An Approach to Unaccusative Mismatches

Beth Levin
Northwestern University

Malka Rappaport
Bar Ilan University

314

An Approach to Unaccusative Mismatches

Beth Levin
Northwestern University

Malka Rappaport
Bar Ilan University

The Unaccusative Hypothesis (UH), as first formulated by Perlmutter (1978), and later adopted by Burzio (1986), is a syntactic hypothesis which claims that there are two classes of intransitive verbs, the unaccusative and unergative verbs, each associated with a different syntactic configuration. On a Government-Binding approach, the two classses are associated with the d-structure syntactic configurations schematized in (1).

(1) a. Unaccusative Verb: __ [$_{VP}$ V NP]
    b. Unergative Verb: NP [$_{VP}$ V]

Since the introduction of the UH, a wide range of phenomena in various languages have been studied which purport to distinguish between unaccusative and unergative verbs (see Grimshaw (1988) for an overview). We call these phenomena UNACCUSATIVE DIAGNOSTICS. The UH claims that the two classes of intransitive verbs are syntactically defined and appeals to the difference in syntactic configuration to explain many of the diagnostics which reveal differences in behavior between the classes.

The question arises concerning the relation between the meaning of intransitive verbs and their membership in the unaccusative or unergative classes. The impressive similarity between the verbs selected by unaccusative diagnostics cross-linguistically suggests that there are important semantic facets to the distinction. Indeed, it has been suggested that the postulation of the UH permits the statement

of a single simple linking generalization that applies to transitive and intransitive verbs alike: agent arguments are d-structure subjects and patient/theme arguments are d-structure objects. Thus while the UH claims that the distinction between the two classes of verbs is syntactically REPRESENTED, it is often assumed that it is fully semantically DETERMINED.

However, the relation between the syntax and the semantics of unaccusativity is more complicated than the simple generalization mentioned above suggests. This situation is reflected in the existence of what have become known as UNACCUSATIVE MISMATCHES (L. Levin (1985)). This term is used to describe the situation in which different unaccusative diagnostics single out different classes of intransitive verbs within and across languages. Two kinds of mismatches can be identified in discussions of unaccusativity. One has lead to the denial that unaccusativity is syntactically encoded, and the other has lead to the denial that unaccusativity is fully semantically determined.

The first kind of mismatch arises because different apparent unaccusative diagnostics single out distinct (but not necessarily disjoint) semantically coherent classes of verbs. This type of mismatch can be exemplified with data from Dutch. Zaenen (1988) shows that two purported diagnostics of unaccusativity in Dutch turn out to be sensitive to two different semantic features. Prenominal perfect participles are usually said to modify the surface subjects of unaccusative but not unergative verbs. However, it turns out that these participles may modify all and only the subjects of telic intransitive verbs. On the other hand, impersonal passivization is supposed to be impossible with unaccusative verbs (Perlmutter (1978)), but Zaenen argues that only verbs, whether unaccusative or unergative, whose subjects do not show protagonist control fail to undergo impersonal passivization (see section 1). If the explanation for the diagnostics lies in the syntactic configuration required by the verbs, then such diagnostics are not expected to distinguish between semantically coherent subclasses. From mismatches of this sort, Zaenen (1988), Napoli (1988), and others have concluded that a syntactically encoded distinction between unaccusative and unergative verbs is unnecessary. Each diagnostic is merely sensitive to one or another semantic feature, which cannot be taken as a defining feature for all unaccusative verbs. On this approach, which we call the SEMANTIC APPROACH, unaccusativity is not a unified phenomenon.

Rosen (1984) makes much of the lack of a single semantic criterion common to all unaccusative verbs selected by all diagnostics in all languages. She supports the SYNTACTIC APPROACH, which claims that unaccusativity is a unified phenomenon, and that the only thing all unaccusative verbs have in common is a particular syntactic configuration, although she does not deny tendencies in the correspondence between the semantics of verbs and their class membership. She adduces the existence of the second kind of unaccusative mismatch to support this approach. She shows that verbs with similar meanings in and across languages may be classified differently with respect to unaccusativity. For example, she claims that the verb corresponding to *die* acts like an unaccusative verb in Italian, but like an unergative verb in Choctaw. Within Italian itself, verbs of bodily processes show variable behavior: *russare* 'snore' manifests unergative properties, while *arrossire* 'blush' mani-

UNACCUSATIVE MISMATCHES

fests unaccusative properties. Rosen concludes from these data, that the distinction between the two classes is not completely characterizable in terms of meaning alone.

1. Significance of the Mismatches Reassessed

There are problems with both the syntactic and the semantic approaches. The semantic approach ignores much of the original motivation for the UH, namely, that some of the diagnostics are explained by the postulation of a syntactic distinction between the two classes. Furthermore, the existence of syntactic and morphological phenomena that class unaccusative verbs and passive verbs together provides strong support for the syntactic approach, since, by hypothesis, unaccusative verbs and passive verbs appear in the same syntactic configurations. But it is difficult to find a semantic property shared by all passive and unaccusative verbs.

The problem with the syntactic approach becomes clear when considerations of language acquisition are taken into account. Assuming a language such as English, which lacks morphological phenomena distinguishing between unaccusative and unergative verbs, does encode this distinction syntactically, then learnability considerations dictate that the distinction must be fully determined by the semantics. In section 2.2.2, we present some evidence that the unaccusative/unergative distinction must be syntactically represented in English, but the overt evidence for this distinction is rather paltry. It is unlikely that a child learning English will have access to evidence concerning the behavior of each intransitive verb acquired with respect to the kinds of phenomena which force the postulation of an unaccusative or unergative d-structure for that verb. If Universal Grammar allows both unaccusative and unergative d-structure configurations for intransitive verbs, then how does the language learner know how to classify new verbs as they are learned? There are two options: either (i) the choice is predictable on the basis of the meaning of the verb being acquired, or (ii) there must be some way, on the basis of simple data, to determine what class a given verb belongs to. Since option (ii) appears not to be correct for English, then, if the UH holds, a verb's class membership must be completely determined on the basis of its meaning.[1]

For these general reasons, we would like to maintain the claim that unaccusativity is syntactically represented but semantically determined. However, in order to maintain this position, we must take a second look at the mismatches.

First, the purported diagnostics for unaccusativity must themselves be reassessed. As mentioned, the most convincing diagnostics are those which can be tied to the syntactic configuration associated with unaccusative verbs. *Ne*-cliticization in Italian is such a diagnostic: (i) the subjects of unacusative and passive verbs pattern with the objects of transitive verbs with respect to this phenomenon, and (ii) the explanation for these facts appeals to syntactic configuration (Belletti and Rizzi (1981)). Another commonly cited unaccusative diagnostic in Italian is auxiliary selection. Although the connection between unaccusative syntactic configuration and

---

[1]In languages with overt morphological markers of unaccusativity, membership in the unaccusative or unergative class may be grammaticalized. Since there are overt indicators of class membership, the members of the classes may show some deviation from the semantic criteria for class membership.

the selection of the auxiliary *essere* 'be' is not well-understood (also see Grimshaw (1988)), there is a complete correlation between the verbs which select the auxiliary *essere* 'be' and those which allow *ne*-cliticization, as far as we have been able to determine. Therefore, we consider auxiliary selection a reliable test for unaccusativity in Italian.

Other purported unaccusative diagnostics, especially those with no inherent connection to direct objecthood, may turn out not to be diagnostics for unaccusativity. Impersonal passivization may be such a diagnostic. Given the extensive literature on this construction, we cannot provide an analysis of it here. We merely cite evidence which suggests that this phenomenon is not a reliable unaccusative diagnostic, since it appears to be sensitive to language-dependent semantic features which do not completely characterize the class of unaccusative verbs. Zaenen (1988) claims that impersonal passivization in Dutch is sensitive to "protagonist control", on the basis of sentences such as (2).

(2)   Er werd door de krengen gestonken.
       'There is stunk by the nasty women.'
       (Zaenen 1988 (37), from Perlmutter 1978 (71b))

The verb *stinken* 'stink' is usually classed as an unergative verb, but the construction in (2) is only acceptable on the interpretation that the nasty women somehow exuded the bad odors with malicious intent. The unergativity of a verb then is not sufficient condition for that verb to appear in an impersonal passive construction. Furthermore, (3) shows that in Dutch even an unaccusative verb, when interpreted as denoting an action under the control of the subject, can be found in an impersonal passive construction.

(3)   In het tweede bedrijf werd er door de nieuwe acteur op het juiste ogenblik gevallen.
       'In the second act there was fallen by the new actor on cue.'
       (Zaenen 1988 (38), from Perlmutter 1978 (74b))

Thus unergativity is neither necessary nor sufficient for impersonal passivization in Dutch. Rather this phenomenon seems sensitive to protagonist control, a semantic feature which correlates with neither unaccusativity nor unergativity.

Knecht (1985) argues that impersonal passivization in Turkish is also sensitive to a semantic feature, identifying animacy as the relevant feature for Turkish. As the contrast in (4) shows, the animacy of the argument of an unaccusative verb determines its ability to be found in the impersonal passive construction in Turkish. (Note both sentences in (4) involve the same verbal root.)

(4)   a.   Bu gibi fikralar-da kizar-il-ir.
             this such jokes-LOC turn red-PASS-PRS
             'It is blushed at such jokes (by people).' (Knecht 1985 (71a))

UNACCUSATIVE MISMATCHES

     b.   * Bu firin-da iyi kizar-il-ir.
          this oven-LOC well turn red-PASS-PRS
          'It is roasted well in this oven (by food).' (Knecht 1985 (71b))

Therefore, two diagnostics may not single out the same classes of verbs as unaccusative when one of the diagnostics does not really test for unaccusative verbs, in the sense of verbs appearing in the unaccusative syntactic configuration.

Second, the existence of verbs with similar meanings but different classifications, such as those cited by Rosen, may not have the implications for the UH that Rosen suggests. Until we have a better understanding of what components of meaning are relevant to determining whether a verb is unaccusative or unergative, it is not clear whether, for example, the concepts expressed by the English verbs *blush* and *snore* should really be considered to be of the same semantic type (i.e., bodily processes). The concept denoted by the English verb *snore* can be classified as an activity, while that denoted by the English verb *blush* is open to an activity or change of state interpretation depending on one's perspective. What is interesting is that the Italian verb *arrossire* 'blush' literally means to "become red", suggesting that in Italian this verb can be considered a change of state verb. It is probable that the semantic notions of activity and change of state, rather than the semantic notion of bodily process, are the aspects of meaning relevant to the UH. A comparison of the status of two apparently similar verbs in two languages is only valid if their status is established via well-established unaccusative diagnostics, and the verbs have the same components of meaning relevant for determining unaccusativity.

Finally, the fact that a particular diagnostic singles out a semantically coherent subclass of unaccusative (or unergative) verbs does not preclude a syntactic factor from entering into the analysis of the diagnostic and, therefore, does not undermine the syntactic basis of the UH. A verb's ability to be found in the unaccusative syntactic configuration may be a necessary but not a sufficient condition for manifesting some property. For example, we argue in section 2.2.2 that resultative phrases in English may be predicated of subjects of unaccusative but not unergative verbs; nevertheless, there is a semantically defined subset of unaccusative verbs whose subjects cannot have resultative phrases predicated of them, for independent reasons.

To summarize, the problems with maintaining that the unaccusative/unergative distinction is both syntactically represented and fully semantically determined can be overcome only if (i) those diagnostics that indeed test for unaccusative syntactic configuration are identified, (ii) the significant components of meaning which correlate with unaccusative or unergative syntactic configuration are isolated, and (iii) the exact correlations between meaning and syntactic structure are determined.

In the next section we explore the syntax and semantics of unaccusativity through a study of intransitive verbs of motion, in accordance with the guidelines set out in this section. We show that a careful scrutiny of the mismatches exhibited by these verbs yields insights into the nature of unaccusativity and its syntactic and semantic underpinnings.

LEVIN and RAPPAPORT

2. A Case Study of the Syntax and Semantics of Unaccusativity

Verbs of motion figure prominently in discussions of unaccusative mismatches, particularly in discussions of mismatches of the type noted by Rosen, where verbs belonging to a seemingly well-defined semantic class show variable behavior. Some verbs of motion display properties of unaccusative verbs, others display properties of unergative verbs, and still others display properties of both types of verbs depending apparently on their complement structure. Furthermore, although verbs of motion form an apparently semantically coherent class, they pose problems for a simple theory of the relationship between the syntax and the semantics of unaccusativity which attempts to reduce the unaccusative/unergative distinction to a semantic distinction based on the notions of agent and patient/theme. Surface subjects of motion verbs, as they denote the entity that undergoes the change in location specified by the verb, should qualify as themes in the sense of Gruber (1976) and Jackendoff (1976), suggesting they be analyzed as d-structure objects. If so, verbs of motion are expected to display unaccusative behavior. But verbs of motion such as *run* and *swim* often behave like unergative verbs across languages. This cannot be solely attributed to the agentivity of the subjects of these verbs, since verbs such as *arrive* and *descend* are often agentive, yet consistently display unaccusative behavior in many languages. Verbs of motion also show the second kind of mismatch, since, as we show below, they cross classify with respect to a variety of purported unaccusative diagnostics. These verbs then pose a real challenge to the claim that unaccusativity is syntactically represented and semantically determined.

2.1 The Three Classes of Intransitive Verbs of Motion

Intransitive verbs of motion fall into three classes, listed in (5), together with representative members of each class:[2] This classification arises from a consideration of the behavior of these verbs with respect to several unaccusative diagnostics, as illustrated throughout this subsection.

(5) a. *arrive* class: arrive, come, go, depart, fall, return, descend ...

  b. *roll* class: roll, slide, move, swing, spin, rotate ...

  c. *run* class: run, walk, gallop, jump, hop, skip, swim ...

We now introduce the components of meaning which we believe distinguish among the classes, beginning with the *arrive* class. The members of this class have sometimes been called verbs of inherently directed motion (Rosen (1984)) as their meaning includes an inherently specified direction of motion: the verb *arrive* denotes achievement of motion to a specific point, while the verb *descend*, specifies motion downward. Contrast the verbs *run* and *roll*, whose meaning reveals nothing about direction of motion. The *arrive* verbs have also been considered telic verbs, verbs that denote events inherently bounded in time, having an inherent endpoint

---

[2]We are concerned here with the existence of the classes, and not necessarily with the classification of any individual verb. There may be variation among speakers as to how they classify a particular verb, and, for a given speaker, the classification of a given verb may be fluid. See section 2.2.3 for a discussion of one type of systematic movement between classes in English.

320

UNACCUSATIVE MISMATCHES

(Tenny (1987), among others). However, while some of these verbs (e.g., *arrive*) necessarily have telic lexical aktionsart, others (e.g., *descend*) do not. Verbs such as *descend* can be interpreted as telic, but they need not be. [3]

Since all the verbs in the *arrive* class necessarily encode inherent direction, we designate DIRECTION as the component of meaning distinguishing this class from the other two. The meaning of the *arrive* verbs includes a specification of the direction of motion; the meaning of the *run* and *roll* verbs lacks such a specification.

A component of meaning which appears to be in complementary distribution with direction is MANNER of motion.[4] This component is present in the meanings of the *roll* and *run* verbs, and we refer to these two classes jointly as manner of motion verbs. The verb *run*, for example, denotes fast movement. The manner component is lacking in the *arrive* verbs: the verb *arrive* describes direction of motion without specifying manner: one can arrive by running, rolling, sliding, walking, etc.[5]

In order to differentiate the *roll* verbs from the *run* verbs, we introduce the component of meaning DIRECT EXTERNAL CAUSE. This component specifies whether the action denoted by the verb happens spontaneously or whether it is directly caused by some external agent or force. As a first approximation, direct external cause can be understood to distinguish verbs which denote actions that necesssarily have "protagonist control" from those that do not. If the meaning of a verb involves a direct external cause, it does not involve protagonist control, while if the meaning does not involve a direct external cause, then it involves protagonist control.[6]

Direct external cause subdivides the manner of motion verbs into the *run* and *roll* verbs. Running generally involves protagonist control; rolling does not necessarily,

---

[3]The interdependency between telicity and direction can be understood from a consideration of the ways in which delimiting phrases (in the sense of Tenny (1987)) are introduced for motion verbs. While the actions denoted by many activity verbs (e.g. *eat*) can become delimited by the use of a direct object specified for delimited quantity (cf. *eat apples* vs. *eat an apple*), the actions denoted by motion verbs typically become delimited through the specification of a goal (cf. *run* vs. *run to the store*). Inherently directed motion verbs are lexically specified not only for a theme, but also for a path which specifies the direction of motion. This path phrase can be realized as a path with an endpoint (a goal phrase such as *to the store*) or without an endpoint (i.e., *towards the store*). When the path phrase is not realized, the verb may or may not be understood as taking a path argument containing an endpoint. When the verb is interpreted as having a path argument with an endpoint, the verb is understood as telic. When the verb is interpreted as having a path argument without an endpoint it is understood as merely directional, but not telic.

[4]Manner and direction are characterized better as components of meaning than as features because each has multiple instantiations. As we show in section 2.2, it is the presence or absence of a particular type of meaning component that is syntactically relevant, rather than its particular instantiation.

[5]The complementary distribution of manner and direction should ultimately receive an explanation, but we cannot yet offer one. This complementarity reflects a general property of English verb meaning which is not limited to verbs of motion. For example, verbs of removal fall into two classes with distinct syntactic properties according to whether their meaning encodes manner (e.g., *wipe, shovel*) or result (e.g., *clean, clear*).

[6]As we intend to discuss in further work, an examination of a wider class of verbs shows that direct external cause rather than protagonist control is the relevant component of meaning. See also Hale and Keyser (1987).

LEVIN and RAPPAPORT

since it can be attributed to an external force, such as a push or gravity.[7] Protagonist control seems irrelevant to the characterization of the *arrive* verbs. That is, as far as we can tell, the *arrive* verbs do not subclassify into verbs that do and do not involve protagonist control.[8]

2.2 Correlations of Meaning Components with Unaccusative Behavior

We now show how the three components of meaning that figure in the characterization of intransitive verbs of motion, as summarized in (6), determine the status of these verbs as unaccusative or unergative.[9]

(6)   *arrive* verbs: direction
       run verbs: manner, protagonist control
       roll verbs: manner, no protagonist control

2.2.1 The first generalization is:

(7)   Generalization 1: Verbs whose meaning includes a specification of inherent direction are found in the unaccusative syntactic configuration.

All *arrive* verbs display unaccusative behavior independent of whether or not they are used agentively. For example, the Italian verb *cadere* 'fall' selects the unaccusative auxiliary *essere* 'be' even when used agentively.

(8)   Luigi è caduto apposta.
       'Luigi fell on purpose.' (Rosen 1984 (76a))

2.2.2 For manner of motion verbs, which lack a lexicalized direction, the relevant generalization is:

(9)   Generalization 2: If the meaning of the verb specifies a direct external cause, then the verb is unaccusative, and otherwise it is unergative.

This correlation means that the *roll* verbs are basically unaccusative, while the *run* verbs are basically unergative. Evidence from Italian confirms this: *roll* verbs select the unaccusative auxiliary *essere* 'be', while *run* verbs do not (but see 2.2.3).[10]

---

[7]This analysis leads to the expectation that verbs with manner components neutral with respect to protagonist control can pattern both as *run* and *roll* verbs. We show in xxx that the behavior of the verb *run* supports this variable characterization.

[8]This difference might arise because *arrive* verbs are distinguished from each other by the inherent direction of motion they specify, and directions are not characterizable in terms of protagonist control. In contrast, protagonist control enters into the characterization of some manners of motion.

[9]The generalizations we present are tailored to verbs of motion, although ultimately they should be subsumed under more general conventions that cover the entire lexicon.

[10]The behavior of *rotolare*, the Italian counterpart of English *roll*, with respect to auxiliary selection needs to be investigated further. Although it can select the auxiliary *essere*, speakers appear to prefer this choice of auxiliary when the verb takes an overt directional phrase. However, the *roll* verb *scivolare* 'slide' takes the auxiliary *essere* independent of the presence or absence of a directional complement.

UNACCUSATIVE MISMATCHES

The behavior of manner of motion verbs in resultative constructions in English also illustrates that Generalization 2 holds. Resultative constructions provide the most convincing evidence that the unaccusative/unergative distinction is syntactically encoded in English. As discussed by Simpson (1983) and Carrier-Duncan and Randall (1987), resultative phrases are predicated only of direct objects, as the contrast in (10) shows:

(10) a. Terry wiped the table clean.

   b. * Terry wiped the table exhausted.

The direct object restriction is explained by the mutual c-command requirement on predication (see Roberts (1988) for a recent discussion). The major counter-example to this generalization comes from unaccusative verbs, as in (11).

(11) The river froze solid.

This behavior is to be expected if the s-structure subjects of unaccusative verbs are d-structure objects. If verbs such as *freeze* are found in the unaccusative syntactic configuration, then the c-command requirement exhibited by transitive verbs can be preserved. In contrast, as noted by Simpson (1983), resultative phrases cannot be predicated of the subjects of unergative verbs.

(12) a. * He talked hoarse.

   b.   He talked himself hoarse.

This fact is again explained by the mutual c-commmand requirement on predication. The appearance of the reflexive in the grammatical (12b) has been taken as an indication that the contrast between (11) and (12) is a syntactic rather than a purely semantic one. The reflexive object in (12b) seems only to fulfill the syntactic need for the resultative phrase to be predicated of an object (Simpson (1983)).

Turning to verbs of motion, the *roll* verbs can take a resultative phrase, but the *run* verbs can only take a resultative phrase if it is predicated of a reflexive object, suggesting that the *roll* verbs are unaccusative and the *run* verbs are unergative.[11]

(13) a. The door rolled/slid open/shut.

   b.   The pebbles rolled smooth. (Carrier-Duncan and Randall 1987 (98))

---

[11] As the generalization stated above suggests, the unergativity of the *run* verbs is really dependent on protagonist control. The verb *run* typically denotes an agentive action, but there is also a non-agentive sense of the verb used to denote the motion of water. On this sense, *run* can appear with a resultative phrase, showing that when the verb does not involve protagonist control, it appears in an unaccusative syntactic configuration, like the *roll* verbs: *The river ran dry.*

(14) a. * The horse galloped lame.

     b. The horse galloped itself lame.

The diagnostic value of resultative constructions may be further illustrated with resultative phrases predicated of non-subcategorized (or non-argument) noun phrases. The *run* verbs can enter into such resultative constructions, but the *roll* verbs cannot.

(15) a. I ran the soles off my shoes.

     b. * The cart rolled the rubber off its wheels.

In (15a), *the soles* is not subcategorized by *run* (cf. *I ran my soles). The intepretation of (15a) is "I ran, and as a result I wore the soles off my shoes", but (15b) cannot mean "The cart rolled, and as a result it caused the rubber to come off its wheels". Furthermore, the verb *roll* has a transitive use, which unlike the unaccusative use, can enter into this construction, as the minimal pair in (16) shows.

(16) a. The lumberjacks rolled the bark off the log.

     b. * The log rolled its bark off.

Both sentences describe the same intended result: causing the bark to come off the log. It appears that (15b) and (16b) are not semantically incoherent. There must be a syntactic reason that these sentences cannot encode the intended meaning.

The contrasting behavior of *run* and *roll* receives a straightforward case-theoretic explanation (see also Hoekstra (1988)). Assuming that some form of Burzio's Generalization (1986) is correct, whatever its explanation, the subject of a resultative XP receives case when it is a complement of an unergative verb as schematized in (17), since unergative verbs are case assigners by Burzio's Generalization.[12]

(17) [$_{VP}$ V NP XP]

Now consider an unaccusative verb found in a resultative construction of the type in (15b). At d-structure, the verb phrase must include the verb, the NP corresponding to the s-structure subject of the verb (*the cart*), as well as the resultative XP (*off its wheels*) and its subject (*the rubber*). There are several potential analyses for the internal structure of such a VP, but we need not choose between them. Whatever its internal structure, the VP includes two NPs that must receive case. Assuming that unaccusative verbs cannot assign structural case (Burzio (1986)), one NP can receive nominative case by movement into subject position at s-structure. As there

---

[12]The exact syntactic structure of resultatives is a matter of debate, with some advocating a small clause analysis and others a ternary branching structure. The case explanation for this pattern holds for both analyses, so we merely indicate linear, but not hierarchical, order here.

UNACCUSATIVE MISMATCHES

is no source of case for the second NP, the structure would be ruled out by the Case Filter.[13]

The ability of an intransitive verb to be found in an unaccusative syntactic configuration is a necessary but not a sufficient condition for a resultative to be predicated of its s-structure subject. Resultative phrases are incompatible with *arrive* verbs, despite their unaccusative status.

(18) She arrived/came/descended tired.

In (18), *tired* can only be understood as a depictive phrase describing the state at the time of the event and not as a resultative phrase describing the state achieved as a result of the action denoted by the verb. The incompatibility of resultatives with the *arrive* verbs, however, need not cast doubt on the unaccusativity of these verbs, if this incompatibility can receive an independent explanation.

Resultative phrases act as delimiters of events, in the sense of Tenny (1987). An event can be delimited through secondary predication by the specification of a resultant change of state or resultant change of location. Resultative phrases specify a resultant state, while goal phrases specify a resultant location. Tenny suggests as one of her aspectual principles of argument structure that a clause may grammatically have only one delimiting phrase. The meaning of the verbs in the *arrive* class includes either an inherently specified change of location (e.g., *arrive*) or an inherently specified path (e.g., *descend*). Consequently, the *arrive* verbs, as they lexically select a delimiting phrase describing a change of location, are incompatible with a second delimiting phrase describing a change of state.

Several pieces of evidence support this analysis. First, as noted by Simpson (1983), transitive verbs such as *bring* or *take*, whose meanings, like those of the *arrive* verbs, include an inherently specified direction, also resemble the *arrive* verbs in allowing a depictive but not a resultative interpretation of adjective phrases.

(19) Sarah brought/took the baby tired.

Second, the verb *fall* has two senses: an inherently directed motion sense and a change of state sense. Interestingly, this verb is compatible with, and may even select, a resultative phrase, only on the change of state interpretation:

(20) He fell sick.

(20) may only mean that he became sick; that is, the verb loses its directional meaning when it takes a resultative phrase. Third, as shown in (21), *roll* and *run* verbs, when they appear with goal phrases, are incompatible with resultative

---

[13]The Case Filter would also explain the contrast between *We ran the shit out of our shoes* and **The cart rolled the shit out of its wheels*, which involves another type of expletive object discussed by Burzio (1986).

phrases, presumably because two types of delimiters cannot cooccur. (21a) cannot mean that the pebbles became smooth as a result of rolling onto the shore, nor can (21b) mean that she became "ragged" as a result of running to the store.[14]

(21) a.   * The pebbles rolled onto the shore smooth.

 b.   * She ran herself to the store ragged.

2.2.3 Given Generalizations 1 and 2, a question arises concerning the behavior of the *run* verbs when they appear with directional phrases. Both generalizations appear to be relevant to the *run* verbs in these instances, the first implying that the verbs will display unaccusative behavior, the second that the verbs will display unergative behavior. The effect of goal phrases on the aspectual classification of *run* has been widely discussed: this verb is an activity verb when it occurs without a goal phrase, but an achievement verb when it takes a goal phrase. As pointed out by Hoekstra (1984), Rosen (1984), Centineo (1986), and Van Valin (1987), among others, the goal phrase also affects the verb's status with respect to the UH. Here we cite evidence that in these instancesthe verbs are unaccusative and also offer an explanation for why Generalization 1 is relevant here.

In Italian those manner of motion verbs that can appear with goal phrases, and not all of them can, select the auxiliary *essere* 'be' in the presence of a goal phrase.

(22) a.   Ugo ha corso meglio ieri. (auxiliary *essere* not selected)
 'Ugo ran better yesterday.' (Rosen 1984 (86a))

 b.   Ugo è corso a casa. (auxiliary *essere* selected)
 'Ugo ran home.' (Rosen 1984 (86b))

Furthermore, *ne*-cliticization, another indicator of unaccusativity, becomes possible in the presence of a goal phrase, again indicating that the goal phrase affects the classification of the verb.

(23) a.   * Ne hanno corso due. (auxiliary *essere* not selected)
 'Two of them ran.'

 b.   Ne sono corsi due a casa. (auxiliary *essere* selected)
 'Two of them ran home.'

Goal phrases appear to affect the classification of *run* verbs in English as well. If locative inversion is an authentic unaccusative diagnostic for English, as suggested by L. Levin (1985) and Bresnan and Kanerva (1988), the contrast in (24) would constitute evidence for the unaccusativity of *run* verbs with goal phrases, as locative inversion is only possible when the inverted PP is interpreted as defining the endpoint rather than the location of motion.

---

[14]The acceptability of (21b) does not improve in the absence of the reflexive (**She ran to the* *store ragged*), despite the fact that we argue in section 2.2.3 that *run* verbs with goal phrases appear in unaccusative syntactic configurations.

326

UNACCUSATIVE MISMATCHES

(24) a. * In the room ran the children.

b. Into the room ran the children.

The behavior of *run* verbs can be explained with the process of lexical subordination (Rappaport and Levin (1988), Levin and Rapoport (1988)), which allows verbs to acquire certain types of extended meanings. This process creates a new meaning for a verb by subordinating its original meaning as a means clause under a new clause describing a result that is brought about by the original action denoted by the verb. For instance, the verb *bake* in its simple use is a verb of change of state. But this verb has an extended use resulting from lexical subordination as a verb of creation, with the meaning "to create by means of change of state *bake*". The two meanings of the verb *bake* can be schematized as in (25) using a predicate decomposition approach to lexical semantic representation of the type described in Hale and Keyser (1986, 1987) and Rappaport and Levin (1988).

(25) a. *bake* (change of state): [x CAUSE [y BECOME cooked]]

b. *bake* (creation): [x CREATE y BY [x CAUSE [y BECOME cooked]]]

The predicator in the "main" result clause of the lexical semantic representation of a structure involving lexical subordination (CREATE in (25b)) determines the syntax of the clause in which the derived verb appears (see also Laughren (1988)).

Following Talmy (1975, 1985), we assume that when a manner of motion verb such as *run* takes a goal phrase, its meaning is roughly "to go to some location by manner of motion *run*". Possible lexical semantic representations for manner of motion and directional *run* are given in (26).

(26) a. *run* (manner of motion): [x MOVE in-a-running-manner]

b. *run* (directional): [x GO TO y BY [x MOVE in-a-running-manner]]

GO is the predicator representing change of location, and MOVE is the predicator representing movement without any direction. If (26b) is the appropriate semantic representation for directional *run*, and if the main clause of in (26b) determines the verb's syntactic properties, then directional *run* is unaccusative since the meaning specified in the main clause of (26b) is that of a verb of inherently specified direction.

2.2.4 To summarize, we have shown how the components of meaning introduced in 2.1 corrrelate with unaccusativity. The presence of an inherently specified direction determines that a verb is unaccusative (e.g., *arrive*). In the absence of direction, the presence of protagonist control means a verb is unergative (e.g., *run*), and its absence that a verb is unaccuative (e.g., *roll*). We hope in future work to investigate why these particular components of meaning correlate in precisely this way with the unaccusative and unergative syntactic configurations.

3. Further Insights into Verbs of Motion

In this section we look at the behavior of verbs of motion with respect to another widely cited unaccusative diagnostic, *-ed* perfect participles. As noted in Hoekstra (1984) and Levin and Rappaport (1986), following observations in Bresnan (1982), these participles can be predicated of subjects of unaccusative but not unergative verbs. Consistent with this generalization, *arrive* verbs are found as perfect participles, while *run* verbs are not.

(27) a.   the newly arrived ship, recently departed guests, ...

       b.   *a run man, *a walked pedestrian, *a jumped athlete, ...
           (passive reading if any)

The behavior of *roll* verbs is unexpected: the participles in (28) receive only a passive, and not a perfect, reading. This interpretation is based on the transitive use of these verbs (*The child rolled the ball*), rather than on the unaccusative use (*The ball rolled*).

(28) the rolled ball, the spun globe, the moved cart, ...

It appears that only telic unaccusative verbs appear as perfect participles, as confirmed by the other perfect participles in (29a), which are all derived from telic unaccusative verbs. Contrast these participles with the unacceptable participle in (29b), which is derived from the atelic unaccusative verb *remain*.

(29) a.   the burst pipe, a swollen ankle, rusted rails, wilted lettuce, ...

       b. ∗the (recently, stubbornly, deliberately) remained settlers

The question is whether this construction still qualifies as an unaccusative diagnostic or whether it is merely sensitive to the semantic notion of telicity, syntactic configuration being irrelevant. What suggests that unaccusativity is implicated is the observation that these participles are predicated not only of unaccusative subjects, but also of transitive objects, when they acquire a passive reading, as in (28). As noted in section 1, such a correlation is expected under the UH. The fact that prenominal participles are predicated of unaccusative subjects and transitive objects is given a syntactic explanation in Levin and Rappaport (1986:653-655), although as noted there that explanation is not without its problems. If the syntactic account turns out to be valid, what remains to be explained is why unaccusativity is a necessary but not a sufficient condition for this diagnostic.

UNACCUSATIVE MISMATCHES

4. Conclusion

To conclude, we hope to have shown that the existence of unaccusative mismatches does not undermine the validity of the Unaccusative Hypothesis. Rather a careful study of mismatches can be used to reach a deeper understanding of the phenomenon of unaccusativity, allowing both the syntactic and the semantic facets of the hypothesis to be maintained.

References:

Belletti, A. and L. Rizzi (1981) "The Syntax of *Ne*: Some Theoretical Implications", *Linguistic Review* 1-2.

Bresnan, J. (1982) "The Passive in Lexical Theory," in J. Bresnan, ed. *The Mental Representation of Grammatical Relations*, MIT Press, Cambridge, MA, 3-86.

Bresnan, J. and J. Kanerva (1989) "Locative Inversion in Chichewa: a Case Study of Factorization in Grammar", *Linguistic Inquiry* 20, 1-50.

Burzio, L. (1986) *Italian Syntax: A Government-Binding Approach*, Reidel, Dordrecht.

Carrier-Duncan, J. and J. Randall (1987) "Lexical Rules and Lexical Representations: Evidence from Resultatives", unpublished ms., Harvard University and Northeastern University.

Centineo, G. (1986) "A Lexical Theory of Auxiliary Selection in Italian," in R.D. Van Valin Jr., ed., *Davis Working Papers in Linguistics* 1, University of California, Davis, CA, 1-35.

Grimshaw, J. (1987) "Unaccusatives—An Overview", *NELS* 17, 244-259.

Gruber, J.S. (1976) *Lexical Structures in Syntax and Semantics*, North-Holland, Amsterdam.

Hale, K.L. and S.J. Keyser (1986) "Some Transitivity Alternations in English", Lexicon Project Working Papers 7, Center for Cognitive Science, MIT, Cambridge, MA.

Hale, K.L. and S.J. Keyser (1987) "A View from the Middle", Lexicon Project Working Papers 10, Center for Cognitive Science, MIT, Cambridge, MA.

Hoekstra, T. (1984) *Transitivity*, Foris, Dordrecht.

Hoekstra, T. (1988) "Small Clause Results", *Lingua* 74, 101-139.

Jackendoff, R.S. (1976) "Toward an Explanatory Semantic Representation", *Linguistic Inquiry* 7, 89-150.

Knecht, L.E. (1986) *Subject and Object in Turkish*, Doctoral dissertation, MIT, Cambridge, MA.

Laughren, M. (1988) "Towards a Lexical Representation of Warlpiri Verbs", in W. Wilkins, ed. (1988), 215-242.

Levin, B. and T.R. Rapoport (1988) "Lexical Subordination", *CLS* 24, 275-289.

Levin, B. and M. Rappaport (1986) "The Formation of Adjectival Passives", *Linguistic Inquiry* 17, 623-661.

Levin, L. (1985) *Operations on Lexical Forms: Unaccusative Rules in Germanic Languages*, Doctoral dissertation, MIT, Cambridge, MA.

LEVIN and RAPPAPORT

Perlmutter, D.M. (1978) "Impersonal Passives and the Unaccusative Hypothesis", *BLS* 4, Berkeley, CA.

Rappaport, M. and B. Levin (1988) "What to Do with Theta-Roles", in W. Wilkins, ed. (1988), 7-36.

Roberts, I. (1988) "Predicative APs", *Linguistic Inquiry* 19, 703-710.

Rosen, C. (1984) "The Interface between Semantic Roles and Initial Grammatical Relations", in D.M. Perlmutter and C. Rosen, eds., *Studies in Relational Grammar 2*, University of Chicago Press, Chicago, IL, 38-77.

Simpson, J. (1983) "Resultatives", in L. Levin, M. Rappaport and A. Zaenen, eds., *Papers in Lexical-Functional Grammar*, Indiana University Linguistics Club, Bloomington, IN, 143-157.

Talmy, L. (1975) "Semantics and Syntax of Motion", in J.P. Kimball, ed., *Syntax and Semantics* 4, Academic Press, New York, NY, 181-238.

Talmy, L. (1985) "Lexicalization Patterns: Semantic Structure in Lexical Forms", in T. Shopen, ed., *Language Typology and Syntactic Description* 3, Grammatical Categories and the Lexicon, Cambridge University Press, Cambridge, 57-149.

Tenny, C. (1987) *Grammaticalizing Aspect and Affectedness*, Doctoral dissertation, MIT, Cambridge, MA.

Van Valin, R.D. Jr. (1987) "The Unaccusative Hypothesis vs. Lexical Semantics: Syntactic vs. Semantic Approaches to Verb Classification", *NELS* 17, 641-661.

Wilkins, W., ed. (1988) *Thematic Relations*, Academic Press, New York, NY.

Zaenen, A. (1988) "Unaccusative Verbs in Dutch and the Syntax-Semantics Interface", unpublished ms., Xerox PARC, Palo Alto, CA.