non-agentive sense, and do not undergo a lexical shift that derives the unaccusative verb from the unergative verb. Rather, they have two unrelated lexical semantic representations--one unaccusative and other unergative.

If the directional phrase added by the lexical shift is the sole reason for the incompatibility of agentive manner of motion verbs with change-of-state result phrases, then verbs such as *roll* or *bounce* which do not undergo a lexical shift should be compatible with such change-of-state result phrases. However, as (20) and (21) show, they can only occur with change of location result phrases:

(20)   The ball rolled to the door/ *to pieces.

(21)   The box slid across the ice/*smooth.

These examples thus support the selectional restrictions hypothesis rather than a lexical rule.

X's way construction
The sentence in (22) implies a single jump, whereas (23) strongly implies a series of jumps (Jackendoff 1990:224). L&RH suggest that this has to do with the unaccusative classification of *jump* in (22), as opposed to its unergative classification in (23):

(22)   Willy jumped into Harriet's arms.

(23)   Willy jumped his way into Harriet's arms.

The unaccusative use, they suggest, "*mus*t never involve an iteration of events" (emphasis theirs) (p.201) as opposed to Jackendoff (1990:224) who claims only that (22) "*can* consist of a single jump" (emphasis mine). The following sentences with agentive manner of motion verbs are all counterexamples to L&RH's stronger claim. They can all be interpreted as involving a series of events (as well as a single event):

(24)   Willy hopped across the room.   (several hops)

(25)   Harriet wriggled towards the door.   (many wriggles)

(26)   The drunk stumbled down the steps.   (several stumbles)

(27)   The child jumped across the puddles.   (many jumps)

We suggest that the differences in interpretation have to do with the semantics of the verb and/or that of the directional phrase rather than differences in the verb's argument structure.

The auxiliary selection argument
In Italian, the selection of the auxiliary *essere* (as opposed to *avere*) by intransitive verbs is taken to be an unaccusative diagnostic. If the addition of any directional phrase induces a shift in the verb from unergative to unaccusative, then the addition of directional compound prepositions in Italian should induce this lexical shift as well. We would predict that such verbs would select the auxiliary *essere*. However, this is not the case. Agentive manner of motion verbs (e.g. *correre*, *camminare*) can be used with compound prepositions such as *fino a* ("up

to") or *verso a* ("towards") which express telic and atelic paths respectively (Di Tomaso 1996). With the verb *camminare* ("walk"), the auxiliary *avere* is selected with both *fino a* and *verso a*, while with the verb *correre*, *avere* is preferred with *verso a*, and *essere* is selected with *fino a* (Di Tomaso 1996:15-16):

(28) Giorgio ha/*è camminato verso l'università
      'Giorgio has/is walked towards the university.'

(29) Giorgio ha/*è camminato fino all'università
      'Giorgio has/is walked upto the university.'

(30) Giorgio ha/*è corso verso l'università
      'Giorgio has/is run towards the university.'

(31) Giorgio *ha/è corso fino all'università
      'Giorgio has/is run upto the university.'

Clearly, the interaction between the semantics of the verbs *camminare* and *correrre* with that of the directional phrases *fino a* and *verso a* influences auxiliary selection in Italian (Di Tomaso 1996). We do not attempt to explain this interaction here; however it is clear that the selection of *avere* in these sentences are counterexamples to a lexical rule account as formulated in L&RH.

Our observations thus suggest that the evidence for a lexical shift analysis for agentive manner of motion verbs is weak, at best. While L&RH acknowledge, and indeed posit, the role of semantic factors in phenomena such as unaccusativity, they nevertheless assume the necessity of encoding it syntactically as well. We would suggest that an account based on semantics alone provides the simpler and more economical alternative.

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