Some notes on the syntactic, semantic and pragmatic properties of locative inversion in English
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Abstract
This paper looks at the properties of locative inversion in English at the lexicon-syntax and syntax-discourse interface. The attested presence of unergative verbs in these constructions has recently led to the rejection of a syntactic analysis of the construction as involving unaccusative verbs, in favour of a pragmatic/discourse approach (see, for instance, Levin & Rappaport Hovav 1995) It is argued that a pragmatic characterization does not preclude a syntactic and/or semantic characterization of locative inversion structures. The main point of this paper is to show that it is possible to characterize the verbs appearing in locative inversion structures as unaccusative under the assumption that unergative verbs appearing in locative inversion structures ‘become’ unaccusative verbs expressing existence and appearance. Following Mateu (2002), an analysis is given by which a verb expressing an activity (i.e. an unergative verb) is mapped into a lexical structure with a state predicate (i.e. an unaccusative verb) under a process of ‘conflation’, thus conforming to the pragmatic requirements on verbs appearing in locative inversion structures.

Key words: unaccusative, unergative, discourse-old/new, conflation, verbs of existence and appearance
1. INTRODUCTION

A cursory look at the literature on locative inversion reveals that a proper account of this construction has to refer to its syntactic, semantic and pragmatic/discourse properties. In the generative grammar literature, locative inversion has been analysed with reference to the syntactic properties of the verb appearing in these structures as an unaccusative verb (Bresnan & Kanerva 1989, Coopmans 1989, Culicover & Levine 2001, Hoekstra & Mulder 1990, and L. Levin 1986, among others). Semantically, verbs appearing in locative inversion structures have been characterised as verbs of existence and appearance (Bolinger 1977, Penhallurick 1984), a class of verbs which seems relevant for other linguistic phenomena, such as constructions with there (Kimball 1973).

Semantic restrictions on verbs appearing in locative inversion constructions are linked to the discourse function of the construction and the pragmatic constraints on the verb (see, among others, Birner 1994, 1995; Bolinger 1977; Bresnan & Kanerva 1989; Bresnan 1994; Rochemont 1986). Although there are disagreements concerning the correct characterization of the discourse function of the construction, the most common analysis is that locative inversion is used for presentational focus: to introduce the referent of the postverbal subject on the scene (see, among others, Bresnan 1994, Rochemont 1986, Rochemont & Culicover 1990). These properties are illustrated in (1): (i) the verb is unaccusative, (ii) semantically, it is a verb expressing appearance, and (iii) the postverbal NP receives presentational focus:

(1) In the distance APPEARED the towers and spires of a town which greatly resembled Oxford. [L. Bromfield, The Farm, 124]

(from Levin & Rappaport Hovav 1995: 218)

Since verbs of existence and appearance like appear in (1) (also, arise, awake, flourish, live, stay, grow, rise, spread...and so on) are syntactically unaccusative and the semantic restrictions on these verbs can be derived from the pragmatic constraints on the construction, an issue that has been recently debated in the literature is whether a pragmatic/discourse approach suffices to account for the cluster of properties observed. This is the position advocated, for instance, by Levin & Rappaport Hovav (1995) (L&RH, henceforth), who have argued that the occurrence of intransitive verbs in these constructions which cannot be analysed as belonging to the class of unaccusatives, but are, rather, unergative verbs (such as work, chatter, glitter, and so on), precludes a syntactic characterization common to all instances of locative inversion structures in favour of a pragmatic/discourse analysis.

The main point of this paper is that though locative inversion structures have properties that operate at both the lexicon-syntax and syntax-discourse interface, a pragmatic characterization of these structures does not preclude a syntactic/semantic characterization of their properties, contrary to L&RH. This is possible under an analysis in which the unergative verbs that appear in locative inversion constructions have become verbs of existence and appearance and, like other verbs in this semantic class, are classified as syntactically unaccusative. Following Mateu’s (2002: chap 3) analysis of French impersonal constructions with unergative verbs, it will be argued here that unergatives that become unaccusatives are characterized as expressing an atelic existential situation: their state component is emphasized, while their activity component is secondary. The question of whether this involves a lexical shift in the lexicon or is a property of the construction (as argued by Hoekstra & Mulder 1990) is
not one that we are in a position to address here, but it will be shown that this proposal is readily compatible with (lexical-)syntactic approaches to predicate decomposition as that developed in Mateu (2002), following work by Hale & Keyser (1993, 1997, 1998, 2000): a verb which expresses an activity is mapped into a lexical template/structure with a state predicate.

This paper is organized as follows. In section 2, the status of locative inversion structures as an unaccusative diagnostic is examined, as well as the evidence that leads L&RH to reject such an analysis in favour of a pragmatic characterization. A summary of the pragmatic/discourse properties of locative inversion structures is given in section 3. In section 4, an alternative analysis given by Culicover & Levine (2001) is reviewed, who argue that once we distinguish between Light Inversion (LI) and Heavy Inversion (HI) (as an instance of Heavy-NP Shift) it is possible to keep LI as an unaccusative diagnostic. Though Culicover & Levin’s distinction between LI and HI will be shown to be on the right track, it will be argued here that LI inversion structures cannot be restricted to unaccusative verbs only. The proposal that a semantic/syntactic characterization of verbs in LI structures is possible if we assume that the unergative verbs that appear in LI constructions have become ‘unaccusativized’ is developed in section 5, making use of the model of the lexical-syntax interface developed by Mateu (2002). Section 6 contains some final remarks.

2. THE STATUS OF LOCATIVE INVERSION AS AN UNACCUSATIVE DIAGNOSTIC.

Locative inversion constructions like that in (2a) show non-canonical PP V NP and are descriptively analysed as variants of non inverted sentences like (2b), which shows canonical NP V PP: (2a) seems to be the result of switching positions of the NP and the PP in (2b).

(2)  
a. [PP Out of the house] came [NP a tiny old lady]
b. [NP A tiny old lady] came [PP out of the house]

The structure in (2a) is descriptively characterized as follows: (i) the clause opens with a preverbal PP (often locative or directional); (ii) the notional subject occupies a postverbal position and (iii) the verb is intransitive or copular, with rare exceptions (see also passive verbs in note 8). As L&RH (218) point out, it is this restriction on the syntactic class of verbs, as well as the observation that not all intransitive verbs are found in the construction, that has led to the analysis of locative inversion as a possible unaccusative diagnostic.

As is well known, Perlmutter’s (1978) Unaccusative Hypothesis, first formulated within the context of Relational Grammar and later adopted by Burzio (1981, 1986) within Chomsky’s (1981) Government & Binding (GB) framework, distinguishes two classes of intransitive verbs: unergative and unaccusative verbs, which are associated with different base or underlying syntactic structures. In GB, unergative verbs are associated with an external argument (a subject), but no object, at the level of D-Structure, as in (3a), while unaccusative verbs are associated with an internal argument (an object), but no external argument.

(3)  
a. [NP Mary] [VP v sang]  Unergative
b. _ [VP v arrived] [NP Mary]  Unaccusative
In order to generate the canonical NP V corresponding to (3b) \((\text{Mary arrived})\), an operation is required which ‘raises’ the internal argument \(\text{Mary}\) to the external argument position. In GB, this is done via NP-movement: an operation that moves an NP to an empty subject position (<Spec, IP> = the specifier position in the IP).

\[(4) \quad \left[ \text{IP} [\text{NP} \text{Mary}] [\text{VP} [\text{V arrived}] [\text{NP} t_i]] \right] \]

Verbs like \textit{come} in (2) and \textit{appear} in (1) are typical unaccusative verbs: they have underlying structures like that in (5), with no external argument and a NP (and a PP) as (an) internal argument(s):

\[(5) \quad \left[ \text{IP} [\text{VP} \text{V NP PP}] \right] \]

Under this assumption, (2b), which shows the canonical NP V PP order, would be the result of movement of the NP to the external argument position in <Spec, IP>, while the locative inversion structures in (1) and (2a) would result from a movement rule which places the PP in preverbal position:

\[(6) \quad \text{i. } \left[ \text{IP} [\text{NP}_i] [\text{VP} \text{V [NP} t_i] \text{PP}] \right] \]
\[\text{ii. } \left[ \text{IP} [\text{PP}_i] [\text{VP} \text{V NP [PP} t_i]] \right] \]

Under the unaccusative analysis, the postverbal NP in constructions like (2a) surfaces in its D-Structure position (6ii). This shows the inadequacy of the term ‘inversion’, though, but we will continue to use this label for the construction in (6ii), as is commonly used in both descriptive grammars and the theoretical linguistics literature.

Together with the observation that prototypical unaccusative verbs like \textit{come} and \textit{appear} are commonly found in locative inversion structures, it has often been pointed out that intransitive verbs belonging to the class of unergative verbs are incompatible with the construction. Indeed, the ungrammaticality of examples like those in (7) (from L&RH: 222) has led to the analysis of locative inversion as an unaccusative diagnostic:

\[(7) \quad \text{a. } *\text{At the supermarket on Main St. SHOP local residents} \]
\[\text{b. } *\text{In the cafés of Paris TALK many residents} \]
\[\text{c. } *\text{In the nursery SMILE half a dozen newborn babies} \]
\[\text{d. } *\text{In government offices COMPLAIN many disgruntled people} \]

(from L&RH: 222)

Some unergative verbs are, however, found in the construction. L&RH’s corpus-based study contains several instances of verbs of manner of motion with directional complements, such as \textit{ride} and \textit{walk} in (8). However, there is plenty of evidence suggesting that these verbs are unaccusative with directional complements, their unaccusativity being either a property of the construction (see Hoekstra & Mulder 1990 and Borer 1994) or the result of a process of meaning-shift in the lexicon (L&RH: chap 5) (see sec. 5.5.2 here).
In sum, as pointed out by L&RH locative inversion shows the distributional properties expected of an unaccusative diagnostic: unaccusative (and passive (see note 8)) verbs pattern differently from unergative (and transitive) verbs.

There are, however, two facts that may pose a challenge to the status of locative inversion as an unaccusative diagnostic: (i) not all unaccusative verbs may appear in this construction, and (ii) some unergative verbs (other than those in (8), with directional PPs) are found in this construction. That is, in L&RH’s (223) words, the class selected is both too large and too small.

The first observation is, in fact, unproblematic when we look at the behaviour of unaccusative verbs from a general perspective. It is commonly accepted that unaccusatives do not form a semantically homogeneous class. Since a lot of the diagnostics depend on certain semantic features, and, in particular, aspectual considerations, there is no reason to expect all unaccusative verbs to appear in all constructions that have unaccusativity properties. In fact, two main classes of unaccusative verbs have been postulated: (a) verbs of change of state and (b) verbs of existence and appearance (see L&RH, chap. 2; Mendikoetxea 1999, 2000).

Only the latter appear to be compatible with the construction, as shown by the following ungrammatical examples with (externally caused) verbs of change of state:

(9)  
\[
\begin{align*}
\text{a.} & \quad \text{*On the top floor of the skyscrapers BROKE many windows} \\
\text{b.} & \quad \text{*On the streets of Chicago MELTED a lot of snow} \\
\text{c.} & \quad \text{*On the backyard clotheslines DRIED the weekly washing}
\end{align*}
\]

Much more problematic is the occurrence of representatives of several major subclasses of unergative verbs: activity verbs with agentive subjects in (10), as well as agentive verbs of manner of motion, without directional PPs (11a), and verbs of emission (especially, light emission) (11b):

(10)  
\[
\begin{align*}
\text{a.} & \quad \text{On the third floor WORKED two young women called Maryanne Thomson} \\
& \quad \text{and Ava Brent, who ran the audio library and print room.[L. Colwin,} \\
& \quad \text{Goodbye without Leaving, 54]} \\
\text{b.} & \quad \text{At one end, in crude bunks, SLEPT Jed and Henry… [L. Bromfield,} \\
& \quad \text{the Farm, 18]}
\end{align*}
\]

(11)  
\[
\begin{align*}
\text{a.} & \quad \text{Inside SWAM fish from an iridescent spectrum of colours [J. Olshan,} \\
& \quad \text{the Waterline, 177]} \\
\text{b.} & \quad \text{On the folds of his spotless white clothing, above his left breast,} \\
& \quad \text{GLITTERED an enormous jewel. [N. Lofts,} \text{Silver Nutmeg, 460]}
\end{align*}
\]
status of an unaccusative diagnostic and to propose an alternative account which focuses on the discourse properties of the construction, as we shall see in the following section.

3. THE PRAGMATIC/DISCOURSE PROPERTIES OF LOCATIVE INVERSION

3.1. Presentational focus and discourse-familiarity in locative inversion structures

As mentioned above, locative inversion constructions are commonly analysed as involving presentational focus in discourse (see, among others, Bresnan 1994, Bolinger 1977, Rochemont 1986): the referent of the postverbal NP is introduced, or reintroduced, on the scene referred to by the preverbal PP. This accounts for why B is pragmatically-odd in the context of the interaction in (12), as opposed to C, which is a more natural response:

(12) A: I’m looking for my friend Rose
    B: #Among the guests of honor was sitting Rose
    C: Rose was sitting among the guests of honor

(from Bresnan 1994: 85)

According to Bresnan (1994), the oddness of B is double-folded: (i) Its interpretation depends on having set a scene that includes guests of honor, which A does not provide, and (ii) Rose, having been mentioned in A’s statement, cannot be (re-)introduced on the scene naturally. Penhallurick’s (1984) study provides quantitative data from several English novels which supports an analysis along these lines.

Under this proposal, a connection can be established between the discourse properties of the construction and the semantic properties of the verb, as a verb of existence or appearance. In presentational focus, a scene is set by the preverbal locative element and a referent (a theme) is introduced in that scene; i.e. location (loc) is predicated of a theme (th). Verbs of existence and appearance have argument structures of the type <th, loc> type, so they are naturally selected in this construction (see Bresnan 1994). The verbs in locative inversion structures are, therefore, verbs which are appropriate for introducing an entity into the discourse.

Birner (1994, 1995), however, has argued that restricting the functional properties of locative inversion to presentational focus does not account for the full range of verbs found in the construction. On the basis of a large corpus of naturally-occurring tokens, Birner (1994, 1995) argues that locative inversion is subject to a pragmatic constraint: the verb must not represent new information in the discourse. This is linked to the discourse function of all inversion constructions, including locative inversion, which is that of “linking relatively unfamiliar information to the prior context through the clause-initial placement of information that is relatively familiar in the discourse” (Birner 1995: 238). The felicity of an inversion depends on the relative discourse-familiarity between the preverbal and the postverbal constituents: the preverbal constituent may not present ‘newer’ information in the discourse than the postverbal constituent. The concept of relative discourse-familiarity implies that the postverbal constituent need not always be discourse-new, as expected if its function was purely presentational and it received presentational focus.¹¹

From this, it follows that the class of verbs which may appear in locative inversion constructions is not necessarily restricted to verbs of existence and appearance. The only requirement is that the verb should not contribute new information in the discourse; it must be ‘informationally-light’ (Birner 1994, adopting a
term from Hartvigson & Jakobsen 1974). Verbs of existence and appearance, the core class of verbs found in this construction, are inherently light, since they add no (or little) information to that provided to the preverbal NP which sets the scene, thus suggesting that some entity will exist in that scene. In fact, as L&RH point out, these verbs may often be replaced with the linking verb be, the most common verb in this construction. The requirement that the verb be informationally-light in discourse accounts also, according to L&RH, for the virtual absence of transitive verbs. In transitive sentences, it is unlikely that the notional subject may represent ‘newer’ information than the object, which together with the verb typically conveys new information about the subject.

Let us see now how Birner’s (1994, 1995) approach to the discourse function of locative inversion can be used to explain the two facts observed by L&RH regarding the class of verbs that appear in locative inversion structures: (i) not all unaccusative verbs may appear in this construction, and (ii) some unergative verbs are found in this construction.

3.2. Unaccusative verbs not found in locative inversion structures

The examples in (9) illustrate the incompatibility of unaccusative verbs of change of state like break, melt, dry and open with locative inversion structures. L&RH (233) claim that these verbs are not informationally light, since they predicate an (unpredictable) externally caused change of state, thus contributing discourse-new information. This is supported by the fact that when verbs of change of state have uses as verbs of existence and appearance, they are found in the construction. Two examples are given from L&RH: the use of break as a verb of coming into existence in (13a) and the use of open as a verb of appearance (paraphrasable as ‘become visible’) in (13b):

(13) a. Then broke the war, on those awful days in August, and the face of the world changed – I suppose forever. [Ed Phillpotts, The Red Redmaynes, 30]

b. Underneath him opened a cavity with sides two hundred feet high.
[Ed Phillpotts, The Red Redmaynes, 9]

(examples from L&RH: 234)

The class of verbs of change of state in L&RH includes, together with externally caused verbs of change of state, a much smaller class of internally caused verbs of change of state, including verbs like bloom, blossom, burn, decay, deteriorate, ferment, flower, rot, wither and so on. While externally caused verbs “imply the existence of an “external cause” with immediate control over bringing about the eventuality described by the verb: an agent, an instrument, a natural force, or a circumstance” (L&RH: 92), internal causation involves “causation initiated by, but also residing in, the single argument and hence dependent on its properties” (L&RH: 94). Thus, only some entities, by virtue of their own properties, blossom, molder or swell. The two classes of verbs of change of state differ substantially in some of their morpho-syntactic properties in the languages of the world. What is relevant here is that some internally caused verbs of change of state in English are ambiguous between a change of state reading or a stative/existential reading, as already pointed out by Milsark (1974). The verb bloom, for instance, is ambiguous between ‘come to be in bloom’ (change of state) and ‘be in bloom’. The ‘be in state’ interpretation is the one found in (14), with locative inversion:
In the garden may **BLOOM** the Christmas plant Joel Roberts Poinsett brought back from Mexico during his difficult ambassadorship there in the 1840s. [AP Newswire 1990, 30823236]

Similar examples can be found with other internally caused change of state verbs, such as **grow**, which is particularly well represented in both L&RH’s and Birner’s corpora. This verb can be found in locative inversion constructions when it has existential meanings (= ‘live rootedly’) or appearance meanings (‘develop’, ‘come to be’), but not when it means ‘increase in size’. Similarly, certain verbs of emission and spatial configuration may occur in locative inversion constructions with meanings compatible with the discourse function of the construction (‘appear’ or ‘come to exist’ by virtue of being emitted, in the case of emission verbs, and “simple position” or “maintain position”, in the case of spatial configuration verbs).

As for verbs of motion, unaccusativity by itself is not sufficient to account for the occurrence of verbs indicating inherently directed motion, such as **arrive** and **come**. in the construction. More tokens are found for the verb **come** in L&RH’s and Birner’s corpus than for any other verb, except **be**. L&RH show that these verbs are found in locative inversion structures only when they are informationally light in the context: when they can be viewed as verbs describing appearance on the scene, as in example (2), on which we based our initial description of these structures, given again in (15):

(15) …out of the house **CAME** a tiny old lady and three or four enormous people… [L. Bromfield, *The Farm*, 1]

Agentive verbs of manner of motion, such as **ride** and **walk** in (8), are characterized by having a component of meaning (manner of movement) which could, in principle, make them incompatible with the requirement that the verb be informationally light. L&RH argue, however, that when these verbs appear with directional PPs, expressing directed motion (i.e. in their unaccusative use), “the overall appearance interpretation associated with the construction serves to minimize the verb’s actual contribution”, making it compatible with the discourse function of the construction.

What all these examples show is that unaccusativity is not, in itself, sufficient to account for the presence of certain verbs in locative inversion constructions. The verb must be informationally light in the context, and this happens when the verb expresses existence and appearance meanings, not when it expresses change of state. This, in itself, however, does not invalidate the analysis of locative inversion as an unaccusative diagnostic, since unaccusativity tests do not apply uniformly across the different semantic classes of unaccusative verbs.

### 3.3. Unergative verbs in locative inversion constructions

A variety of unergative verbs are found in locative inversion structures: agentive verbs of manner of motion (like **swim** in (11a), repeated in (17a)), internally caused verbs of emission (like **glitter** in (11b), repeated in (17b)), verbs of bodily internal motion (like **flap** and **flutter** (see (18) below), and what L&RH (252) refer to as “a scattering of other activity verbs”, such as **work** and **sleep** in (10), repeated as (16):

(14) In the garden may **BLOOM** the Christmas plant Joel Roberts Poinsett brought back from Mexico during his difficult ambassadorship there in the 1840s. [AP Newswire 1990, 30823236]

(from L&RH: 235)
(16)  a. On the third floor WORKED two young women called Maryanne Thomson and Ava Brent… [L. Colwin, *Goodbye without Leaving*, 54]

     At one end, in crude bunks, SLEPT Jed and Henry… [L. Bromfield, *the Farm*, 18]

     (from L&RH: 224)

(17)  a. Inside SWAM fish from an iridescent spectrum of colours [J. Olshan, *the Waterline*, 177]

     On the folds of his spotless white clothing, above his left breast, GLITTERED an enormous jewel. [N. Lofts, *Silver Nutmeg*, 460]

     (from L&RH: 225)

Examples like those in (16) and (17) lead L&RH to abandon the syntactic approach to locative inversion in favour of a discourse/functional approach, after rejecting a ‘meaning-shift’ approach to the occurrence of unergative verbs in locative inversion structures (i.e. a process (= a lexical rule) which turns unergative verbs into unaccusative verbs with an existential meaning). The main reason to reject ‘meaning-shift’ is precisely the wide variety of unergative verbs found in the construction. For L&RH (252), this means that either “any statement of meaning shift would have to contain an elaborate disjunction of verb classes” or “we are left with a very broad and potentially not very informative characterization of the class: the class of internally caused monadic predicates.” In addition to this, the variation in distribution seems to depend on particular aspects of the meaning of individual verbs that allows them to occur in locative inversion constructions, as well as on the relationship between the postverbal NP and the verb, which L&RH show is crucial in some cases to determine the possibility of locative inversion. Meaning-shift affects classes of verbs and does not seem to be dependent on specific factors like these. Additionally, meaning-shift of the type discussed in L&RH (chapter 5) involves a change in telicity (for instance, with unergative verbs of manner of motion), which is not found here: unergative verbs, as well as existential unaccusative verbs, are atelic.

Having rejected a meaning-shift approach to the occurrence of unergative verb in locative inversion structures, L&RH argue that the discourse function of the construction suffices to explain why certain unergative verbs are licensed in it. If, following Birner (1994, 1995), locative inversion serves the purpose of linking relatively less familiar information to more familiar information in discourse, the requirements are: (i) that the postverbal NP should be less familiar than the preverbal PP, and (ii) that the verb should be informationally light in context: it should not contribute new(er) information, with respect to the postverbal NP. What L&RH suggest, following observations in Bolinger (1977), is that “the informational lightness requirement can be satisfied if the activity or process that the verb describes is characteristic of the entity the verb is predicated of” (L&RH: 253).17 Two properties of the verbs found in L&RH’s corpus support this proposal: (i) many of the unergative verbs found in locative inversion structures are among those that impose strict selectional restrictions on the arguments they are predicated of, and (ii) those which do not impose strict selectional restrictions are found only with a restricted set of subjects.

Among the verbs that impose strict selectional restrictions are verbs of emission and verbs of body-internal motion. These are verbs which, in L&RH’s (255) words, “describe the characteristic activities of the NPs that meet their selectional restrictions”, which means that the relationship between the NP and the verb is one of “mutual predictability”. For instance, the verb *flutter* describes a motion typical of bird wings
and flags: flags and bird wings are the typical things that flutter, and conversely, flutter is what flags and birds typically do. The occurrences of *flutter* in locative inversion structures in L&RH’s corpus have NPs referring to flags and birds as postverbal subjects:

(18)  

a. …. before the front there stretched a plateau whereon stood a flagstaff and spar, from the point of which *fluttered* a red ensign [E. Phillpotts, *The Red Redmaynes*, 70]  

b. …. in this lacy leafage *fluttered* a number of grey birds with black and white stripes and long tails. [Z. Grey, *Riders of the Purple Sage*, 62]  

(from L&RH: 255)

Similarly, only certain things glitter or sparkle (jewels, glass, metals) (see (17b)) or tick (clocks) and rumble (trucks) (see the locative inversion examples with these verbs in L&RH: 255), so that there is a relationship of mutual predictability and the verb qualifies as informationally light.

This proposal receives additional support, according to L&RH, from examples of locative inversion structures with unergative verbs which do not impose strict selectional restrictions on their only argument. In locative inversion structures, these verbs are “still found with arguments that are prototypically characterized by the activity or process described by the verb, although this constraint does not hold when these verbs are not used in the construction” (L&RH: 256). The examples given by L&RH (256) involve the verbs *chatter* and *doze*, which take NPs referring to ‘girls’ and ‘bathers’, respectively, as their subjects:

(19)  

a. … and around them *chattered* and *sang* as many girls with the silver spadella stuck through their black tresses and a red handkerchief tied across their shoulders [A. Munthe, *the Story of Sant Micheles*, 1]  

b. He thought of the free-form pool behind the bougainvillea hedge there, clogged with rafts of Styrofoam on which *dozed* naked oily bathers on their backs wide open to that sun. [A. Marshall, *The Brass Bed*, 228]  

(from L&RH: 256)

In these examples, chattering and singing are seen as characteristic of girls, while dozing is what bathers prototypically do in the context described. As pointed out by L&RH, if the name of a particular person was given, the verb would be contributing information about the activity it denotes, and the requirement that it be informationally light in the context would not be met.  

As for verbs of manner of motion, we have seen how with directional PPs these verbs are ‘unaccusativized’ (see examples in (8)), but when the PP indicates location, the same requirement applies: the verb must describe an activity characteristic of the existence of the postverbal NP. In the example given in (17a), swimming is the type of motion that characterises the existence of fish, and therefore the sentence expresses little more than the fact that there were colourful fish in the tank: In contexts like this, strict selectional restrictions are imposed on the postverbal NP of which a motion is described, which is not the case with directional PPs, a fact which seems to be supported by L&RH corpus findings (see L&RH’s (257-8) examples for *fly* and *hop*).

The conclusion is that, as long as the discourse function of the construction is preserved, there are no restrictions on the types of intransitive verbs found in the construction (apart from externally-caused verbs, which may never meet the discourse
requirements). Furthermore, there seems to be no evidence that a syntactically unaccusative analysis is necessary for these structures; for L&RH, the postverbal NP in these structures need not occupy the object position, as is the case for unaccusative verbs, but may be in the VP-internal subject position, which renders the unaccusative analysis unnecessary, an issue to which we will return in section 5.

4. ‘LIGHT INVERSION’ (LI) VS. ‘HEAVY INVERSION’ (HI): UNACCUSATIVITY REVISITED.

4.1. ‘Light inversion’ vs. ‘Heavy inversion’

L&RH’s conclusions are challenged by Culicover & Levine (2001) (C&L, henceforth), who argue that once we distinguish between two different phenomena: ‘Light Inversion’ (LI) and ‘Heavy Inversion’ (HI), it is possible to maintain the status of locative inversion (or ‘stylistic’ inversion in C&L’s terms) as a diagnostic for unaccusativity, if the construction is restricted to instances of LI. C&L claim that what seems locative inversion, with unergative verbs is possible only when the subject is ‘heavy’. Thus, the contrast between (20a), with an unaccusative verb (a verb of manner of motion with a directional PPs) and (20b), with a ‘light’ subject:

(20) a. Into the room WALKED Robin
   b. *In the room SLEPT Robin

(from C&L: 291-2)

If additional material is added to the subject or if the subject is prosodically prominent, however, inversion seems to be possible with unergative verbs like sleep:

(21) a. In the room SLEPT fitfully the students in the class who had heard about the social psych experiment that we were about to perpetrate.
   b. Remember Robin? Well, in the room SLEPT fitfully…ROBIN!

(from C&L: 293)

Crucially, the examples in (21) are not instances of ‘true’ locative inversion for C&L. While (20a) would have a structure like the one in (6ii), with the PP in subject position, after movement, and the postverbal NP in its base position as complement of the verb, as shown in (22a), the same is not true for examples like those in (21) with unergative verbs. These sentences have a more complex structure. Assuming, under the VP-internal subject hypothesis (see section 5.1 here), that all subjects are generated within the VP, either as Specifiers of the VP (external arguments) or as complements of the VP (internal arguments), the structures in (21) involve (i) (standard) movement of the NP subject to the surface structure subject position (<Spec, IP>), and (ii) subsequent movement of this element to a position adjoined to IP, via Heavy-NP shift, an operation, which C&L claim may affect not only ‘heavy objects’, but also ‘heavy subjects’. The PP would occupy some non-subject preverbal position, either because it moves there from a VP-internal position, or because it is base-generated in that position. The movement option is the one represented in (22b).\textsuperscript{19} C&L refer to these structures as ‘Heavy Inversion’ (HI), as opposed to the ‘Light Inversion’ (LI) structures with unaccusative verbs, which are the true locative inversion structures.\textsuperscript{20}

(22) a. Light Inversion (LI)
   [IP [PPI into the room] [VP [V walked] [NP Robin] [PP t_i]]]
Thus, examples like those in (21) give the illusion of being instances of locative inversion, while illustrating a very different phenomenon, that of Heavy Inversion. C&L argue that this is the only inversion operation available for unergative verbs and that it is found in a variety of contexts where locative inversion (i.e. LI) is impossible (see examples with infinitives, gerundives, etc. in C&L: 296-305) - a state of affairs which, according to C&L (296), makes it “a priori very unlikely that a single mechanism subsumes both HI and LI”. This, in turn, allows C&L to maintain the idea that ‘true’ locative inversion is only found with unaccusative verbs.

4.2. Some problems with C&L’s analysis of locative inversion structures

Together with problems regarding the syntax of a structure like that in (22b) (see note 19 here), C&L mention two problems which their proposal leaves unsolved. To link them with the discussion in Section 3, the two problems can be phrased as: (i) the incompatibility of HI with transitive verbs and (ii) the restrictions observed in LI constructions regarding the semantic classes of verbs. Regarding (i), the question asked by C&L (308) is, why is HI, as well as LI, incompatible with an overt object? While the incompatibility of LI with transitive verbs can be explained in a straightforward way, given that this structure is only possible syntactically with verbs lacking external arguments (i.e. unaccusative), why should the same restriction apply to HI, whose derivation, as represented in (22b), is such that it should be irrelevant whether there is an object or not in the VP? Why is the example in (23) ungrammatical, despite the heaviness of the subject?

(23) *Into the gas of our motorcycle had PUT some gum a bunch of teenagers in funny hats

(from C&L: 303)

C&L claim that any full discussion of this issue should take into account the fact that there are grammatical examples of HI with transitive verbs with non-referential objects. In particular, in the examples given by C&L, there is a verb with a reflexive object (sun oneself), the semi-idiomatic verb turn the corner, a verb with a cognate object (die a horrible death) and the semi-idiomatic expression heave deep sighs of relief. Two of these examples are reproduced in (24):

(24) a. The economist predicted that at that precise moment would TURN the corner the economics of half a dozen South American countries.

b. In the laboratory were DYING their various horrible deaths the more than ten thousand fruit flies that Dr. Zapp had collected in his garden over the summer.

(from C&L: 308)

It is not clear, however, how the distinction between referential and non-referential objects should affect the application of Heavy-NP shift. C&L argue that what distinguishes examples like (23) from those (24) is that no theta-role is assigned to the object by the verbs in (24), but why this should allow inversion to occur is left
unanswered. In fact, the real issue here is why (23) is ungrammatical and any answer to this question has to deal inevitably with the syntax of the structure.

As for (ii), the restrictions observed in LI constructions regarding the semantic classes of verbs, C&L (309) find no explanation for this “beyond its [the construction’s] pragmatically presentational impact”. However, no attempt is made to characterize the class of verbs either semantically or pragmatically.

But there are two additional problems that cast a shadow on C&L’s approach: (a) the fact that most postverbal subjects appear to be ‘heavy’, whether we are dealing with HI or LI, and (b) the fact that apparently ‘light’ subjects are possible with unergative verbs, with which we expect only HI to be possible. To understand what is going on here we have to deal with the correlation between ‘heaviness’ and ‘newness’ (or ‘focus’). Arnold et al. (2000) show that both grammatical structure (heaviness) and information factors (newness) influence word ordering: items that are new to the context tend to be complex, and items that are given or old information tend to be simple. In their corpus analysis of constructions with two objects, they found that shifted orders (PP/NP (IO) + NP (DO)) were more frequent when the DO was both new and heavier than the IO. As for locative alternation, following the reasoning in C&L’s analysis, we would expect LI to occur in contexts where the NP is the focus or relatively less familiar in discourse, in comparison with the preverbal PP, independently of whether the NP is heavy or light, while the opposite should be true for HI, which would occur when the NP is heavy, and should, in principle, be insensitive to ‘newness’. This is shown graphically in (25):

\[
\begin{array}{c|cc}
& \text{HEAVY} & \text{NEW/FOCUS} \\
\hline
\text{LI} & +/- & + \\
\text{HI} & + & +/- \\
\end{array}
\]

However, if Arnold et al’s findings for double object constructions apply here as well, we expect locative inversion to occur mostly both when the postverbal NP is ‘new’ (or ‘newer’, i.e. when it is focus), and when it is ‘heavy’, which could, in practice, make it difficult to distinguish between LI and HI. An analysis of the corpus examples used by L&RH reveals, indeed, that, the postverbal subject is overwhelmingly heavy, regardless of whether the verb is unergative or unaccusative. When it is a proper noun or a lighter NP, it is normally followed by material in apposition, as in (26a) with an unaccusative verb and (26b) with an unergative verb:

\[
\begin{align*}
\text{(26) a. } & \text{And when it is over, off will go } \text{Clay, smugly smirking all the way to the box office, the only person better off for all the fuss.} \\
& \text{[R. Kogan, “Andrew Dice Clay Isn’t Worth ‘SNL’ Flap” 4]} \\
& \text{(from L&RH: 221)} \\
\text{(26) b. } & \text{Above it FLEW a flock of butterflies, the soft blues and the spring azures complemented by the gold and black of the tiger swallowtails.} \text{[M. L’Engle A Swiftly Tilting Planet, 197]} \\
& \text{(from L&RH: 257)}
\end{align*}
\]

Since we have already said that unaccusative verbs may appear in both LI and HI constructions, the only way to differentiate between the two would be to show that it is impossible to have inversion structures with ‘light’ postverbal subjects with unergative
verbs, since under C&L’s analysis these verbs can only appear in HI constructions. But examples of inversion involving unergative verbs with light NPs are found in L&RH’s corpus: e.g. (17b), with the verb glitter whose subject is the NP an enormous jewel; (18a) with the verb flutter, whose subject is the NP a red ensign, to which we can also add the following example with the verb of light emission flash in (27):

(27) On one hand FLASHES a 14-carat round diamond. [Philadelphia Inquirer, “To the Top the Hard Way”, 1-D]

But the strongest argument against analysing all instances of locative inversion structures with unergative verbs as illustrating HI, rather than LI, is that there is no explanation for the restrictions observed by L&RH regarding the relation between the verb and the postverbal NP. C&L’s approach cannot account for the fact that for unergative verbs to occur with postverbal subjects, the verb must describe a process or an activity which characterizes the entity the verb is predicated of. The verb wave, for instance, has two meanings: an agentive meaning (‘greet’ or ‘beckon’) and a meaning which describes the type of motion made by flags and other objects when moved by the wind. Only this second meaning is found in locative inversion structures:

(28) a. From the flagpole WAVED a tattered banner.
   b. *From the roof WAVED a bearded student

L&RH’s explanation of the contrast in (28) is based on the observation that the verb wave, when it holds of things like banners, characterises their existence, since this is what banners typically do, while in no way can we say that waving (in the sense of greeting) is characteristic of bearded students, hence the ungrammaticality of (28b), which does not fulfil the pragmatic constraints that hold between the verb and its postverbal subjects in locative inversion structures.

In sum, C&L’s distinction between LI and HI provides a way of restricting true locative inversion (LI) to unaccusative verbs, thus allowing us to maintain a syntactic account of the construction. It is indeed the case that some of the examples given by L&RH involving unergative verbs can be analysed as instances of HI (see note 18). However, C&L’s proposal encounters numerous problems, both empirical and theoretical, and it cannot account satisfactorily for restrictions observed both in LI and HI structures. Two of these restrictions already pointed out by C&L themselves: (i) the incompatibility of HI with transitive verbs and (ii) the restrictions observed in LI regarding the semantic classes of verbs (i.e. not all unaccusative verbs may appear in LI structures). Additional problems have to do with the distinction between ‘new’ (‘or relatively unfamiliar’) and ‘heavy’, crucial to distinguish between LI and HI - most postverbal subjects appear to be heavy (whether we are dealing with LI or HI) - , and the fact that apparently ‘light’ NPs are possible with unergative verbs. But perhaps the most serious objection to C&L’s analysis, and one which makes a pragmatic account appear to be inevitable, is its inadequacy to provide an explanation to account for the pragmatic constraints that hold between the verb and the postverbal NP in locative inversion structures with unergative verbs. This fact is going to be crucial for the analysis we will develop in the following section.
5. A LEXICAL-SYNTACTIC APPROACH TO LOCATIVE INVERSION

So far, it seems that L&RH’s pragmatic approach to locative inversion is favoured over a syntactic approach, such as that in C&L, which does not take into account pragmatic considerations. The question now is to see whether L&RH’s approach can also account for the syntactic properties of the construction. As mentioned at the end of section 4 above, under L&RH’s claim that it is pragmatic considerations that can account for the presence/absence of certain verbs in the construction, the unaccusative analysis of locative inversion structures is rendered unnecessary. That is, L&RH are forced to argue that locative structures do not necessarily involve underlying structures like that in (5) (repeated in (29i)) and surface representations like that in (6ii), repeated as (29ii):

(29) i. ____ [vp V NP PP]

ii. PP, [vp V NP t₀]

In what follows, I examine the consequences of this claim and suggest an alternative analysis based on the lexical properties of verbs entering locative inversion structures.

5.1. The syntax of locative inversion in L&RH

L&RH claim that, while there is strong evidence that the preverbal PP is in subject position in locative inversion structures (see also Bresnan 1994, but cf. C&L), this does not necessarily mean that the postverbal subject is in object position. The unaccusative analysis of locative inversion follows Chomsky’s (1981, 1986) Theta-Criterion and Projection Principle: the fact that unaccusative verbs lack external arguments allows movement of the PP to that position (a non-theta position, i.e. a position which is not assigned a theta-role). Unergative verbs, however, have external arguments in <Spec, IP>, which blocks movement of the PP to that position.

From a theoretical perspective, the assumption that movement of the PP to <Spec, IP> means that the postverbal NP occupies necessarily an internal argument position is rendered unnecessary with the introduction of the VP-Internal Subject Hypothesis (Koopman & Sportiche 1991) (see note 3 here). According to this hypothesis, which is commonly accepted in the generative grammar literature, the subject argument is generated internally to the VP for all verbs, which leaves <Spec, IP> as a non-theta position and, therefore, as a possible landing-site for arguments other than the subject. Unergative and unaccusative verbs differ regarding the base position of their only argument within the VP, with unaccusatives having an internal argument, as in (30b) (and (29) above), and unergatives an external arguments in a Specifier position within the maximal projection of the verb (<Spec, VP>), as in (30a):²³

(30) a. [ip [Γ  I  [vp NP subj [V₁ V unerg <PP> ] ]]]
   b. [ip [Γ  I  [vp [V₁ V unacc NP obj <PP> ] ]]]

The structure in (30a), for unergative verbs, allows, in principle, for two subject positions in a clause: the ‘surface’ position (<Spec, IP>) and the ‘deep’ (VP-internal) position. This, according to L&RH, makes it possible to have locative inversion with unergative verbs, as well as with unaccusative verbs: in both cases, the preverbal PP would be in the ‘surface’ subject position <Spec, IP>, with the postverbal NP in its VP-internal subject position. In both cases, movement of the PP would allow the NP to
remain VP-internal. In the case of unergative verbs, however, movement of the PP to <Spec, IP> means that this position is no longer available for the external argument, which must move to a right-adjointed position, which L&RH take to be the ‘focus’ position (Rochemont 1986). Thus, L&RH offer (31) as a possible derivation of locative inversion structures with unergative verbs:

(31)  

a.  

\[
\begin{array}{c}
\text{[IP [I' I [VP NP_{subj} [V' V <PP>] ]]]}
\end{array}
\]

b.  

\[
\begin{array}{c}
\text{[IP PP_I [I' V_j + I [VP t_k [V' V_j <t_i>] ] NP_{subj/k}]]}
\end{array}
\]

The derivation in (31b) involves, thus, an operation akin to C&L’s Heavy-NP shift. In fact, L&RH argue that the NP in both unaccusative and unergative structures, may right-adjoint to the VP - a position associated with ‘focus’. For unergatives, this movement is obligatory: once the PP occupies <Spec, IP>. For unaccusatives, L&RH show examples in which the postverbal NP appears to be VP-internal (in its base position as an internal argument), as well as examples in which the postverbal NP appears to have moved to the right of the VP. Thus in (32a), the postverbal NP follows the VP-internal PP, after right-adjunction, while in (32b), the postverbal NP precedes the VP-internal PP, suggesting that it occupies a VP-internal position (highlighting in bold and italics is mine):

(32)  


b. From one cottage EMER′ED Ian with a spade, rubber boots and an enthusiastic expression. [R. Billington, Loving Attitudes, 60]

(from L&RH: 266)

The problem for L&RH is how to explain the example in (32b), given that it is the discourse requirements of the construction, i.e. the nature of the postverbal element as a focus, that is used to explain the requirement that the postverbal NP must obligatory move to right-adjoint to the VP. Saying that the verb is trivially compatible with the discourse requirements of the construction and that, therefore, movement of the NP is not obligatory, does not explain the optionality in (32), which appears to be related to ‘heaviness’, rather than to the status of the NP as focus. In section 4.2, it was shown in relation to Arnold et al.’s (2000) findings that it is often difficult to separate ‘heaviness’ and ‘focus/new information’ when dealing with shifted orders. However, according to the diagram given in (25) above, we should in principle be able to have locative inversion with unergative verbs with a ‘heavy’ subject, which is not necessarily a focus, while conversely, the subject of an unaccusative verb in a locative inversion structure is obligatorily the focus, but not necessarily ‘heavy’. Thus, if right-adjunction of the NP to VP was movement to a position in which the NP receives focus, we would expect this movement to take place obligatorily with unaccusative verbs and only in some case with unergative verbs, contrary to what L&RH suggest.

Furthermore, allowing unergative verbs into the construction by an analysis involving a right-adjunction operation opens the door to transitive verbs, which are very rarely found in the construction, as we have seen. The incompatibility of these verbs with locative inversion constructions can be neatly accounted for in syntactic terms in
an analysis in which the postverbal subject is in object position. Once we allow VP-
internal subjects to appear in the construction, there appears to be no reason why the
analysis in (31b) cannot apply to these verbs as well, as observed by C&L. It is
certainly not enough to say that these verbs are incompatible with the discourse function
of the construction.

In sum, L&RH’s discourse-based account of locative inversion structures cannot
explain the syntactic properties of the construction and fails at determining its properties
at the syntax-discourse interface.

5.2. Unergatives that ‘become’ unaccusatives in locative inversion structures: a
lexical-syntactic approach

5.2.1. Unergatives in unaccusative-like structures: the larger picture
The hypothesis to be developed here is that unergative verbs can be associated with an
unaccusative structure when they express an atelic existential meaning, as required by
the discourse function of locative inversion constructions. This hypothesis should be
taken as a starting point for an in-depth exploration of the properties of the construction
at the lexicon-syntax and syntax-discourse interfaces, as it is clearly beyond the limits
of this paper to offer a full account of the semantic, syntactic and pragmatic properties
of locative inversion structures.

The proposal that (some) unergative verbs exhibit properties associated with
unaccusative verbs is not new and has received different implementations in the
literature in relation to different facts, such as auxiliary selection with (unergative) verbs
of motion with directional PPs in Dutch and Italian (the Small Clause Analysis in
Hoekstra & Mulder 1990), locative structures with bare NPs in Spanish, such as Aquí
han dormido animales ‘Here animals have slept’ (Torrego 1989) and locative inversion
cases in Catalan (Rigau 1997). The phenomenon of unergative verbs with
unaccusative-like properties is, therefore, not restricted to locative inversion in English
and must receive an explanation within a more general context.

All these analyses emphasize the presence of a locative element as a crucial factor in
the ‘unaccusativization’ of the structure. Thus, in Spanish, for instance, only (certain)
unaccusative verbs allow bare plurals as their only argument, while unergative verbs do
not (Torrego 1989: 257), as the contrast between (33a) and (33b) illustrates:

(33) a. Vienen mujeres.
   come-3pl women
   ‘Women come.’/’There come women.’
   b. *Juegan niños
   play-3pl children
   ‘Children play.’

This generalization links together the object of transitive verbs (as in He comprado
libros ‘I have bought books.’) and the surface subject of unaccusative verbs, which, like
the object of transitive verbs is an internal argument within the VP, and can thus be a
bare plural. Unergative verbs, whose only arguments are in an external argument
position, are incompatible with bare plurals, as in (33b), unless a locative element is
found in preverbal position, as in the examples in (34) (cf. (33b) vs. (34a)):

(34) a. En este parque JUEGAN niños
    In this park play-3pl children
‘Children play in this park.’

b. En este árbol ANIDAN cigüeñas.
   In this tree shelter-3pl storks
   ‘Storks shelter in this tree.’

   (from Torrego 1989: 255)

Torrego’s explanation of the grammaticality in (34) is that, under certain conditions, unergative verbs in Spanish can ‘become’ unaccusative; i.e. they can have subjects which are base-generated in object position and they exhibit semantic and syntactic properties characteristic of unaccusative verbs.25

5.2.2. Syntactic vs. lexical-semantic (projectionist) approaches to the problem

There are, in principle, two alternative ways of accounting for this phenomenon within a formal grammar that recognizes the existence of unergative and unaccusative verbs as distinct grammatical classes: (a) a syntactic (constructionist) approach, and (b) a lexical-semantic (projectionist) approach. The syntactic approach is based on Hoekstra & Mulder’s (1990) analysis, according to which certain verbs listed as unergative in the lexicon appear in constructions associated with unaccusative verbs in the syntax. Hoekstra & Mulder (1990) put forward an analysis in which unaccusative verbs expressing existence and appearance take a small clause (SC) as their complements, as shown in (35) for a sentence like The train arrived at the station, with the NP as the subject of the SC and the PP as the predicate of the SC:

(35) _____ arrive [SC [NP the train] [PP at the station]]

Unergatives that undergo an unaccusativization effect appear in the syntax in structures like (35), like the manner of motion verb run when it occurs with a directional PP, as in (36):

(36) _____ ran [SC [NP a horse] [PP out of the barn]]

In sum, run is an unergative verb which may appear in the syntax in a structure typically associated with unaccusative verbs.

This is, in essence, the idea underlying the (neo)constructionist approach to the lexicon-syntax interface (see Borer 1994, 2005). The problem with this approach, as has often been pointed out, is how to restrict the process by which unergative verbs may appear in an unaccusative-like structure, as clearly not all unergative verbs may appear in, for instance, locative inversion structures, whereas for those verbs which do not express motion with directional complements certain restrictions apply.26

Projectionist lexical-semantic models of the lexicon-syntax interface, such as that in L&RH, also face problems of their own. The idea in these models is that the different meanings receive different lexical-semantic representations in the lexicon and that the syntactic (unergative or unaccusative) structure is projected from the lexical representation. Notice that, for L&RH, examples like the one in (34) fall under a (lexical) meaning-shift rule which converts manner of motion verbs with directional PPs into unaccusative verbs, in which the change component is emphasized and the activity component is secondary; the sentence expresses primarily a change in the location (see the discussion concerning the examples in (8) above). The other instances of locative inversion with unergative verbs, those that do not necessarily appear with directional PPs and which express meanings related to the existence of the NP of which the VP is
predicated, however, are not easily accounted for by a meaning shift rule, as argued by L&RH (see section 3.3. here), who are forced to abandon the idea that locative inversion structures are restricted to unaccusative verbs, as we have seen.

In Rappaport Hovav & Levin (1998) (RH&L, henceforth), these linguists present a more explicit model of the lexicon-syntax interface, in which the representation of the meaning of the verb is done in terms of event structures (templates), like those in (37), which contain primitive predicates (ACT, BECOME, CAUSE) and constants (STATE, MANNER) (see RH&L: 108):

\[
\begin{align*}
\text{(37) a.} & \quad [x \text{ ACT} <\text{MANNER}>] \quad \text{activity} \\
\text{b.} & \quad [x <\text{STATE}>] \quad \text{state} \\
\text{c.} & \quad [\text{BECOME} [x <\text{STATE}>]] \quad \text{achievement} \\
\text{d.} & \quad [[x \text{ ACT} <\text{MANNER}>] \text{ CAUSE [BECOME} [x <\text{STATE}>]]] \quad \text{accomplishment}
\end{align*}
\]

The basic meaning of a verb is determined by associating a constant with an event structure template by means of a number of canonical realization rules like those in (38) (see RH&L: 109):

\[
\begin{align*}
\text{(38) manner} & \quad \rightarrow [x \text{ ACT} <\text{MANNER}>] \\
\text{place} & \quad \rightarrow [x \text{ CAUSE [BECOME} [y <\text{PLACE}>]]] \\
\text{internally caused state} & \quad \rightarrow [x <\text{STATE}>] \\
\text{externally caused state} & \quad \rightarrow [[x \text{ ACT} \text{ CAUSE [BECOME} [y <\text{STATE}>]]]
\end{align*}
\]

The template in (37a) is the one associated with an activity (typically unergative) verb such as jig, run, creak, whistle... and (37d) is the event structure template associated with verbs expressing realizations in the Vendler/Dowty classification: an externally caused state (typically transitive verbs expressing external cause and their unaccusative counterparts, e.g., break, dry, harden, melt, open....)

The lexical rule of ‘Template Augmentation’ in (39) allows the addition of a component of meaning to an existing template so that, for instance, an activity associated with the template in (37a) may become a realization associated with the template in (37d), as illustrate for wipe in (40):

\[
\begin{align*}
\text{(39) Template Augmentation:} & \quad \text{Event structure templates may be freely augmented} \\
& \quad \text{up to other possible templates in the basic inventory of event structure templates.} \\
& \quad \text{(from RH&L 1998: 111)}
\end{align*}
\]

\[
\begin{align*}
\text{(40) a. } & \quad \text{Terry wiped.} \\
\text{b. } & \quad \text{Terry wiped the slate clean} \\
& \quad \text{(from RH&L 1998: 99)}
\end{align*}
\]

RH&L’s approach is designed to account for a phenomenon known as the ‘elasticity of verb meaning’ (or verbal polysemy), which allows atelic manner activity verbs like wipe in (40a) to express telic meanings as in (40b). Given that this is the only lexical rule available, there is no way of accommodating within this model the type of meaning-shift that we have observed for unergative verbs that become unaccusative, as there is no possible template augmentation rule that may derive states from activities. A different lexical process would have to be stipulated by which the same ‘name’ (i.e. phonological string) can be associated with constants of different ontological types, so that a constant like swim, for instance, can be associated with both an activity event structure or a state event structure in locative inversion constructions (see (17a) above).
Thus, different instances of ‘elasticity of verb meaning’ would be dealt with by different processes, with the additional problem of how to restrict the association of names with constants in event structure templates, a problem similar to that observed for the syntactic approach.

5.2.3. A lexical-syntactic approach to unergatives that become unaccusatives

Mateu (2002), drawing heavily on Talmy’s (1985, 1991, 2000) typological work, argues that the phenomenon of verbal polysemy can be better accounted for within a model in which lexical meaning is syntactically, rather than semantically, represented, along the lines suggested by Hale & Keyser (1993, 1997, 1998, 2000). Instead of providing a lexical semantic representation based on lexical templates like those in (37), Mateu (2002) argues that there are three basic argument structure types in the lexicon, as represented in (41) (where x is the head):

(41)  
a. x  
b. x  
c. x  
    x y z         x y

The relational syntax of argument structure in (41) is directly associated to its corresponding relational semantics in a uniform way, allowing homomorphism between the lexicon and the syntax, as in (42):

(42)  
a. The lexical head x in [(41a)] is to be associated to an eventive relation.  
b. The lexical head x in [(41b)] is to be associated to a non-eventive relation  
c. The lexical head x in [(41c)] is to be associated to a non-relational element

(Mateu 2002: 29)

While the structures in (41) encode grammatically relevant aspects of meaning that can be read off directly of the argument structure configurations, non configurational semantic properties of relational heads are encoded as binary features of heads, as specified in (43):

(43)  
[+R] positive semantic value associated to the source relation  
[-R] negative semantic value associated to the source relation  
[+T] positive semantic value associated to the transition relation  
[-T] negative semantic value associated to the transition relation  
[+r] positive semantic value associated to the non-eventive relation  
[-r] negative semantic value associated to the non-eventive relation

(Mateu 2002: 33)

That is, $[\pm R]$ indicates if the eventive relation has an Originator or Source or not ($\textit{build} = [+R], \textit{fear} = [-R]$); $[\pm T]$ indicates the semantic values of transitions, which lack an originator or source ($\textit{go} = [+T], \textit{stay} = [-T]$); and $[\pm r]$ indicates whether the non-eventive relation is associated with Hale & Keyser’s (1993) terminal coincidence relation ($\textit{path}$ in Jackendoff 1990) ($[+r]$) or whether it is associated with central coincidence relation
The minimal pairs in (44), then, have the representation in (45), where F stands for the functional category that introduces the external argument (absent in the lexical representation of (41)) in the syntax (from Mateu 2002: 33):

(44) a. John sent Peter to prison. \hspace{1cm} \text{telic causative}
    b. John kept Peter in prison. \hspace{1cm} \text{atelic transitive state}
    c. Peter went to prison. \hspace{1cm} \text{telic unaccusative}
    d. Peter was in prison \hspace{1cm} \text{atelic unaccusative state}

(45) a. $[F \text{John} \ [x_1 [+R] \ [x_2 \text{Peter} \ [x_2 [+r] \text{prison}]]]]$
    b. $[F \text{John} \ [x_1 [-R] \ [x_2 \text{Peter} \ [x_2 [-r] \text{prison}]]]]$
    c. $[x_1 [+T] \ [x_2 \text{Peter} \ [x_2 [+r] \text{prison}]]]$
    d. $[x_1 [-T] \ [x_2 \text{Peter} \ [x_2 [-r] \text{prison}]]]$

Notice that (45a, b), on the one hand and (45c, d), on the other have identical configurational properties; they differ in the non-configurational properties associated with the features $[\pm R], [\pm T] \ y \ [\pm r]$. For instance, the source relation in (45a) is dynamic $[+R]$, but it is stative in (45b) $[-R]$, but these two sentences have the same syntactically transparent argument structure, with John as ‘Originator’ or ‘Source’, Peter as ‘Figure’ and prison as ‘Ground’. Figure and Ground, inspired in Talmy (1985), are the two semantic roles associated, respectively, with the specifier and complement of a non-eventive relation ($z \ y$ in (41b), respectively).

This brief summary of Mateu’s lexical-syntactic model, though simplified for our purposes, will be enough to see how this approach to the lexical representation of predicates can account for the problem under discussion. Unaccusative verbs have, in Mateu (2002), the representation given in (46), where $x_1$ expresses a transitional eventive relation ($[+T] = \text{change}; [-T] = \text{state}$) and $x_2$ a non-eventive relation ($[+r] = \text{terminal coincidence} = \text{telic}; [-r] \text{central coincidence} = \text{atelic}$):

(46) $\begin{array}{c}
\text{FIGURE} \\
\text{x}_1 \\
\text{[±T]} \\
\text{z}_2 \\
\text{x}_2 \\
\text{y}_2 \\
\text{GROUND}
\end{array}$

Unergatives, on the other hand, are represented as expressing a source eventive relation, which can be dynamic $[+R]$ or stative $[-R]$, with an external argument ($z_1$) introduced in the syntax by a Functional Head (F), as in (47):

(47) $\begin{array}{c}
\text{FIGURE} \\
\text{x}_1 \\
\text{[±T]} \\
\text{z}_2 \\
\text{x}_2 \\
\text{y}_2 \\
\text{GROUND}
\end{array}$
The question of how unergatives become unaccusatives is equivalent in this model to the question of how a verb associated with a lexical relational representation such as that in (47) comes to be associated with a representation like that in (46).

As should be clear from the discussion above any model of the lexicon has to deal with the general issue of how verbs may be associated with different meanings and syntactic representations. In a lexical-syntactic model of this type, the question is how verbs become associated with more than one lexical relational structure. Mateu (2002) draws on the facts observed by Talmy (1985) regarding the difference between ‘satellite-framed’ and ‘verb-framed’ languages in complex telic path of motion constructions. In a satellite-framed language like English, sentences like that in (48a) involve ‘conflation’ of motion with manner in the verb (49a); by contrast in a verb-framed language like Catalan, in sentences like (48b) there is conflation of motion with path and the manner component is expressed as an adjunct (49b):

\[(48)\]
\begin{enumerate}
  \item The boy \textbf{danced into} the room.
  \item El noi \textbf{entrà a l’habitació ballant}.
    
    the boy went-into loc-prep room dancing
\end{enumerate}

\[(49)\]
\begin{enumerate}
  \item \begin{tabular}{ll}
    \textit{danced} & \textit{into}... \\
    \textit{V+manner} & \textit{path}
  \end{tabular}
  \item \begin{tabular}{ll}
    \textit{entrà} & \textit{... ballant} \\
    \textit{V+path} & \textit{manner}
  \end{tabular}
\end{enumerate}

The English sentence in (48a) is created by ‘conflating’ the two lexical structures in (50a) and (50b): the unergative structure in (50b) conflates with the eventive head of the unaccusative argument structure in (50a). This is possible whenever the head of the unaccusative structure (x₁) is non-saturated; i.e. when it lacks phonological content (as opposed to \textit{The boy \{went/got\} into the room}) (from Mateu 2002: 161):
Conflation is a syntactic operation which takes two different lexical structures and fuses them into one (like Hale & Keyser’s 1997 ‘Generalized transformation’). In particular, the structure in (50b) adjoins to $x_1$ in (50a). In semantic terms, the activity component of the (subordinate) unergative verb *dance* is being backgrounded, while the change (transitional) component associated with the (main) unaccusative eventive head is foregrounded. In sum, Mateu’s use of the notion of conflation accounts for both the syntactic facts ((50a) is an unaccusative structure), as well as for the semantic facts, without having to resort to a rule such as RH&L’s *Template Augmentation*, which is not designed to deal with facts like these.\(^{27}\)

The example given accounts for how an unergative verb like *dance* can appear in a complex telic path of motion unaccusative structure like that in (49a). We are now in a position to outline a solution for our unergative verbs which appear in (unaccusative) locative inversion structures. Locative inversion structures with unergatives that become unaccusatives have an atelic existential meaning in which the state component of the atelic existential structure is foregrounded and the activity component is secondary or subordinate. Let us take a typical example like that in (17a), repeated as (51), in which the verb contributes little more than an existential meaning.

\[
\begin{align*}
(51) & \quad \text{Inside SWAM fish from an iridescent spectrum of colours [J. Olshan, *the Waterline*, 177]} \\
\end{align*}
\]

The lexical relation structure underlying (51) would be the result of conflating the locative (unaccusative) structure in (52a), with the activity (unergative) structure in (52b), a process which adjoins $x_3$ to $x_1$: 

\[
\begin{align*}
 & \quad \text{Inside SWAM fish from an iridescent spectrum of colours [J. Olshan, *the Waterline*, 177]} \\
\end{align*}
\]
This analysis can account not only for the syntactic facts (i.e. that (51) involves an unaccusative structure), but also for the semantic facts: i.e. that the state component is emphasized and the activity component is subsidiary.

We will assume here, as Mateu (2002: 123) does for French impersonal constructions with unergative verbs, that the existential character of the unaccusative construction is related to the presence of a central coincidence preposition in ([-r]), which serves the purpose of relating Figure to Ground in a presentational context. As for the restrictions on the NP observed by L&RH, they are also related to the existential character of the structure. Sentences like (51), with complex argument structures, describe a situation in which the (subordinate) activity is taken to characterize the existence of the postverbal NP.

The notion of conflation can account therefore for unaccusativization in locative inversion contexts and it can easily account, as well, for the facts that RH&L analyse with reference to Template Augmentation (see (39)), which makes this approach
preferable (see Mateu’s 2002: 3.1.3. criticism of L&RH’s account of the elasticity of verb meaning). Notice that Mateu’s approach has aspects in common with Hoekstra & Mulder’s (1990) S(mall) C(lause) analysis in (36), in the sense that we insert a basically unergative verb into an unaccusative structure. The difference is that the process described, following Mateu (2002), is a lexical process, while on the basis of Hoekstra & Mulder’s syntactic analysis is the idea that the verb is inserted into a structure in the syntax. In fact, Mateu (2002: 179) refers to Hoekstra & Mulder’s SC analysis as “the final “surface” result of the relevant conflation process.” In more recent syntactic analyses, single argument verbs are not differentiated as unaccusative or unergative in the lexicon. Rather, unaccusativity (or unergativity) is a property of the construction in the syntax and verbs are freely inserted into either one or the other (see Borer 1994, 2005). The system is unrestricted, apart from some vague reference to some ‘compatibility’ between the verb’s meaning and the structure meaning.

In the analysis presented here, however, the meaning of the structure can be read off directly of the syntactic argument structure in the lexicon, in which certain components of meaning are emphasized and others are deemphasized. The fact that verbs are primarily associated with unergative or unaccusative structures accounts for many facts regarding their syntactic behaviour. The issue, however, of why some unergative verbs may conflate with unaccusative structures, while others apparently not, is something which requires further research. It also remains to be explained why fronting of the PP in the syntax is necessary for the existential meaning to obtain – an issue which is probably related with the syntax-semantics of existence at the level of Logical Form, as well as with properties operating at the syntax-discourse interface.

Thus, the present analysis captures the generalization that locative inversion structures are basically unaccusative, avoiding thus the problems observed in relation to L&RH’s syntactic account in (5.1) by maintaining that unergative verbs in locative inversion structures have ‘become’ unaccusative as a result of an operation over lexical relational structures (= conflation), at least in cases in which we cannot resort to HI. It can also characterize the verbs in these constructions as atelic verbs of existence with locative arguments, which, in turn, is related to the discourse properties of the construction, as described in section 2 and, in particular, to the requirement that the verb be informationally light in context.

6. CONCLUDING REMARKS

We have argued that the proper characterization of phenomena that have usually been classified as involving locative inversion involves, first, a distinction between LI and HI, with the latter not restricted to unergative verbs, as well as insensitive to the focus-topic distinction, and, second, a distinction between LI structures involving unaccusative verbs and LI structures involving unergative verbs which have been ‘unaccusativized’ by means of a conflation process. Some of the discourse properties of these structures, such as the requirement that the verb be informationally light, follow from the fact that the verbs in LI structures can be characterized as existential. Thus, the analysis provided can account in a principled way for the syntax, semantics and pragmatics of locative inversion structures in English. What remains to be done to gain a proper understanding of the construction is to clarify how the discourse properties of the structure relate to its syntactic properties. In particular, it remains to be specified what forces movement of the PP to a clause-initial position, leaving the NP argument in postverbal position. Given that constructions that involve a similar conflation process (e.g. French impersonal constructions and constructions involving ne-cliticization in
Italian in Mateu (2002: 2.2.3)) do not require fronting of the PP, these appear to be questions that are directly related to the discourse properties of the construction and are best addressed at the syntax-discourse interface.

What this shows, in sum, is that we need not abandon the idea of providing a unified account of the syntactic properties of locative inversion in favour of a discourse approach to the construction. Both syntactic and discourse properties can be accounted for under an approach in which unergative verbs that appear in locative inversion structures express existential meanings associated with an unaccusative structure in the lexicon. More research is needed to see if a similar analysis can be extended to there-constructions, which have properties in common with locative inversion structures.

NOTES

1 I am grateful to the editors of this volume for inviting me to participate in it. It has been a pleasure to collaborate with Prof. Angela Downing in the last decade as a member of the advisory board of the journal Estudios Ingléses de la Universidad Complutense, of which she is the editor. In these years I have had the opportunity to discuss with her many aspects of the study of language from different perspectives, which has been most enriching. This research has partly been funded by a Research Project granted by the Universidad Autónoma de Madrid (2003-2005). I wish to thank Cristóbal Lozano for discussions on many of the issues dealt with here and Carlos Piera for reading and (proof-)reading the manuscript. I also wish to thank the audience at the 38th Societas Linguistica Europaea Meeting, where part of the content of this paper was presented, especially Lucie Gournay, Liliane Haegeman and Jean Marie Marandin. All mistakes are, of course, mine.

2 Some transitive verbs may appear in the construction, but, as pointed out by L&RH (chap 6, fn 2) these transitive verbs often form fixed phrases (e.g. take place in In this room took place a meeting between several famous kings). See also the examples given in (24) below, from Culicover & Levine (2001).

3 The distinction between external and internal arguments, roughly equivalent to ‘notional’ subject and object, is due to Williams (1981). Basically, external arguments are ‘external’ to the VP, while ‘internal’ arguments are generated within the VP. The distinction is central to the unaccusative-unergative dichotomy in the Principles & Parameters model, despite redefinitions of the concept of ‘external’ argument with the introduction of the VP-internal subject hypothesis (Koopman & Sportiche 1991) (see section 5.1 here).

4 NP-movement is the GB equivalent to the Relational Grammar rule ‘Advancement-to-1’. Of course, the distinction between unaccusative and unergative verb involves the recognition of an underlying level of analysis where unaccusative and unergative verb show differences in the position of their only argument. This analysis is, obviously, not universally held (see, for instance, Van Valin 1990, against a syntactic distinction between these two classes of verbs).

5 Whether that position is the same as that occupied by the fronted NP in (6i) (<Spec, IP>), or whether it is a position ‘external’ to the IP is not something that will be discussed here. I will not deal either with the issue of whether the preverbal PP moves from a VP-internal position to a preverbal position or whether it is base-generated in that position (through Merge in Chomsky’s (1995, 2001) Minimalist Program). See Culicover & Levine (2001) for a discussion of these matters.

6 There is, of course, a third possibility for the base structure in (5), which does not involve movement of either the NP or the PP, but rather, involves insertion of the expletive element there in subject position (i) and which gives us sentences like that in (ii):

(i) there [VP V NP PP]

(ii) There [VP came an old lady into the room]

Like locative inversion, constructions with there have often been taken to be an unaccusative diagnostic (see, for instance, Burzio 1986). Locative inversion and there-insertion structures are also commonly
analysed as having the same functional properties (but cf. Birner & Ward 1993). Though we will not be dealing with there-constructions here, what is interesting for our purposes is that, despite some differences between the two structures, the class of verbs which appear in there-insertion constructions is practically the same as that of verbs which appear in locative inversion structures.

7 The examples in L&RH (chap 6) are based on a corpus of close to 2,100 naturally occurring instances of locative inversion constructions collected by B. Birner, B. Levin and G. Ward, with contributions from G. Green and L. Levin. There is a substantial overlap between this corpus and the one used by Birner (1994), though the two corpora are not the same. Appendix B in L&RH contains the lists of slightly more than 250 intransitive verbs and 130 passive verbs found in the construction.

8 Passive verbs are also commonly found in locative inversion constructions, as in (i) (from L&RH: 222):

    (i) On the house roof HAS BEEN MOUNTED a copper lightning rod oxidized green and…. [J. Updike, *Rabbit is Rich*, 111]

Passives have structures similar to that in (5), with an internal argument and no external argument. The link between unaccusatives and passives has often been pointed out in the literature (see Burzio 1986, Jaeglhi 1986, Roberts 1987, Mendikoetxea 1992, 1999).

9 There is a current debate in the literature on whether ‘telicity’ could be the common aspectual feature for all unaccusative verbs, as argued by, for instance, Ritter & Rosen (1988) and Borer (1994). See Rappaport Hovav & Levin (2002) for arguments against such an approach.

10 The example in (12B) may be plain ungrammatical, though, rather than pragmatically-odd. See Gournay (2004) who claims that there are aspectual restrictions on locative inversion: BE + ING is not attested in her corpus. Gournay’s account for this fact is that locative inversion refers to a state of affairs that need not be evaluated by the speaker. Hence its incompatibility with ‘modalized’ statements. BE + ING aspects denotes a process qualitatively evaluated: it is much ‘too modal’ to appear in locative inversion. I thank Lucie Gournay for bringing these facts to my attention.

11 As Birner (1995: 236) points out, the notion of discourse-familiarity is due to Prince (1992). It refers to whether the information in question has been mentioned or evoked in the prior discourse; if it has, it is ‘discourse-old’; if it has not, it is ‘discourse-new’. These two notions are to be distinguished from ‘hearer-old’ vs. ‘hearer-new’ (Prince 1992), which refers to whether the information is familiar or not to the hearer, according to its (assumed) knowledge store. Thus, some unit of information may be ‘hearer-old’, but ‘discourse-new’.

12 16% of the examples of PP inversions in Birner’s corpus had be as their central verb (213 out of 1039) (Birner 1995: 240). Birner (1994) distinguishes ‘be inversions’ (BI) from ‘non-be inversions’ (NBI), with somewhat different semantic and syntactic profiles. For instance, the preposed element is a locative PP in 97% of the NBI tokens, but only 29% of the BI inversions. Other researchers, however, quote other figures. Lucie Gournay (p.c.) tells me that in her corpus of 350 examples of locative inversion examples, 3/5 are BI. She uses contemporary texts, while Birner uses texts from the first half of the 20th C.

13 See Mendikoetxea (1999) for the differences between externally and internally caused change of state verbs in a language like Spanish.

14 The distinction between the two meanings of grow is relevant also for there-constructions, where only the existence and appearance meaning is found, as observed by Milsark (1974: 250).

15 As L&RH (241) point out, this verb is not used as a verb of motion strictly speaking in (15); rather, it simply describes appearance on the scene. It is the deictic orientation of this verb which explains, according to these linguists, why there are so many tokens with this verb, as opposed to go.

16 See L&RH’s (243-4) discussion on the occurrence of agentive verbs of manner of motion with source (rather than goal) PPs in locative inversion constructions.

According to this reasoning, the examples in (10) here, from L&RH (224), which contain proper nouns do not meet the discourse requirements of the construction, a fact that L&RH appear not to take into consideration. These should be analysed as instances of what Culicover & Levine (2001) refer to as ‘Heavy Inversion’ (see section 4 here) (but see Marandin 2003 for a different explanation which can make the occurrence of proper nouns consistent with the discourse requirements of the construction).

Alternatively, the whole structure could be moving to the left of the NP (see C&L: sec. 1). Preposing of the PP is taken to be a way of licensing the trace left by the subject after it moves to an adjoined clause in final position. It is not clear, though, how that process may take place, which C&L point out as a potential problem for their analysis. An alternative way of licensing that movement is by there-insertion, as in (i). Presentational there constructions provide independent motivation for right-movement of the subject:

(i) There SLEPT fitfully in the next room the students in the class who had heard about the social psyeh experiment that we were about to perpetrate.

(from C&L: 296)

As is pointed out by C&L (note 11), when the verb is unaccusative and the subject is heavy, there is no way of telling which of the two constructions is involved. Such a sentence will display the properties of both constructions.

I am grateful to Cristóbal Lozano (personal communication) for this observation.

Kirsner (1973) uses similar examples in there-constructions to claim that the verb is ‘deagentivized’ in these constructions. Notice that the only possible meaning in which (28b) could be felicitous is one in which the subject is waving in a way a flag would wave.

Since <Spec, VP> is a position reserved for VP-adverbs, the maximal projection of the verb, where the external argument is projected, has been referred to as V* or V\textsuperscript{max}. In Chomsky (1995, 2001), there is an additional verbal projection above VP, which is referred to as vP, which contains the external arguments in <Spec, vP>, outside the VP itself.

In fact, Torrego’s (1989) generalization is only valid for some classes of unaccusative verbs. Externally-caused unaccusative verbs of change (with se in Spanish) do not allow their NPs to be bare plurals, for independent reasons. A sentence like Se han roto ventanas is ungrammatical in its inchoative meaning ‘Windows have broken’, though it can have a passive/impersonal meaning. See Mendikoetxea (1999, 2000) for an account of these facts.

Notice that in Spanish this possibility is also available for transitive verbs with deleted objects. Hence the grammaticality of (ia) vs. (ib):

(i) a. En este colegio estudian niñas.
in this school study girls
b. *En este colegio estudian matemáticas niñas
in this school study mathematics girls

The sentence in (ia) means little more than ‘This is a girls’ school’, as opposed to the intended meaning in (ib).

For more details, see Rapppaport Hovav & Levin’s (1998, 2002) criticism of this model, along these lines. Mendikoetxea (forthcoming) offers a review of the constructionist vs. the projectionist approach to the lexicon-syntax interface.

See Mateu (2002: 3.1.3) for details concerning this operation and how it fits in within Chomsky’s (1995) Minimalist Program, as well as for why such an operation is not allowed in Romance-type languages.
REFERENCES


