Chapter 6

The Problem of Locative Inversion

The unaccusative diagnostics that we have discussed so far are instances of what we called "deep unaccusative diagnostics" in chapter 1. That is, the D-Structure object of an unaccusative verb becomes an S-Structure subject, so that its underlying grammatical relation is obscured on the surface. In this chapter we present a detailed study of another widely cited diagnostic, the locative inversion construction, which has been taken to be one of two surface unaccusative diagnostics in English (the other being the *there*-insertion construction, which we will only mention briefly). That is, in the locative inversion construction the D-Structure object of an unaccusative verb does not become an S-Structure subject; instead, it maintains a postverbal position.

Locative inversion has been claimed to be a diagnostic for the unaccusative syntactic configuration (Bresnan and Kanerva 1989, Coopmans 1989, Hoekstra and Mulder 1990, L. Levin 1986, among others). Two kinds of evidence typically figure in arguments for its diagnostic status: evidence involving the set of verbs attested in the construction and evidence involving the syntax of the construction. The set of verbs that appears in the locative inversion construction bears a startling resemblance to the unaccusative verb class. The verb most frequently found in the locative inversion construction is the verb *be*, which we will not discuss here, but whose presence in the construction does not detract from an unaccusative analysis. More relevant to our concerns is the existence of an intransitivity constraint on this construction that is noted in traditional grammars. But even more striking, the intransitive verbs most commonly found in this construction—verbs such as *come*, *go*, and *appear*—are "prototypical" unaccusative verbs. Finally, passive transitive verbs, which are classed with unaccusative verbs in having no external argument, also figure prominently in the locative inversion construction, contrasting

with the active form of the same verbs. Besides the nature of the verbs entering into the construction, certain aspects of the syntax of the construction are said to be explained by positing that the construction is restricted to verbs that lack an external argument—that is, unaccusative and passive verbs.

As we will show in section 6.2.2, however, there are problems with this initial characterization of locative inversion as an unaccusative diagnostic. First, only a semantically coherent subclass of the unaccusative verbs is represented in this construction. This restriction does not necessarily invalidate it as a diagnostic since most unaccusative diagnostics have semantic restrictions on them. More serious is the appearance of certain unergative verbs in this construction, a fact that is central to the analysis of locative inversion offered by Hoekstra and Mulder (1990). For example, as we discuss below, a corpus-based study of this construction shows that the presumably unergative verbs *work*, *chatter*, *glitter*, and *rumble* are all attested in the construction. In fact, some subclasses of the unergative class are extremely well represented among the verbs found in this construction. Thus, the appearance of these unergative verbs in the construction calls for an explanation.

There are several ways that the presence of unergative verbs in the locative inversion construction could be dealt with. One possibility is to simply deny that this construction is an unaccusative diagnostic and to find another explanation for its distributional properties. Rochemont and Culicover (1990) take this approach, although they have little to say about which verbs are found in the construction. A second possibility is to suggest that the unergative verbs found in this construction have two regularly related meanings, one compatible with an unaccusative analysis and the other with an unergative analysis, as we have suggested to account for certain unexpected instances of the resultative construction in chapter 5 and as implemented for locative inversion by Hoekstra and Mulder (1990).

In this chapter we opt for the first type of solution to the unergative verb dilemma. We argue that the locative inversion construction is not an unaccusative diagnostic in that it is not restricted only to verbs independently known to be unaccusative. Rather, we attribute its unaccusative-like distributional properties to the fact that this construction is associated with a particular discourse function, which in turn favors certain semantic classes of verbs. In particular, a subset of unaccusative verbs are shown to fit naturally with the discourse function of the construction, as

does a certain class of passive verbs. We then argue that in the appropriate circumstances unergative verbs are also compatible with the discourse function of the construction.

We discuss several reasons for preferring this account to a multiple meaning account that allows the diagnostic status of the construction to be preserved. First, although we have explained the presence of unergative verbs in other constructions that diagnose unaccusativity by positing multiple meanings for the verbs involved, possibly arising from meaning shifts, the instances of locative inversion with unergative verbs do not show the properties associated with such meaning shifts. In particular, it is not easy to identify semantically coherent subclasses of the unergative verbs that map onto a single subclass of unaccusative verbs, allowing a simple statement of the meaning shift that might underlie the locative inversion data. This situation contrasts with the resultative construction, where, as we showed in chapter 5, it was possible to formulate an explicit rule of meaning shift: agentive verbs of manner of motion and internally caused verbs of sound emission become verbs of directed motion. We show that in general the restrictions on the verbs in locative inversion are different and depend on more than the properties of the verb in the construction. Then we show that the syntactic properties of the construction are not actually explained by positing that the verbs in the construction are unaccusative. As there are no compelling syntactic reasons for assuming the unaccusative analysis of locative inversion, there is no reason to resort to the process of meaning shift to explain the presence of unergative verbs in this construction. There remains, then, no motivation for the unaccusative analysis. To conclude this chapter, we suggest that the properties that set off locative inversion are properties of all "surface unaccusative" diagnostics across languages.

In concluding this introduction, we want to describe briefly the illustrative examples of the locative inversion construction used throughout this chapter. For the most part, these are naturally occurring examples taken from a corpus of close to 2,100 instances of the locative inversion construction collected by B. Birner, B. Levin, and G. Ward, with contributions from G. Green and L. Levin. (Although there is a substantial overlap between this corpus and the corpus of locative inversions discussed in Birner 1992, 1994, the two corpora are not the same.) No effort was made to select the tokens of the construction from a "balanced" collection of texts; in fact, we actively sought tokens from authors who showed a propensity for using the construction. Although the selectional

criteria limit the types of conclusions that can be drawn from these tokens, they should not detract from our own primary goal: explaining the actual types of verbs found in locative inversion. Our corpus of locative inversions reveals clear trends concerning verb types, which we discuss throughout this chapter. Most striking of all, it demonstrates that common wisdom notwithstanding, the set of locative inversion verbs is quite large; we have found slightly more than 250 intransitive verbs and 130 passive verbs, which are listed in appendix B. Furthermore, the composition of the list of verbs suggests that the list would be expected to expand in certain areas if more data were available; we discuss this as appropriate throughout the chapter.

6.1   Locative Inversion: An Introduction

In this section we briefly sketch the hallmarks of the locative inversion construction. A typical instance of this construction is given in (1); in this and subsequent examples from the corpus, the relevant verb and any accompanying auxiliaries are given in small capital letters.

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

The name given to this construction—locative inversion—reflects two properties of the construction. First, it is characterized by a noncanonical word order, "PP V NP," that appears to be the result of switching the positions of the NP and the PP in the canonical "NP V PP" word order, particularly since the inverted and noninverted sentences are near paraphrases of each other; for instance, (1) can be paraphrased by (2).

(2) The towers and spires of a town which greatly resembled Oxford appeared in the distance.

The second hallmark of this construction is the presence of a PP—typically a locative or directional PP—in preverbal position;[1] the construction takes its name from this PP. We will call this PP the *preverbal* PP. The preverbal PP in (1) corresponds to the postverbal PP in (2), the noninverted counterpart of this sentence. A third property of the construction will be central to our discussion. With rare exceptions, the verb in the locative inversion construction must be intransitive,[2] and it is this restriction, combined with the observation that not all intransitive verbs are found in this construction, that has led to the investigation of whether this construction is a possible unaccusative diagnostic.

Although the locative inversion construction could receive the analysis that its name suggests—that is, it could simply be derived by inverting the subject of an intransitive verb and a PP complement—such an analysis would have to be rejected as not being structure-preserving (Emonds 1976); in fact, locative inversion has figured in the debate over structure preservation. One appealing feature of the proposal that locative inversion is an unaccusative diagnostic is that a structure-preserving analysis becomes possible if the construction is restricted to unaccusative verbs. On this analysis, the D-Structure form of a locative inversion construction is most likely as schematized in (3), the PP moving to become the subject at S-Structure. (Alternatively, as Hoekstra and Mulder (1990) propose, the NP and PP could form a small clause; see section 6.7.)

(3) e [$_{VP}$ V NP PP]

On the unaccusative analysis, the postverbal NP is a D-Structure object of the verb. As the postverbal NP does not originate as the subject of the verb in the construction, the name "inversion" is no longer apt; nevertheless, we continue to refer to this construction using the established label "locative inversion."

An introduction to locative inversion would not be complete without a discussion of the similarities and differences between it and the *there*-insertion construction. This construction, which was discussed in section 4.1.3, is illustrated in (4) with a pair of sentences related to the locative inversion in (2). These two *there*-insertion sentences differ with respect to the placement of the PP; (4b) is an instance of the type of *there*-insertion referred to as an outside verbal.[3]

(4) a. In the distance there APPEARED the towers and spires of a town which greatly resembled Oxford.
    b. There APPEARED in the distance the towers and spires of a town which greatly resembled Oxford.

The hallmark of the *there*-insertion construction is the presence of *there* as the subject of the verb. Some researchers (see, for example, Kuno 1971, Postal 1977) have suggested that locative inversions are derived from *there*-insertion constructions of the form in (4a), where a PP precedes *there*, by dropping *there*, but Bresnan (1993) presents evidence against this analysis. Also of interest is that *there*-insertion has been argued to be an unaccusative diagnostic (Burzio 1986, L. Levin 1986, Stowell 1978, among others; see also section 4.1.3). Like locative inversion, it is rarely found with transitive verbs and shows the basic distributional properties

of an unaccusative diagnostic. A further, particularly interesting similarity is that *there*-insertion is also found with a class of verbs that is both "too big" and "too small" in the same sense as the class found in locative inversion. Although there are some differences between the constructions, we believe that once the inside verbals discussed in section 4.1.3 are set aside, some form of the solution to the distributional dilemma for locative inversion can be extended to the remaining instances of *there*-insertion; for this reason, we will not systematically discuss *there*-insertion further in this chapter.[4]

6.2   The Verbs Found in Locative Inversion

In this section we review the verbs that enter into locative inversion, focusing first on the general distributional characteristics of the construction that have suggested that it is an unaccusative diagnostic and then turning to the properties that pose a problem for this analysis.

6.2.1   General Distributional Characteristics

The surface distribution of the locative inversion construction appears to justify the claim that it can serve as an unaccusative diagnostic. Locative inversion is found with intransitive verbs that are considered to be among the prototypical members of the unaccusative class, including certain verbs of appearance, as in (5), verbs of existence, as in (6), and verbs of inherently directed motion, as in (7). The verbs of existence that are attested in the construction include verbs of spatial configuration with inanimate subjects (i.e., in their simple position sense), as in (8).

(5) a. Over her shoulder APPEARED the head of Jenny's mother. [M. Spark, *The Prime of Miss Jean Brodie*, 27]

   b. From such optical tricks ARISE all the varieties of romantic hallucination ... [R. Goldstein, *The Late-Summer Passion of a Woman of Mind*, 167]

   c. ... from the lips of this poor soft-brained creature ISSUE a flow of beautiful words in the accent of some place that was certainly not Ballyderrig. [M. Laverty, *Never No More*, 20]

(6) a. At night, under the lights, and the rapt presence of forty or fifty guards in the corners and the corridors and the bus debarkation point, EXISTED that stricken awareness of a dire event to which the air itself can seem to be sensitive. [NMAN 187 (39); cited in H. H. Hartvigson and L. K. Jakobsen 1974:57]

    b. Here and there FLOURISH groves of aged live oaks, planted to shadow the manor houses of the plantations that the road originally served. [C. von Pressentin Wright, "Plantation Mansions on the Mississippi," 14]

    c. Far below the jagged spires and knife-edge ridges of the Dortmund range, smug and secure in the shadows of those glistening, snow-capped cathedrals, THRIVES the quaint town of Kringlewald. [W. Hjortsberg, *Alp*, 14]

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

    b. And when it's over, off WILL GO Clay, smugly smirking all the way to the box office, the only person better off for all the fuss. [R. Kogan, "Andrew Dice Clay Isn't Worth 'SNL' Flap," 4]

    c. ... with him HAD ARRIVED hoards [*sic*] of workmen and carpenters ... [M. Piercy, *Summer People*, 235]

(8) a. ... from his hip pocket PROTRUDED a notebook with metal covers. [J. Steinbeck, *The Grapes of Wrath*, 240]

    b. On the black lacquer top of the piano PERCHED three brass-framed pictures ... [J. Olshan, *The Waterline*, 303–4]

    c. Above the bed HANG two faded prints of men playing polo. [S. Cheever, *Elizabeth Cole*, 70]

In addition, verbs of manner of motion and, much less frequently, verbs of sound emission are found in locative inversion constructions when they take directional phrase complements, as in (9) and (10). This behavior is consistent with the arguments in chapter 5 that such verbs are unaccusative when they take directional complements.

(9) a. Down the dusty Chisholm Trail into Abilene RODE taciturn Spit Weaver, his lean brown face an enigma, his six-gun swinging idly from the pommel of Moisshe, the wonder horse. (Green 1980:590, (15c))

    b. Into this heady atmosphere STRIDES Tucker Muldowney (Kirk Cameron), a maddeningly self-confident, gee-shucks freshman from Oklahoma who has entered Kenmont on a debating scholarship. [D. Kehr, "Resolved: 'Listen' Is a Boring Movie," 20]

    c. Up the stairs BOUNDED Senator Dickerson, wearing an outlandish Hawaiian shirt. [R. Levitsky, *The Love That Kills*, 82]

d. Into this scene WALKED Corky's sister, Vera, eight years old, who had been at a Brownies meeting, sewing a crayon pouch. [A. Beattie, *Picturing Will*, 137]

(10) Through the orchards RATTLED the field station's Ford pickup, bearing its two silent passengers. [R. Rothenberg, *The Bulrush Murders*, 18]

As mentioned repeatedly throughout this book, the Unaccusative Hypothesis was prompted in part by the observation that the single argument of an unaccusative verb patterns like the object of a transitive verb or the subject of a passive verb with respect to certain phenomena. And in fact, the locative inversion construction is also found with passive verbs, as in (11).

(11) a. From this trench WERE RECOVERED sacrificial burials and offerings dating to the final days of the Aztec empire. ["Lord of the Wind: Aztec Offerings from Tlatelolco, Mexico," exhibit sign]

   b. On the house roof HAS BEEN MOUNTED a copper lightning rod oxidized green and an H-shaped television aerial, very tall to catch the signals out here. [J. Updike, *Rabbit Is Rich*, 111]

   c. That spring she monopolized with her class the benches under the elm from which COULD BE SEEN an endless avenue of dark pink May trees, and HEARD the trotting of horses in time to the turning wheels of light carts returning home empty by a hidden lane from their early morning rounds. [M. Spark, *The Prime of Miss Jean Brodie*, 104–5]

Although locative inversion is found with prototypical unaccusative and passive verbs, not all intransitive verbs appear to be compatible with this construction.

(12) a. Local residents shop at the supermarket on Main St.
   b. *At the supermarket on Main St. SHOP local residents.

(13) a. Many artists talk in the cafés of Paris.
   b. *In the cafés of Paris TALK many artists.

(14) a. Half a dozen newborn babies smile in the nursery.
   b. *In the nursery SMILE half a dozen newborn babies.

(15) a. Many disgruntled people complain in government offices.
   b. *In government offices COMPLAIN many disgruntled people.

As these examples suggest, the intransitive verbs that are not found in this construction fall into the semantic classes of verbs whose members are unergative. Most are internally caused agentive activity verbs. Finally, transitive verbs are not found in this construction (though see note 2).

(16) a. Archeologists recovered sacrificial burials from this trench. (cf. (11a))
     b. *From this trench RECOVERED archeologists sacrificial burials.
     c. *From this trench RECOVERED sacrificial burials archeologists.

(17) a. An electrician mounted a copper lightning rod on the house roof. (cf. (11b))
     b. *On the house roof MOUNTED an electrician a copper lightning rod.
     c. *On the house roof MOUNTED a copper lightning rod an electrician.

These distributional properties of the locative inversion construction are those expected of an unaccusative diagnostic: passive verbs and unaccusative verbs pattern differently from transitive verbs and unergative verbs. The former are set apart from the latter in having a direct internal argument, but no external argument.

6.2.2 Problematic Characteristics of the Distribution

Despite what the surface distributional characteristics suggest, the set of verbs found in the locative inversion construction is not precisely the expected set if this construction is a diagnostic that picks out all and only the unaccusative verbs. The class of verbs that is selected is both too small, in that not all unaccusative verbs are found in this construction, and too large, in that some purportedly unergative verbs are found in this construction. This pattern is not unfamiliar: we encountered similar patterns with both the resultative construction and the causative alternation. We will approach the comparable problems posed by the locative inversion construction bearing in mind the results of our studies of the other two constructions. We begin by illustrating the two problems for the claim that the locative inversion construction is an unaccusative diagnostic.

First, not all unaccusative verbs are found in the locative inversion construction. In particular, unaccusative verbs of change of state are typically not attested in the construction.

(18) a. *On the top floor of the skyscraper BROKE many windows.
      b. *On the streets of Chicago MELTED a lot of snow.
      c. *On backyard clotheslines DRIED the weekly washing.

Second, some verbs found in the locative inversion construction seem to be unergative verbs, a property that has also been observed and discussed by Hoekstra and Mulder (1990). The examples in (19) involve various types of activity verbs with animate subjects, including verbs that are taken to be prototypical members of the unergative class.

(19) a. Opposite the landing-place stood half-a-dozen donkeys with saddles on their backs and bunches of flowers in their bridles, 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 San Michele*, 1]
      b. On the third floor WORKED two young women called Maryanne Thomson and Ava Brent, who ran the audio library and print room. [L. Colwin, *Goodbye without Leaving*, 54]
      c. Behind the wheel LOUNGED a man uniformed with distinct nautical flavour. [A. W. Upfield, *The Widows of Broome*, 109]
      d. At one end, in crude bunks, SLEPT Jed and Henry ...
          [L. Bromfield, *The Farm*, 18]
      e. He thought of the free-form pool behind the bougainvillea hedge there, clogged with rafts of Styrofoam on which DOZED naked oily bathers lying on their backs wide open to that sun. [A. Marshall, *The Brass Bed*, 228]

Also problematic is the appearance of certain agentive verbs of manner of motion in the locative inversion construction with a locative PP as the preverbal PP.

(20) a. Above them PRANCED the horses on the Parthenon frieze ...
          [P. D. James, *A Taste for Death*, 352]
      b. Rainborough looked at these hangings.... They were profusely covered with leaves and flowers among which RAN, FLEW, CRAWLED, fled, pursued, or idled an extraordinary variety of animals, birds, and insects. [IMFE 187 (51); cited in H. H. Hartvigson and L. K. Jakobsen 1974:58]
      c. Around her heaved and SHUFFLED the jeaned and T-shirted, apparently semidestitute crowd that peoples transatlantic aircraft. [P. Lively, *Perfect Happiness*, 17]

d. Inside SWAM fish from an iridescent spectrum of colors ...
[J. Olshan, *The Waterline*, 177]

As discussed in section 5.1.1, these verbs are basically unergative but behave like unaccusative verbs in the presence of directional PPs, so that the existence of locative inversion constructions with agentive verbs of manner of motion plus directional PPs, as in (9), would not be unexpected if this construction were an unaccusative diagnostic. However, since agentive verbs of manner of motion generally show unaccusative behavior only in the presence of directional PPs, the existence of locative inversion constructions with agentive verbs of manner of motion involving locative PPs such as those in (20) is problematic.

A survey of the corpus of locative inversion constructions shows another unexpected class of verbs that figures quite prominently in this construction: members of the class of verbs of emission. As discussed in section 4.1.1.1, there is substantial evidence that these verbs are unergative, yet members of this class—especially of some of its subclasses—are quite well represented among the verbs found in the locative inversion construction. We give examples with verbs of light emission in (21), verbs of sound emission in (22), and verbs of substance emission in (23); the corpus contains no attested examples involving the smallest of the subclasses, the verbs of smell emission. Verbs of light emission are probably the best represented, twelve of the twenty-one members of this set listed in B. Levin 1993 being attested.

(21) a. ... through the enormous round portal GLEAMED and GLISTENED a beautiful valley shining under sunset gold reflected by surrounding cliffs. [Z. Grey, *Riders of the Purple Sage*, 53]

b. On one hand FLASHES a 14-carat round diamond; on the other hand SPARKLES an 8-carat stone flanked by the diamond-studded initials WN. [*Philadelphia Inquirer*, "To the Top the Hard Way," 1-D]

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

(22) a. In the hall TICKED the long-case clock that had been a wedding present from her parents. [P. Lively, *Perfect Happiness*, 173]

b. And in their wake RUMBLED trucks to haul off the remains.
[S. Paretsky, *Burn Marks*, 157]

(23) Over a Bunsen burner BUBBLED a big, earthenware dish of stew.
[M. L'Engle, *A Wrinkle in Time*, 39]

Furthermore, the instances of verbs of sound emission in (22) are found with a locative PP, and there is no reason to associate this use, unlike the use with a directional PP as the preverbal PP seen in (10), with an unaccusative analysis. As unergative verbs found in the locative inversion construction, verbs of emission present a problem for the analysis of locative inversion.

One further easily distinguishable—though problematic—class of intransitive verbs is represented among the locative inversion verbs: a set of verbs that can be described as *verbs of body-internal motion*, a class we have not previously discussed in this book. These verbs describe movements of particular body parts, no displacement of the whole body necessarily being entailed. (Agentive verbs of manner of motion differ from these verbs in describing the movement of the whole body.) Members of this class are listed in (24).

(24) fidget, flap, flutter, gyrate, jiggle, pivot, rock, squirm, stir, sway, totter, twitch, wave, wiggle, wobble, wriggle, ...

These verbs are occasionally found in the locative inversion construction.

(25) Black across the clouds FLAPPED the cormorant, screaming as it plummeted downward and disappeared into the wood.
[M. L'Engle, *The Small Rain*, 332]

(26) ... and in this lacey leafage FLUTTERED a number of grey birds with black and white stripes and long tails. [Z. Grey, *Riders of the Purple Sage*, 62]

Like agentive verbs of manner of motion and internally caused verbs of sound emission, these verbs are found in the locative inversion construction both with directional PPs as in (25) and with locative PPs as in (26). It is likely that these verbs resemble agentive verbs of manner of motion and internally caused verbs of sound emission in becoming verbs of directed motion in the presence of a directional phrase, so that the only problematic instances of locative inversion with these verbs are those such as (26) that involve locative PPs.

From the point of view of meaning, it is likely that these verbs are internally caused verbs. Typically, they take animate arguments that may, but need not, exert control over the action. Like other internally caused verbs, they do not regularly show transitive causative uses.[5]

(27) a. *The high heels tottered/wobbled the model.
      b. *The long lecture fidgeted/squirmed/wiggled the class.

If these verbs are indeed internally caused, then, by the Immediate Cause Linking Rule, they should be unergative. In fact, these verbs show certain properties that confirm an unergative classification. They are found in the *X's way* construction, as in (28). In addition, there are *-er* nominals related to these verbs, as in (29).

(28) a. He fidgeted his way out of her confessionals. [N. McKelvy, *Where's Ours?*, 162]

    b. ... people who could not possibly have squirmed their way into the rehearsals ... [Brown Corpus 894223]

    c. ... tapping their way along the pavement in the sort of high-heeled shoes that are supposed to go with attainment ... [A. Brookner, *A Friend from England*, 170]

    d. A heron flapping its way with lazy sweeps emphasised the emptiness as it left the estuary to travel inland. [M. Wesley, *A Sensible Life*, 9]

(29) flapper, rocker, wobbler, wriggler, ...

Thus, the appearance of these verbs in locative inversion constructions with locative PPs is problematic just as the appearance of agentive verbs of manner of motion in such constructions is.

The instances of locative inversion cited in this section involve representatives of several major subclasses of the unergative verbs. Their existence poses a problem if, as has been proposed in previous work, locative inversion is indeed a diagnostic for unaccusativity. One possible solution to this problem is to treat the problematic instances of locative inversion as exceptional. However, the phenomenon appears to be too pervasive for this approach to be viable. For instance, as noted above, just over half of the verbs of light emission listed in B. Levin 1993 are attested in this construction. In addition, a substantial number of agentive verbs of manner of motion occur in this construction without directional phrases. We suspect that an examination of additional corpus data would reveal that other members of these classes are eligible for locative inversion. And, although we do not go into details here, a study of naturally occurring instances of *there*-insertion shows a substantial overlap in the verbs occurring in this construction and locative inversion, also suggesting that the locative inversions with unergative verbs cannot simply be ignored. A second possibility is to propose that these unergative verbs allow a second meaning that is associated with an unaccusative analysis, possibly as a consequence of semantic class shift; a form of the multiple meaning

approach is taken by Hoekstra and Mulder (1990), whose paper we discuss in section 6.7.

Here we argue for a third possibility, which involves dismissing the proposal that the locative inversion construction serves as an unaccusative diagnostic and proposing an alternative account of its unaccusative-like properties. We argue that it is the discourse function of the locative inversion construction that restricts the set of verbs attested in it. In section 6.3 we elaborate on the discourse function of the construction and show how it imposes constraints on the verb in the construction. In sections 6.4 and 6.5 we consider in more detail instances of locative inversion with various types of verbs and show how their properties are consistent with the demands imposed by the discourse function of this construction. In particular, we show that the demands of the discourse function can be met by a subclass of unaccusative verbs and, in the appropriate circumstances, by a wide variety of unergative verbs as well. Thus, the ability of a verb to be found in the unaccusative syntactic configuration is neither a necessary, nor a sufficient, condition for it to be found in the locative inversion construction. Then, in section 6.6 we show that the syntactic properties of the construction are not explained by appeal to an unaccusative syntactic analysis. Hence, no motivation remains for postulating an unaccusative analysis of the verbs in this construction.

6.3   The Discourse Function of Locative Inversion

Various researchers have noted that there are restrictions on the verbs found in the locative inversion construction. Bresnan (1993), for instance, proposes a restriction in terms of semantic roles. The locative inversion construction is available only to verbs that take theme and location arguments: "Locative inversion can occur just in case the subject can be interpreted as the argument of which the location, change of location, or direction expressed by the locative argument is predicated—a THEME in the sense of Gruber 1976 or Jackendoff 1972, 1976, 1987" (Bresnan 1993:10–11; small capitals in the original). One consequence of this restriction is that if a verb takes a locative adjunct, then it will not undergo locative inversion.

(30) a. *Among the guests was knitting my friend Rose. (Bresnan 1993, (10b))
      b. *Onto the ground had spit a few sailors. (Bresnan 1993, (11b))
      c. *On the corner smoked a woman. (Bresnan 1993, (14b))

Others, including Bolinger (1977) and Penhallurick (1984), characterize the set of locative inversion verbs as verbs of existence and appearance, a set of verbs that has been singled out as relevant to other linguistic phenomena, including in English *there*-insertion (Kimball 1973), extraposition from NP (Guéron 1980), and sentence accent (Faber 1987); see also Firbas 1966, 1992. There is an overlap between this characterization and Bresnan's, since verbs of existence and appearance generally describe the existence or appearance of a theme at a location, requiring verbs of this type to take precisely the set of arguments that Bresnan specifies.[6] But the real question is why this verb class is relevant to the construction. An answer to this question could provide insight into the wider class of verbs found in locative inversion.

The observed semantic restriction of locative inversion to verbs of existence and appearance has been linked to the discourse function of the construction (Birner 1992, 1994, Bolinger 1977, Bresnan and Kanerva 1989, Bresnan 1993, Guéron 1980, Penhallurick 1984, Rochemont 1986, among others). Although there have been different points of view concerning the precise discourse function of the construction, most commonly it has been said to be used for presentational focus; that is, it is used to introduce the referent of the postverbal NP on the scene (Bresnan 1993, Rochemont 1986, Rochemont and Culicover 1990, among others). On the assumption that the discourse function of locative inversion is presentational focus, Bresnan (1993:22–23) justifies the restriction that the verb be a verb of existence or appearance as follows: "In presentational focus, a scene is set and a referent is introduced on the scene to become the new focus of attention. In the core cases, a scene is naturally expressed as a location, and the referent as something of which location is predicated— hence, a theme. This imposes a natural selection of the ⟨*th loc*⟩ argument structure." Penhallurick (1984:42) makes a similar observation ("the verbs that do appear in the construction are appropriate for introducing an entity into the discourse"), going on to say that these are the verbs that Firbas (1966) characterizes as verbs expressing "existence or appearance on the scene."

However, based on an extensive corpus study of various types of English inversions, including locative inversion, Birner (1992, 1994) argues that calling the discourse function of this construction "presentational" is in some sense too strong. In particular, she shows that the postverbal NP need not always be discourse-new, as expected if its discourse function were purely presentational. Birner proposes instead that the discourse

function of all inversions, locative inversion included, is to link "relatively unfamiliar information to the prior context via the clause-initial placement of information that is relatively familiar in the discourse" (1992:iii). On this analysis, which is supported by her corpus study, the information represented by the postverbal NP in a locative inversion must always be less familiar than the information represented by the NP in the preverbal PP; however, it need not be discourse-new. The presentational function often attributed to locative inversion is subsumed under Birner's characterization of the discourse function of the construction. Yet in that locative inversion does serve to introduce less familiar information in the context of more familiar information, the function of the construction is "presentational" in a broad sense. On the presentational focus account of locative inversion, the placement of the postverbal NP is attributed to its discourse function. The focus position is taken to be a VP-final adjoined position (Rochemont 1986). Although Birner's analysis does not claim that this NP is in presentational focus, there is no reason not to assume that an NP that is less familiar must occupy this special position if the discourse function of the construction is to be satisfied.

As mentioned above, Birner attributes a broader discourse function to the construction, which subsumes the presentational focus function. Thus, although verbs of existence and appearance are still expected to number among the locative inversion verbs, the class of locative inversion verbs might actually be larger. In fact, Birner further argues that "the verbs appearing in this construction represent evoked or inferrable information in context, and therefore contribute no new (i.e., discourse-new) information to the discourse" (1992:196), continuing "with the caveat that 'context' here appears to include the entire inversion as well as the prior linguistic and situational context" (1992:203–4). Stating this restriction somewhat differently, Birner, adopting a term introduced by Hartvigson and Jakobsen (1974), describes the verb in the locative inversion construction as "informationally light." The constraint on the verb follows from the discourse function of the construction. Presumably, if a verb in the locative inversion construction did contribute information that was not predictable from context, it would detract from the newness of the information conveyed by the postverbal NP. The discourse function of the construction would not be satisfied, and that instance of the construction would be excluded.

The restriction that the verb in a locative inversion be informationally light in context means that some types of verbs will be favored in this construction, but that quite a large range of verbs might be attested if the

context could be appropriately manipulated. As we discuss in section 6.5, this aspect of the analysis explains why so many unergative verbs are found in the construction.

Here we turn back to the observation that the canonical locative inversion verbs are verbs of existence and appearance. Such verbs are inherently informationally light since they add no information to that provided by the preverbal PP, which, by setting a scene, suggests that something will exist on that scene; therefore, these verbs are expected in the locative inversion construction. In fact, verbs of existence can often be replaced by the copula without a noticeable change in sentence meaning, and Hoekstra and Mulder (1990) even describe locative constructions as copular constructions. There is another striking property of verbs of existence and appearance that contributes to their informational lightness: they typically have no lexicalized manner component. If these verbs did have a manner component, then they would not qualify as informationally light. As we will show in section 6.5, when a verb that does lexicalize a manner component is found in a locative inversion, certain constraints surface on the kind of postverbal NP that can appear in the construction. Roughly speaking, the postverbal NP must be chosen to counterbalance the effect of the verb's manner component, thus making the verb informationally light in context.

By characterizing the class of verbs found in the locative inversion construction as verbs of existence and appearance, many studies have excluded verbs of disappearance from the construction. On our account, there is no explicit ban on verbs of disappearance, although their absence does receive an explanation. Given the discourse function of the construction, it is unlikely that verbs of disappearance will be found in the construction. Usually, an entity whose disappearance is being described is likely to be central to the discourse and not discourse-new. However, if the discourse context could be appropriately manipulated, a verb of disappearance should be found in this construction. In fact, this prediction receives support from an instance of locative inversion with the verb *die;* we discuss this example further in note 8. (See also Kimball 1973 for a description of how the *there*-insertion construction might be manipulated to accommodate a verb of disappearance.)

We assume that the requirement that the verb be informationally light explains the virtual absence of transitive verbs from the locative inversion construction. Typically, in a sentence with a transitive verb new information about the subject is conveyed by the verb and object together. It is unlikely that the subject of such a sentence will represent the least familiar

information, as the discourse function of the construction requires. (Such a sentence is likely to be what Guéron (1980) calls a "predication" rather than a "presentational" sentence.) The few reported or constructed instances of locative inversions with transitive verbs involve fixed phrases such as *take place* and *take root*, which have the type of meaning associated with a verb of existence. It is not surprising given the discourse function of the construction that only transitive verbs that participate in such phrases are found in locative inversion, and only when they are found as part of these phrases.[7]

Bresnan (1993) questions whether the discourse constraint on locative inversion can be formulated in terms of informational lightness. She suggests that the contrast in (31) and (32) involving the presence or absence of a cognate object cannot be explained by discourse considerations, writing that "it is hard to see how the cognate object *dance* lessens the informational lightness of (133b) [= (32b)], compared to (132b) [= (31b)]" (1993:63).

(31) a. The women danced around the fire.
     b. Around the fire danced the women. (Bresnan 1993:63, (132))

(32) a. The women danced dances around the fire.
     b. *Around the fire danced dances the women. (Bresnan 1993:63, (133))

In (32b), J. Bresnan (personal communication) notes that she has avoided a definite object precisely in order to affect the informational content of the sentence as little as possible. However, even the choice of an indefinite plural cognate object may well reduce informational lightness, since such an object gives the sentence an iterative derived aspectual interpretation that is lacking in (31). Although it might appear that cognate objects do not contribute new information, they in fact affect the aspectual interpretation of a sentence and semantically are best characterized as "result objects" (Macfarland 1994a, 1994b). Thus, it appears that the absence of cognate objects from locative inversion does not detract from the use of informational lightness in characterizing the discourse function of the construction.

6.4   Evidence from Various Verb Classes

In this section we provide further support for the restriction that the verb in the locative inversion construction be informationally light in context.

We limit ourselves in this section to examining the locative inversion behavior of various types of unaccusative and passive verbs attested in our corpus, turning to unergative verbs in the following section. Much of the evidence presented involves the disambiguation of verbs with multiple meanings when they are found in the locative inversion construction.

6.4.1 Verbs of Change of State

As demonstrated in chapter 3, most unaccusative verbs belong to one of two broad semantic classes: the verbs of existence and appearance or the externally caused verbs of change of state. These classes are also relevant to the distribution of locative inversion: the prevalence of locative inversions with verbs of existence and appearance contrasts with the virtual absence of locative inversions with externally caused verbs of change of state. For example, the verbs *melt*, *break*, and *dry*, cited in (18) as instances of unaccusative verbs not found in the locative inversion construction, are all externally caused verbs of change of state (although special circumstances that allow some of these verbs to be found in this construction are discussed below). The striking absence of externally caused verbs of change of state can be attributed to their semantic type. The fact that these verbs are not verbs of existence or appearance would be enough to exclude them from locative inversion on many accounts. But more important, the discourse function of locative inversion provides insight into why this should be the case. Externally caused verbs of change of state are not informationally light: by predicating an externally caused, and therefore unpredictable, change of state of their argument, these verbs themselves contribute discourse-new information and hence are not eligible for the construction. Thus, the fact that only a subset of the prototypical unaccusative verbs are found in locative inversion can be linked to its discourse function. Among the unaccusative verbs, only verbs of existence and verbs of appearance are inherently compatible with the discourse function of the construction.

Evidence for the strong restriction against having externally caused verbs of change of state in the locative inversion construction comes from the disambiguation of two verbs of this type when they are found in the construction. These are the verbs *break* and *open*. In addition to its well-known use as a verb of change of state, the verb *break* also has a use as a verb of coming into existence, as in *The war broke* or *The news broke*. What is relevant here is that it is attested in the locative inversion construction only in this sense and not in the change-of-state sense.

(33) "Then BROKE the war, on those awful days in August, and the face
      of the world changed—I suppose forever." [E. Phillpotts, *The Red
      Redmaynes*, 30]

Besides its change-of-state sense, where it is predicated of doors, windows,
and other apertures, the verb *open* has an appearance sense paraphrasable
as 'become visible'. This verb is found in the locative inversion construc-
tion only in this sense, as illustrated in (34).

(34) Underneath him OPENED a cavity with sides two hundred feet high.
      [E. Phillpotts, *The Red Redmaynes*, 9]

Yet another instance of disambiguation that can be attributed to the se-
mantic restriction on locative inversion is presented in (35). The verb *pop*
allows several interpretations: a verb-of-sound interpretation (*The corks
were popping*), a change-of-state interpretation (*The balloon popped*), and
a verb-of-appearance interpretation when used in the collocation *pop up*.
In (35) this verb is found in the locative inversion construction precisely in
this collocation.

(35) So up POPPED the name of T. W. Star, who was listed as the
      ambassador of the steaming hot island of Nauru, the third smallest
      country in the world after Vatican City and Monaco. [*Chicago
      Tribune*, "Mr. Senior Diplomat, Sir, Where on Earth Were You?"
      2]

Most externally caused verbs of change of state, such as *melt* and *dry*,
do not have an appearance sense, and they are not attested in the locative
inversion construction in the corpus we have collected. It appears that the
majority of externally caused verbs of change of state cannot be reinter-
preted as verbs of appearance. Presumably, this is because there is no
regular process of meaning shift from the class of externally caused verbs
of change of state to the class of verbs of existence and appearance. Thus,
only sporadic instances of such shifts such as the ones discussed here with
the verbs *break*, *open*, and *pop* are observed. What is interesting is that in
each of these instances the shift in meaning is accompanied by a "bleach-
ing" of the verb's meaning so that little more than the notion of appear-
ance is left. In contrast, this property is not typical of the regular meaning
shifts discussed in chapter 5.

In this context, it is interesting to compare externally caused verbs of
change of state with the much smaller class of internally caused verbs of
change of state, discussed previously in sections 3.2.1 and 4.2.1. Internally

caused changes of state differ from externally caused changes of state in often characterizing the existence of an entity. Thus, flowers bloom and old wood decays in the natural course of events, but it is only incidental that glass breaks or that a door opens. This difference is part of what makes some changes of state internally caused and others externally caused. As mentioned earlier, unlike externally caused verbs of change of state, many internally caused verbs of change of state appear to describe states as well as changes of state. We have already pointed out that the internally caused verb of change of state *bloom* is ambiguous between the change-of-state reading 'come to be in bloom' and a state reading 'be in bloom'. Since by their very nature on their 'be in state' interpretation such verbs can characterize the existence of certain entities, they are informationally light; therefore, they would be expected to be compatible with the locative inversion construction. In fact, internally caused verbs of change of state are indeed observed in this construction in their 'be in state' interpretation.

(36) a. 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]

b. Next door, to the east, DECAYS Ablett Village, a half-vacant Camden Housing Authority project with as many windows of particle board as of glass. [*Philadelphia Inquirer*, "Apartment Dwellers Caught in Legal Tangle," 1-B]

An interesting example of the contrasting behavior of internally and externally caused verbs of change of state involves the verb *burn*, which, as discussed in chapter 3, can be used as either an internally caused or an externally caused verb, depending on what it is predicated of. This verb can be predicated of entities that can be consumed by fire such as paper, leaves, and wood. It can also be predicated of entities such as candles, lamps, fires, and other light or heat sources, which are designed to "burn" in order to emit light or heat. The first sense, but not the second, involves external causation. The verb *burn* is found in the locative inversion construction only when it is predicated of things that emit heat or light and whose existence is therefore characterized by burning.

(37) I was a rich boy, on my desk BURNT a thick candle. On the desk next to mine BURNT the thinnest candle in the whole class, for the mother of the boy who sat next to me was very poor. [A. Munthe, *The Story of San Michele*, 97]

There is good reason to believe that the verb *grow* is also an internally caused verb of change of state (B. Levin and Rappaport Hovav, in preparation). Like other internally caused verbs of change of state, this verb has a 'be in state' as well as a change-of-state reading, a property noted by Milsark (1974) in order to illustrate a restriction on the *there*-insertion construction to verbs of existence and appearance. The *there*-insertion construction has a discourse function that is similar, but not identical, to that of locative inversion (Bolinger 1977, Birner and Ward 1993, Ward and Birner 1993, among others), and the relevance of verbs of existence and appearance to this construction is explicitly stated by Kimball in describing the distribution of *there*-insertion: "the existential *there* can appear with a sentence if it expresses coming into being of some object, where this coming into being can include coming into the perceptual field of the speaker" (1973:265). Milsark (1974) points out that certain verbs are ambiguous between a change-of-state interpretation and an existence interpretation. For example, he cites the verb *grow*, which has both an existence interpretation, where it means 'live rootedly', as in (38a), and a change-of-state interpretation, as in (38b), where it means 'increase in size or maturity'.

(38) a. A plum tree grows in my backyard. ('live rootedly')
  b. Corn grows very slowly in Massachusetts. ('increase in size or maturity'; Milsark 1974:250, (11))

What Milsark points out is that when this verb is found in the *there*-insertion construction, as in (39), the only interpretation available is the existence interpretation, 'live rootedly'. The same type of disambiguation is observed when this verb appears in the locative inversion construction, as shown in (40a).

(39) There GREW some corn in our garden last year. ('live rootedly'; Milsark 1974:250, (14))

(40) a. In our garden GREW a very hardy and pest-resistant variety of corn. ('live rootedly')
  b. *In Massachusetts GROWS corn very slowly. ('increase in size or maturity')

This pattern of disambiguation is consistent with the discourse function of the construction: by contributing the information that the corn is getting taller and maturing the change-of-state sense of the verb is not informationally light. On the other hand, like other internally caused verbs of

change of state, this verb has an existence sense, and it is found in the locative inversion construction in this sense.

The verb *grow* is one of the ten most frequently occurring verbs in our corpus of locative inversions; there are thirty-five tokens with this verb. Of the tokens that are predicated of plants, none involves the change-of-state interpretation. Of the remaining tokens, a few represent a third, extended sense of *grow* that might be paraphrased as 'develop' or 'come to be'; this sense is not predicated of plants. This sense qualifies as a verb-of-appearance sense, and it is also observed in the locative inversion construction.

(41) a. The hate filled Ellen then, and from that time GREW up in her a love for vengeance that would mark her life, a cruelty that gave her strength, a knife she always held close to her body. [M. Gordon, *The Other Side*, 94]

b. In her GREW the conviction that a resolution to the problem would be found.

The presence of the particle *up* following the verb in (41a) emphasizes the telicity associated with the appearance sense, serving to disambiguate the verb.

6.4.2 Verbs of Emission

Under certain circumstances verbs of emission can be used in an appearance sense, and they are found in locative inversion in this sense, which has not been previously discussed and which is distinct from the sense discussed earlier in this chapter. Verbs of emission are often thought of as single-argument verbs, but in fact they are in some sense dyadic, taking as arguments the emitter and what is emitted. This observation is most evident with the verbs of substance emission. Most commonly, verbs of emission take the emitter as the subject as in (42a), the emittee being optionally expressed as the object. Some verbs of emission, particularly verbs of substance emission, allow an alternative realization of their arguments in which what is emitted is the surface subject, and the emitter is expressed in a *from* phrase, as in (42b).

(42) a. The bottle oozed (oil).

b. Oil oozed from the bottle.

We propose that (42b) involves an unaccusative use of the verb. By the Existence Linking Rule, the emittee would be the internal argument, since

it "appears" or "comes to exist" by virtue of being emitted. This mapping allows the emittee to be uniformly realized as an internal argument in both available realizations of the arguments of these verbs. There is also evidence for the unaccusative analysis of the emittee subject use from Italian auxiliary selection. In Italian at least some verbs of emission exhibit a similar ambiguity, as shown in (43) with the verb of sound emission *suonare* 'ring/sound'.

(43) a. Ha suonato il   campanello.
        has rung   the bell
        'The bell rang.'
     b. È appena suonata mezzanotte.
        is just   rung   midnight
        'It just struck midnight.'

This verb takes the auxiliary *avere* 'have' when it takes the emitter as subject, as in (43a), but it takes the unaccusative auxiliary *essere* 'be' when it takes the sound emitted as subject, as in (43b).

What is more relevant here is that verbs of emission would then be expected in the locative inversion construction in this second, emittee subject use since it involves the appearance on the scene of the emittee. In fact, our corpus attests instances of locative inversion that involve this sense of verbs of sound emission.

(44) a. From the speaker BOOMS the voice of Fox's ad sales head in
        Chicago. "Sold out!" [C. Stauth, "The Network Henhouse," 63]
     b. Out [of his throat] BOOMED the great vocal bell. [E. Bowen, *Eva Trout*, 251]

The presence of these verbs in locative inversion in this sense is consistent with the restriction that the verb be informationally light in context because sounds come to be on the scene by virtue of being emitted. Thus, by its very nature this sense of the verb allows the presentation of less familiar information via the postverbal NP in the context of more familiar information (the NP in the preverbal PP). We return in section 6.5 to the other, more often recognized sense of verbs of emission, which, as already mentioned, is problematic for the unaccusative analysis of locative inversion.

6.4.3 Verbs of Spatial Configuration
Another type of disambiguation that is found in the locative inversion construction involves verbs of spatial configuration such as *lie*, *sit*, and

stand. Once again the disambiguation can be shown to arise because of the restriction that the verb in the locative inversion construction be informationally light. As discussed in chapter 3, in English these verbs typically show three noncausative senses: (i) the simple position sense, as in (45a), (ii) the maintain position sense, as in (45b), and (iii) the assume position sense, as in (45c).

(45) a. The book was sitting on the table.
      b. Sandy was sitting on the rickety old chair.
      c. Sandy sat hurriedly.

As noted by Bresnan (1993:13), when these verbs are found in the locative inversion construction, they do not allow the assume position interpretation; this is demonstrated by the nonambiguity of (46), as contrasted with the ambiguity of its noninverted counterpart in (47).

(46) Beside her SAT a little girl who bore a striking resemblance to Top o' the Evenin', her head a bit large and her eyes dark and piercing. [R. Levitsky, *The Love That Kills*, 209]

(47) A little girl sat beside her.

This observation is expected given the restriction that the verb in locative inversion be informationally light in context. In the assume position interpretation these verbs assert a property of their argument; thus, they present new information about their argument that is not predictable from context. Animate entities can assume one of a number of spatial configurations, and hence these verbs do not qualify as informationally light. We would expect that these verbs should be found in the locative inversion construction only in the simple position interpretation, the interpretation associated with a nonagentive, though not necessarily inanimate, argument. (In Bresnan's terms, these verbs take the ⟨*th loc*⟩ argument structure only on the simple position interpretation, but take only an agent argument on the assume position interpretation.) As we argued in section 3.3.3, in the simple position interpretation these verbs are basically verbs of existence and thus mean little more than 'be located'. A given simple position verb might appear to contribute information about the spatial orientation of the located entity since it lexicalizes a particular spatial configuration. But actually, the choice of verb is determined by properties of the located entity, and in this sense the verb is predictable from properties inherent to this entity and does not contribute information that could not be inferred from the postverbal NP. In those instances where an

entity might be found in more than one spatial configuration—say, because it is animate—the PP and context often provide information that reduces the information that the verb contributes.

Many of the simple position verbs are attested in the locative inversion construction; the most common are *hang, lie, sit*, and *stand*. An examination of the tokens we have collected involving these verbs shows that they may be predicated of both inanimates, as in (48), and animates, as in (49).

(48) a. Behind a pale brick fence on the outskirts of the Iraqi village of Qurna SITS a small, gnarled apple tree with a double trunk.
[E. Sciolino, "Iraq Yearns for Greatness—and an Identity," 1]

b. On his lap LAY a vacation brochure from the Manitoba tourist bureau ... [E. S. Connell, *Mr. Bridge*, 224]

c. On the kitchen dresser HUNG the quirkily-shaped pottery mug made by Tabitha in the school art class. [P. Lively, *Perfect Happiness*, 173]

(49) a. Outside some of the shops SAT old people gathered around wooden tables. [F. Cheong, *The Scent of the Gods*, 153]

b. At the foot of the mountain SQUATTED two of Johnno's countrymen. [A. W. Upfield, *The Widows of Broome*, 175]

c. On the floor before an open suitcase KNELT a now familiar figure. [M. Allingham, *The Fashion in Shrouds*, 157]

Our own intuition is that when these verbs are predicated of animates, they do not have the maintain position sense, the third sense, which is available only when these verbs are predicated of agentive animates. It is likely that this sense is ruled out for the same reasons as the assume position sense: the verb does not qualify as informationally light in context in these instances.

6.4.4   Verbs of Motion

Verbs of directed motion are well represented among locative inversion verbs, whether these are verbs of inherently directed motion such as *arrive, come*, and *go* or agentive verbs of manner of motion used as verbs of directed motion. We have found more tokens of the locative inversion construction with the verb *come* than with any verb other than *be;* roughly one-sixth of the examples collected involve *come*. As there is much independent evidence that verbs of directed motion are unaccusative, it would not be surprising that these verbs are attested in the locative inversion construction given an unaccusative analysis of the construction.

On our analysis, the appearance of these verbs in locative inversion would be sanctioned not by their unaccusativity, but by their ability to be used in conformance with the discourse function of the construction. We need to show, therefore, that these verbs are informationally light in context. We propose that they are found in locative inversions only when they can be viewed as verbs describing appearance on the scene.

We begin by examining the verb *come*, which, given its frequency, deserves its own discussion. As a verb of motion, the verb *come* takes a nonabstract NP, whether animate or inanimate, as its theme argument, as illustrated in (7a), repeated here.

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

This verb of inherently directed motion lexicalizes a particular deictic orientation for the motion. Simplifying somewhat, the verb *come* describes motion onto the scene identified with or by the speaker. Because of this deictic orientation, this verb naturally can be used to describe appearance on the scene, and thus provides a context for the presentation of less familiar information via the postverbal NP in the context of more familiar information (the NP in the preverbal PP). But in many of its uses in our corpus of locative inversions, *come* takes as its argument an inanimate abstract NP—an NP that is not capable of moving or being moved —as in (51); in these uses the NP in the preverbal PP is often abstract as well.

(51) The sweetness and the richness is disappearing and instead in their
        place COMES a new sourness, an after-taste which may be the wine
        or the fetid aftermath of an over-satisfied anticipation. [C. Clewlow,
        Keeping the Faith, 64]

In these uses the verb is not used as a verb of motion strictly speaking; it seems simply to describe appearance on the scene, losing any sense of motion, though retaining its telicity. (In fact, one could ask whether this verb and possibly some of the other verbs of inherently directed motion are better viewed as verbs of appearance in all their uses.) The verb *come* acts like little more than a copula; the only extra contribution is a sense of appearance on the scene that is not associated with the copula. The availability of the pure appearance sense of *come* probably follows from the inherent telicity and deictic orientation of this verb. It is likely that the particular deictic orientation of this verb explains why it is so often found

in the locative inversion construction and why we have collected almost seven times more tokens for it than for the verb of inherently directed motion *go*, which typically describes movement directed away from the scene identified with or by the speaker.[8]

An examination of the instances of locative inversion with other verbs of inherently directed motion suggests that these verbs can also receive an appearance interpretation in this construction. Consider the following example with the verb *rise*, which does not have a deictic component of meaning, though it does lexicalize an inherent direction:

(52) Out of the trees below them ROSE a large night bird with a great
     flapping of wings ... [M. L'Engle, *The Small Rain*, 331]

Our claim is that these verbs are used with an appearance interpretation in the locative inversion construction. In principle, such verbs can be used to describe motion into or out of the scene; however, these verbs are not found in locative inversions when what is being described is movement out of the scene. For instance, it is clear that (52) describes motion onto the scene: even though the prepositional phrase describes the source of the motion, the scene is set outside of the source, as is made clear within the prepositional phrase itself (*out of the trees below them*). The context of the example shows that the postverbal NP is less familiar than the NP in the preverbal PP, as required for the discourse function of the construction to be met. The restriction to an appearance interpretation shows that being a verb of inherently directed motion is not sufficient for these verbs to appear in the construction; for the same reason, this shows that unaccusativity is not sufficient to license their presence in the construction.

This observation extends to the directed motion sense of agentive verbs of manner of motion. As mentioned in section 6.2.2, the existence of instances of the locative inversion construction involving agentive verbs of manner of motion used with a directional phrase is not incompatible with an unaccusative analysis of locative inversion; in fact, their existence has been taken as evidence for this analysis, as in Coopmans 1989. As we discussed in chapter 5, agentive verbs of manner of motion may have a directed motion sense; this use, which is identifiable by the presence of a directional PP, receives an unaccusative analysis. Again it turns out that being a verb of directed motion is not sufficient. The construction must also be used to present less familiar information in the context of more familiar information, and consistent with this the verb itself must be informationally light in context. In fact, there is evidence that in locative inver-

sions with the directed motion sense of agentive verbs of manner of motion, as in those with verbs of inherently directed motion, not only must the postverbal NP be less familiar than the NP in the preverbal PP, but the PP must be chosen to convey appearance on the scene.

A survey of locative inversions with agentive verbs of manner of motion used as verbs of directed motion reveals that these inversions all have an appearance interpretation, suggesting a constraint against using such locative inversions to describe movement out of the scene. This constraint is particularly striking since agentive verbs of manner of motion do not lexicalize a direction of motion, so that in their directed motion sense any information about direction of motion is contributed by the PP. In principle, these verbs could appear with PPs that specify movement either into or out of the scene. Yet a survey of the tokens of locative inversions with agentive verbs of manner of motion plus directional PPs in the corpus shows that they include contexts with goal PPs that clearly describe appearance on the scene, as in (9a) and (9b), as well as in (53).

(53) Into the room WALKED Sylvia Tucker, with Zahid walking behind her like a puppet. [A. Hosain, *Sunlight on a Broken Column*, 52]

But what makes this point in a particularly forceful way is the interpretation that locative inversions receive when one of these verbs is used with a source PP, as in (54). In these sentences the object of the source preposition (or the implied object when none is expressed, as in (54a)) describes the prior location of the postverbal NP.

(54) a. In the climactic scene, the expert, a tiny woman with her hair in a bun, delicately opens the closet door and out RUSHES a wild, screaming, fire-breathing monster ... [T. L. Friedman, *From Beirut to Jerusalem*, 47]

b. ... from out its hole CRAWLED a gigantic monarch iguana, six feet in length, moving slowly with deceptive sluggishness. [A. W. Upfield, *The Sands of Windee*, 106]

c. They had scarcely exchanged greetings with each other when out of an open carriage at the gate, STEPPED Mrs. Duff-Scott on her way to that extensive kettledrum which was held in the Exhibition at this hour. [A. Cambridge, *The Three Miss Kings*, 237]

Such examples receive an interpretation in which the relevant scene is not defined by the location described by the object of the preposition, but

rather is set outside of this location. It would not be possible to use the examples above if the scene were set inside the closet, the iguana's hole, or the carriage, although corresponding noninverted sentences may be: the sentence *The monster rushed out of the closet* could be used whether the scene was set inside or outside of the closet. In fact, a closer look at locative inversions where such verbs occur with goal PPs shows an analogous effect: the location denoted by the PP must name the current scene. Consider (53), which could not be used if the room were not the current scene.

To summarize, when PPs denoting sources and goals are used with agentive verbs of manner of motion in locative inversions, they are used from a perspective that allows the sentence as a whole to receive an appearance interpretation. Although these verbs describe a manner of motion and thus might be considered to have a component of meaning that could contribute unpredictable information, when they appear in their directed motion sense in a locative inversion the overall appearance interpretation associated with the construction serves to minimize the verb's actual contribution and makes the interpretation of the locative inversion as a whole compatible with its discourse function. More generally, for a verb to be a verb of directed motion, it is not sufficient for it to be found in the locative inversion construction; rather, such a verb must be used to describe appearance on the scene. In this way, the verb in the construction is informationally light in context, allowing the discourse function of the construction to be met by the appropriate choice of preverbal PP and postverbal NP.

To conclude this section, we consider an additional stative sense that some verbs of motion can show. As noted by Jackendoff (1990) and Dowty (1991), among others, certain agentive verbs of manner of motion can be used as verbs describing the location of a physical object with extent, as in *The railway tracks run along the stream*. Verbs of inherently directed motion can also show such senses, as in *The road dropped down into the valley* or *The mountains rise behind the village*. In these instances the verbs are used statively to describe the existence of a physical object at a particular location. The choice of verb depends on finding a fit between properties of the motion characteristic of the verb and properties of the located object. For example, the vertical extension of mountains makes them compatible with the verb *rise*, which lexicalizes motion upward. As a consequence, there is a redundancy between the verb and the located object in these uses, making the verb informationally light. As long as the

preverbal PP and the postverbal NP are in the appropriate relation so that the discourse function of the locative inversion construction is met, these verbs should be found in the construction. Indeed, both agentive verbs of manner of motion and verbs of inherently directed motion are observed in the locative inversion construction in such senses.

(55) a. One crossed a little valley through which RAN the brook called Toby's Run. [L. Bromfield, *The Farm*, 137]

b. On their left, far-distant and hazy, MARCHED a range of impassable-looking mountains. [R. Pilcher, *September*, 193]

(56) a. Before him ASCENDED a gradual swell of smooth stone. [Z. Grey, *Riders of the Purple Sage*, 51]

b. Behind the house opened a narrow coomb and DESCENDED a road to the dwelling. [E. Phillpotts, *The Red Redmaynes*, 70]

6.4.5   Evidence from Passive Verbs

Given the discourse constraints on the locative inversion construction, only some passive verbs are expected to be found in this construction, even though on an unaccusative analysis all verbal passives would meet its syntactic constraints. In fact, both Bolinger (1977) and Bresnan (1993) discuss restrictions on the passive verbs found in the locative inversion construction. Bresnan, in particular, points out that instances of the locative inversion construction with passive verbs must meet the same restriction on possible verbs as instances of the locative inversion construction with intransitive verbs. Given her statement of the restriction, this means that only passive verbs that have theme and location arguments are eligible. As noted above, we assume that Bresnan's restriction is subsumed under the verb of existence and appearance constraint, which we subsume in turn under the requirement that the verb be informationally light in context. We will show that the passive verbs found in the construction satisfy this requirement.

A survey of the passive verbs found in our corpus of locative inversions reveals several readily identifiable semantic subclasses. These classes are listed in (57), and a locative inversion with a member of each is given in (58).

(57) a. Verbs of putting: display, embed, heap, locate, place, put, range, situate, store,...

b. Verbs of putting in a spatial configuration: hang, lay, mount, perch, seat, suspend,...

   c. Verbs of attachment: glue, hook, lace, paste, pin, staple, . . .

   d. Verbs of image impression: engrave, imprint, inscribe, scrawl, scribble, stamp, write, . . .

   e. Verbs of creation: build, carve, cook, erect, . . .

   f. Verbs of perception: discern, glimpse, hear, realize, see, . . .

(58) a. Here and there over Jeff's Station's map WERE PLACED tiny red flags. [A. W. Upfield, *The Sands of Windee*, 124]

   b. Around him WERE HUNG photorealistic paintings of enlarged cash-register receipts . . . [A. Beattie, *Picturing Will*, 73–74]

   c. To each side of the straw-stuffed pack WERE HOOKED the saddle-bags and water-drums. [A. W. Upfield, *Man of Two Tribes*, 37–38]

   d. . . . on either side of the water WERE BUILT the humpies of tree-boughs and bags of bark . . . [A. W. Upfield, *No Footprints in the Bush*, 56]

   e. . . . a badge of yellow on which WERE STAMPED in gold letters the words "Aid to the Committee." [L. Bromfield, *The Farm*, 285]

   f. . . . through the gap COULD BE SEEN a section of the flower garden beyond, a square of hazy blues and greens and golds . . . [P. Lively, *Treasures of Time*, 177]

As might be expected, there are minimal pairs where an intransitive verb and the passive of its transitive causative counterpart (where one exists) are both found in locative inversions. Compare (58b), which uses the passive form of transitive *hang*, with (8c), repeated as (59), which uses intransitive *hang*.

(59) Above the bed HANG two faded prints of men playing polo. [S. Cheever, *Elizabeth Cole*, 70]

Although there are undoubtedly locative inversions based on verbal passives, the majority of locative inversions with passive verbs appear to us to involve adjectival passives. Unfortunately, the passive locative inversions do not have any of the explicit diagnostic features of adjectival passives discussed by Wasow (1977). For instance, it is well known that both adjectival passives and verbal passives can be found with the verb *be*, so the passive auxiliary provides no clue. Our classification of certain passives as adjectival, therefore, is based on our assessment of their meaning, which in many instances is the "statal" interpretation associated with adjectival passives, as in (58d) and (58e). These two examples do not

describe the actual process of building or stamping, as a verbal passive would. Instead, they describe the results: the existence of the created artifacts. In contrast, the following examples seem to be more likely candidates for verbal passives.

(60) a. Then WAS COMMITTED that great crime, memorable for its singular atrocity, memorable for the tremendous retribution by which it was followed. [CLIVE, 513, b.; cited in Poutsma 1904:252]

b. ... and from under it WAS THRUST forth a narrow, snake-like head from the jaws of which flickered a long, fine, blue tongue. [A. W. Upfield, *Wings above the Diamantina*, 109]

Below we will show that the discourse function of the locative inversion construction provides insight into why so many locative inversions with passive verbs tend to involve adjectival passives.

We turn now to a consideration of how passive locative inversions meet the discourse function of the construction. Bresnan (1993) notes that if passivization suppresses the agent argument of a verb, the passive form of a verb with agent, theme, and location arguments qualifies for locative inversion, since it has the argument structure ⟨*th loc*⟩—the argument structure that is associated with a verb of existence or appearance. This characterization alone suggests that a passive verb should be compatible with the discourse function of locative inversion. Nevertheless, we would like to consider in more detail exactly how passivization creates verbs that satisfy the discourse condition we have stated on verbs in locative inversion: that the verb should be informationally light in context. Putting aside for the moment the verbs of perception, the subclasses of transitive verbs found in the passive in the locative inversion construction all can be described as verbs of causing something to exist or appear. A survey of the attested verbs confirms that they have meanings that can be characterized as 'cause to come to be' or 'cause to be'—it is arguable which,[9] but either meaning is consistent with the requirement that the verb be informationally light. We consider some of these subclasses in more detail.

A prominent subclass of verbs found in the passive in locative inversion consists of verbs whose meaning involves a notion of creation, including a few that are inherently verbs of creation such as *build* and *erect;* a number that have extended senses as verbs of creation, primarily verbs of image impression, as in (61); and some drawn from various other semantic classes, such as the cooking verb *bake*, to which we return below.

(61) a. Across the face of the top letter WAS WRITTEN in The Old Man's
        handwriting, "not to be forgotten." [L. Bromfield, *The Farm*,
        262]
     b. He wears a silver ring he bought in Egypt—it cost all of forty
        cents, he told me—and on it ARE ENGRAVED three pyramids.
        [G. Ehrlich, *Heart Mountain*, 266]

Verbs of creation are accomplishment verbs. As mentioned in chapter 3,
such verbs have a complex event structure consisting of a process and a
result state. Verbs of creation are verbs of causing something to come to
exist, and, therefore, the result state describes the existence of the created
object at some location. Passivization "removes" the agent argument of a
verb, but, even more important, the adjectival passive of an accomplish-
ment verb simply describes the state resulting from the action described by
that verb. With adjectival passives of verbs of creation the result state is a
state of existence, precisely the type of meaning that makes the adjectival
passive an appropriate predicate for a locative inversion construction. It
is not surprising, therefore, that such adjectival passives are often found
in locative inversions.

Verbs of putting, verbs of putting in a spatial configuration, and verbs
of attachment, like verbs of creation, are accomplishment verbs, and like
them will have a complex event structure consisting of a process and a
result state. With these verbs, the result state describes the attained loca-
tion of some physical object. Given this, in the adjectival passive form
these verbs are also expected in locative inversions.

There are verbs with more than one sense that are disambiguated when
they appear in locative inversion in the passive. The nature of the dis-
ambiguation lends support to our characterization of the types of verbs
expected in locative inversion. Some verbs have a creation sense, in addi-
tion to another sense that appears to be more basic. When these verbs are
found in the locative inversion construction, they show only the creation
sense. Consider, for example, a verb like *scratch*. This verb can describe an
activity involving a particular type of contact by impact, taking as its
direct object a surface (location), as in *I scratched the record*, or it can be
used as an accomplishment verb to describe the creation of a particular
image through that type of contact. The creation sense is an extended
sense: the contact results in the creation of marks—possibly words or
images—on a surface. (Since creation senses are regularly associated with
verbs of this type, it is possible that this sense may arise through a lexical
rule of the type described in chapter 5, although nothing in our discussion

in this section hinges on this.) The verb *scratch* is found in the locative inversion construction only in the creation sense.

(62) ... on it [= the knife handle] HAD BEEN SCRATCHED a symbol that looked like a tick-tack-toe box with the extensions on the left and the top missing. [S. Dunlop, *Karma*, 41]

It does not seem possible to construct a locative inversion that involves the contact-by-impact sense. Consider, for example, (63).

(63) On the old wooden tabletop HAD BEEN SCRATCHED a record.

This sentence cannot receive the interpretation that a (phonograph) record got scratched through contact with an old table; the only possible interpretation is a verb-of-creation interpretation in which a written record has been cut into the tabletop. The unavailability of the contact-by-impact sense can be attributed to the verb's not being informationally light in this sense; see the discussion below of transitive verbs that are not found in passive locative inversions. When verbs that are not basically verbs of creation are found in locative inversions in a creation sense, the additional information content of the verb that can be attributed to its basic sense is predictable because the basic sense describes a process used to create the particular artifact that is denoted by the postverbal NP.

Similar examples can be constructed from the subset of verbs of image impression such as *engrave* and *inscribe*, which show alternative expressions of their arguments (see B. Levin 1993) as in (64).

(64) a. The jeweler engraved the name on the ring.
     b. The jeweler engraved the ring with the name.

What is interesting is that when these verbs are found in locative inversions, the locative inversion construction is based on the variant with the locative PP (that is, (64a)). The created object is expressed in both variants of the alternation, but a locative inversion based on the *with* variant would contain the created image or writing, which is necessarily discourse-new, as the preverbal PP, thus violating the discourse function of the construction requiring that the NP in the preverbal PP be less familiar.

The presence of verbs of perception in passive locative inversions may seem harder to explain, but these verbs can also be shown to be construable as verbs of existence in the adjectival passive. In their active use these verbs describe the act of perceiving a state or an event. Frequently, the state asserts the existence of a physical object at some location. In the

adjectival passive these verbs describe the fact that some entity or event impinges (adjectival passive) or comes to impinge (verbal passive) on the senses, and by virtue of this it is possible to infer that the entity exists at some location or that the event has taken place. Consequently, in the passive these verbs can be seen as having an appearance or existence interpretation, sanctioning their appearance in locative inversions.

(65) a. From the dining-room now COULD BE HEARD the sounds of
          Hoovering. [R. Pilcher, *September*, 514]
      b. ... through the gap COULD BE SEEN a section of the flower
          garden beyond, a square of hazy blues and greens and golds ...
          [P. Lively, *Treasures of Time*, 177]

The importance of the appearance interpretation in verbal passives with verbs of perception can be seen in (65a), where, as in the examples with verbs of directed motion, a source PP is possible only on the interpretation that the scene is set outside of the location described in that PP.

Some transitive verbs cannot be viewed as having a lexical semantic representation that embeds a state of existence. Consequently, their passive forms are less likely to yield passives that are informationally light in context, and instances of passive locative inversion with such verbs are much worse than the attested examples, as the following attempts to construct such examples show:

(66) a. *In the kitchen WERE CHOPPED pounds and pounds of
          mushrooms.
      b. *To the tourists WERE SOLD the most garish souvenirs.
      c. *At that movie WERE FRIGHTENED a lot of little children.
      d. *In that museum WERE ADMIRED many Impressionist paintings.

A subset of the excluded verbs should be singled out. Consistent with the discourse function of the construction is the apparent exclusion from locative inversion of the passive forms of the causative externally caused verbs of change of state such as transitive *dry*, *melt*, and *break*.

(67) a. *On the top floor of the skyscraper WERE BROKEN many
          windows.
      b. *On the streets of Chicago WAS MELTED a lot of snow.
      c. *On backyard clotheslines WAS DRIED the weekly washing.

The passive forms of these verbs are not informationally light, just like their intransitive counterparts. Again, the exclusion of these verbs from locative inversions is brought out by instances of disambiguation. Some

verbs, including many cooking verbs, can be used as verbs of change of state or verbs of creation (Atkins, Kegl, and B. Levin 1988). Thus, the verb *bake* can be used to describe a particular change of state, as in *The cook baked the potatoes and apples*, or to describe the creation of baked goods through that change of state, as in *The cook baked ten loaves of rye bread*. Interestingly, the sole attested example of a verb of cooking in the locative inversion construction, cited in (68), involves the creation sense: the postverbal NP is a conjunction, whose components name a range of baked goods rather than their source (dough or batter).

(68) In it [= the kitchen] WERE COOKED the puddings, the pies, the cakes, the waffles, and the pancakes which filled the table meal after meal. [L. Bromfield, *The Farm*, 125]

It is also significant that the locative phrase in this sentence refers to the kitchen rather than the oven. If the locative phrase referred to the oven, it is more likely that the emphasis would be on the change of state from dough or batter to baked goods rather than on the creation of the baked goods. When the locative phrase refers to the kitchen, the shift in emphasis is not quite so likely. In fact, informants judge (69) to be worse than (68).

(69) In the oven WERE COOKED the pies, the cakes, the breads, and the cookies which filled the table meal after meal.

6.4.6 Summary

The discourse function of the locative inversion construction explains why some unaccusative verbs are favored in locative inversion and why others are not found at all. In this section we looked closely at a variety of unaccusative and passive verbs and showed that they are found in the locative inversion construction when they are informationally light; being unaccusative or passive is not sufficient. We also showed that the discourse function of the construction explains certain instances of disambiguation. In the next section we investigate why some apparently unergative verbs are found in the locative inversion construction.

6.5 Unergative Verbs in Locative Inversion

As the discussion in section 6.2.2 shows, a variety of apparently unergative verbs can turn up in the locative inversion construction. These include internally caused verbs of emission, agentive verbs of manner of motion,

verbs of body-internal motion, and a scattering of other activity verbs such as *work*, *chatter*, *sing*, and *doze*. These data are of particular interest because on the one hand, the fact that more members of some unergative subclasses than others are found in locative inversions suggests the existence of some constraints, but on the other hand, members of enough distinct subclasses are found in the construction to cast doubt on the feasibility of referring to particular subclasses in the statement of any constraints on their occurrence.

We begin by looking at a solution to the unergative verb dilemma that appeals to a notion of semantic class shift along the lines used to solve other problems posed by variable behavior verbs in chapter 5. That is, we could posit a process that turns certain unergative verbs into verbs of existence; by virtue of this additional semantic class membership, these verbs will be classified as unaccusative on this sense. In the instances of meaning shifts that we described in chapter 5, it was possible to formulate rules that detail how verbs from one class map into a second class; however, it is very difficult to come up with comparable rules for locative inversion. Because of the wide variety of unergative verbs found in locative inversion, any statement of meaning shift would have to contain an elaborate disjunction of verb classes (internally caused verbs of emission, verbs of body-internal motion, agentive verbs of manner of motion, and miscellaneous other agentive activity verbs). If the set of unergative verbs found in this construction is not to be characterized disjunctively, then we are left with a very broad and potentially not very informative characterization of the class: the class of internally caused monadic predicates. In principle, then, any internally caused monadic verb would be a candidate for locative inversion, since this is the common semantic denominator of the problem verbs. Yet this broad common denominator needs to be balanced against the observation that verbs from some subclasses of the internally caused verbs are more likely to be found in locative inversion than verbs from other subclasses. The meaning shift approach does not provide any insight into this observation. Presumably, the variation in distribution could be attributed to specific aspects of the meaning of individual verbs that license their occurrence in locative inversion. Ideally, the factors that determine the differential distribution within the classes attested in locative inversion should also be the factors that exclude most activity verbs from the construction. Nor does the broad characterization that would be necessary allow for the other factors, such as the relationship between the postverbal NP and the verb, which we will show in this

section to be important to determining whether locative inversion is possible. In the instances of meaning shifts we discussed in chapter 5, the mappings between classes were much cleaner; they were not dependent on such additional factors. Furthermore, all the instances of meaning shifts in chapter 5 involved a change in telicity, whereas verbs do not show a change in telicity when they are found in the locative inversion construction (unless it is independently attributable to the factors detailed in the meaning shifts described in chapter 5). For these reasons, we do not feel that a meaning shift account is appropriate for locative inversion.

If, on the other hand, the unergative verbs in the locative inversion construction were used in such a way that the discourse function of the construction were met, then there would be no reason to resort to such a meaning shift. In fact, the explanation in terms of the discourse function actually does all the work, since, as we show in section 6.6, there is no compelling syntactic reason to assume that the locative inversion construction involves unaccusative syntax. What would it take for a locative inversion with an unergative verb to satisfy the construction's discourse function? The postverbal NP would have to be less familiar than the NP in the preverbal PP. In addition, the verb must not contribute information that is newer than the postverbal NP; that is, it must be informationally light in context. To meet this requirement, an unergative verb, like a verb of existence, cannot contribute additional information beyond the fact that the entity it is predicated of exists. The key to explaining how this is possible with unergative verbs comes from the observation, which we substantiate below, that in locative inversions with unergative verbs the verb and postverbal NP are mutually predictable and therefore conform to the discourse function of the construction.

Following proposals by Bolinger (1977) for several English constructions including locative inversion and by Babby (1978, 1980) in reference to the genitive of negation in Russian, which also shows similar properties, we propose 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 (see also Birner 1992). Babby writes that the "lexical verbs used in ES's [= existential sentences] normally denote the subject noun's most typical action from the point of view of the speaker, i.e., they denote the action through which human beings identify or encounter the subject noun's referent in the real world" (1978:27). Similarly, Bolinger writes, "Fairly common is the use of a verb that represents a normal or customary action of a thing to suggest that the thing is

there' (1977:97), citing examples of VP-inversion, including those in (70), though his observation also extends to locative inversion, which he discusses in the same paper.

(70) a. Waving gaily was a bright flag. (Bolinger 1977:97, (55))
     b. ?Burning merrily was an enemy flag. (Bolinger 1977:97, (56))

Thus, waving is the normal motion associated with a flag, so that it in some sense characterizes the existence of the flag. The verb, then, can be used simply to characterize that a flag exists without asserting anything more about it. In contrast, burning in the 'be consumed by fire' sense intended in (70b) does not characterize the existence of a flag; hence the oddness of this example. The use of *burn* in (70b) is an externally caused use. As already discussed, this verb also has an internally caused use when it is predicated of light and heat sources. In this use the verb describes the emission of light or heat, and, indeed, a VP-inversion that uses the internally caused sense of the verb, such as *Burning slowly was a tall beeswax candle*, is perfectly acceptable. In fact, Firbas, in more general studies of presentational contexts, observes that the relationship between the verb and its argument is often one of "semantic affinity" (1966:244, 1992:60).

In the remainder of the section we show that in locative inversions with unergative verbs, the activity or process that the verb describes is characteristic of the entity that the verb is predicated of. We discuss two properties of the locative inversions in our corpus that support this proposal: (i) the unergative verbs found in the locative inversion construction include those that impose strict selectional restrictions on their argument and (ii) even those verbs that do not do this are found in locative inversions with a restricted range of arguments. The second property has not to our knowledge been discussed elsewhere; the other has been discussed, but in more limited contexts. To conclude the section, we comment on the proposal that verbs in this construction that take animate subjects are in some sense "deagentivized."

Although the unergative verbs observed in locative inversions are drawn from different subclasses of the unergative class, these verbs share a common property, which can be shown to correlate with the observation that verbs from some of these subclasses are more likely to be found in locative inversions than verbs from others. Many of the unergative verbs found in locative inversions, particularly the verbs of emission and verbs of body-internal motion, impose very strict selectional restrictions on their arguments as discussed in section 3.2.1, and, probably related to

this, many of them are the types of verbs that describe the characteristic activities of the NPs that meet their selectional restrictions. Consequently, when these verbs are found in the locative inversion construction, there is a relationship of mutual predictability between the verb and the argument.

We illustrate this relationship first with verbs of body-internal motion. For instance, the typical things that flutter are flags and bird wings, and conversely, the typical thing that flags and bird wings do is flutter. And in fact, the occurrences of *flutter* in the locative inversion corpus have flags and birds as their postverbal NPs.

(71) 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 lacey leafage FLUTTERED a number of grey birds with black and white stripes and long tails. [Z. Grey, *Riders of the Purple Sage*, 62]

Returning to Bolinger's example (70a), the only naturally occurring instance of the verb *wave* that we have found involves its being predicated of a clump of tall thin plants, which is consistent with the requirement that the verb describe a characteristic activity: tall thin plants in windy places wave.

(72) Out of the precipice behind WAVED a profusion of feathery rock-lilies ... [R. Praed, *Outlaw and Lawmaker*, 259]

The relationship of mutual predictability extends to verbs of light emission and sound emission. Only things like jewels, certain metals, and glass flash, sparkle, or glitter. Similarly, clocks tick, but trucks rumble.

(73) a. On one hand FLASHES a 14-carat round diamond; on the other hand SPARKLES an 8-carat stone flanked by the diamond-studded initials WN. [*Philadelphia Inquirer*, "To the Top the Hard Way," 1-D]

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

(74) a. In the hall TICKED the long-case clock that had been a wedding present from her parents. [P. Lively, *Perfect Happiness*, 173]

  b. And in their wake RUMBLED trucks to haul off the remains. [S. Paretsky, *Burn Marks*, 157]

As verbs describing characteristic activities of their argument's referent, these verbs do not contribute new information and qualify as informationally light in context, explaining their occurrence in locative inversions.

We can now begin to speculate why more members of some classes than others are found in locative inversions. Almost by their very nature, verbs of emission show the property of mutual predictability, explaining their prevalence in locative inversions. What may be more difficult to explain is why so many more verbs of light emission are attested than verbs of sound emission. This may simply reflect that visual perception is more frequently used than aural perception to take in a scene, suggesting that less familiar information is more likely to be apprehended using a visual than an aural modality.

The proposal that unergative verbs in locative inversions qualify as informationally light because they are predictable from the postverbal NP also receives support from instances of locative inversions involving unergative verbs that do not exert such strict selectional restrictions on their argument. When such verbs are found in locative inversions, they 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 this construction. For instance, the locative inversion involving the verb *chatter*, given in (19a) and repeated here, takes *girls* as the postverbal NP, whereas the one involving the verb *doze*, given in (19e) and also repeated here, takes *bathers*.

(75) a. Opposite the landing-place stood half-a-dozen donkeys with saddles on their backs and bunches of flowers in their bridles, 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 San Michele*, 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 lying on their backs wide open to that sun. [A. Marshall, *The Brass Bed*, 228]

In particular, these uses do not take the name of a particular person as the postverbal NP; if this were the case, then it is likely that the verb would be contributing information about the activity of that particular person and would not meet the requirement that it be informationally light.

Agentive verbs of manner of motion can also be used to illustrate this point. We have seen that when these verbs take a directional phrase com-

plement, the appropriate choice of PP allows them to be used to describe appearance on the scene. It is this directional PP that sanctions their use in locative inversion in conformance with the requirement that the verb be informationally light. As long as the postverbal NP introduces less familiar information than the NP in the preverbal PP, its referent does not have to be something whose characteristic activity is movement in the manner described by the verb in the construction. But we will show that when the preverbal PP is locative, the verb must also describe an activity characteristic of the existence of the postverbal NP, thus restricting the range of possible postverbal NPs. This relationship between the verb and the postverbal NP is illustrated in (20d), repeated here as (76): swimming is a kind of motion that is characteristic of the existence of fish, so that this sentence really conveys little more than the fact that colorful fish are inside the tank.

(76) Inside SWAM fish from an iridescent spectrum of colors . . .
     [J. Olshan, *The Waterline*, 177]

We predict that in the presence of a directional PP an agentive verb of manner of motion will not show the same restrictions on the postverbal NP as it does when it occurs with a locative PP. A survey of the postverbal NPs found in locative inversions with verbs of manner of motion when the preverbal PP is directional and when it is locative shows that they are quite different. For example, the verb *fly*, which occurs ten times in our corpus, is found with both directional and locative preverbal PPs. As illustrated in (77), when the PP is locative, the postverbal NPs for the relevant senses of *fly* include birds (eagles, geese) and insects (butterflies).

(77) a. Above her FLEW a great gaggle of geese, honking their way
        south. [M. L'Engle, *An Acceptable Time*, 91]
     b. Above it FLEW a flock of butterflies, the soft blues and the spring
        azures complemented by the gold and black of the tiger
        swallowtails. [M. L'Engle, *A Swiftly Tilting Planet*, 197]

There are two instances of the verb *hop*, one with a locative PP and the other with a directional PP; the first use has a postverbal NP that specifies a set of rabbits, and the second involves the NP *two sleek young men*.

(78) In the enclosure, among the chicks, HOPPED the most recent
     children of Nepomuk and Snow White. They were the second
     rabbit litter this year. [M. Benary, *Rowan Farm*, 287]

(79) … out HOPPED two sleek young men dressed all in white carrying
dozens of large white paper boxes. [L. Colwin, *Goodbye without
Leaving*, 240]

Although some agentive verbs of manner of motion are found with
both directional and locative PPs, others are not found with both types of
PPs in our corpus, and it is not always clear to us that this is completely
attributable to limitations stemming from the size or composition of the
corpus. Among the agentive verbs of manner of motion that are not
observed with locative PPs are *walk*, which occurs eighteen times in our
corpus, and *rush*, which occurs six times. (Most of the other agentive
verbs of manner of motion occur one or at most two times.) Both verbs
always occur with directional phrases in locative inversions, probably be-
cause walking and rushing are not considered characteristic motions of a
particular type of entity. On the other hand, in our corpus the verb *sail* is
found only in locative inversions with locative PPs with postverbal NPs
such as eagles, clouds, and fog.[10] Presumably, this verb could be found in
locative inversions with directional PPs in the sense of 'sailing a boat' and
would take humans as the postverbal NP.

To summarize, the set of postverbal NPs found when agentive verbs of
manner of motion are used with directional PPs and locative PPs are
different, the NPs found with the latter being constrained to entities
whose characteristic motion is that described by the verb. Furthermore,
verbs that describe types of motion that are unlikely to be characteristic
of particular entities, such as *rush* and *walk*, are not found in locative
inversions with locative PPs because the verb, not being predictable from
the postverbal NP, will never be informationally light. We can now under-
stand why agentive verbs of manner of motion are so well represented
among the unergative verbs found in locative inversions. These verbs can
be found in locative inversions when used as verbs of directed motion. In
addition, many of these verbs can describe characteristic motions of some
entity and are thus candidates for locative inversions with locative PPs.

Discussions of verbs that are not inherently verbs of existence or ap-
pearance, but are found in the *there*-insertion and locative inversion con-
structions, have noted that aspects of the meaning of these verbs are
deemphasized when they are found in these constructions. In describing
the genitive of negation in Russian, which appears to have similar restric-
tions, Babby notes that the Russian literature on genitive of negation
describes the verb in this construction as being "desemanticized" (1978:
17–18), and it appears that this characterization is equally apt for the

locative inversion construction. Ljung goes further, stating that the verb in the locative inversion construction is "nonreferring" (1980:135). A stronger proposal along these lines is made by Kirsner in discussing the *there*-insertion construction; he argues that the verb is "deagentivized" (1973:111), a proposal that might be extended to the locative inversion construction, since analogues of Kirsner's arguments can be constructed for this construction. For locative inversion, the claim would be based on the contrast in (80), which is the locative inversion analogue of the *there*-insertion constructions Kirsner presents in support of his point; these constructions are also discussed by Jenkins (1975).

(80) a. From the flagpole waved a tattered banner.
     b. *From the roof waved a bearded student.
         (cf. Kirsner 1973:110, (12c,d))

The verb *wave* has two senses: an agentive sense where the verb means 'greet' or 'beckon' and a nonagentive sense where it characterizes the type of motion made by flags and certain other types of objects when moved by the wind. Only this second sense, which, when it holds of flags, characterizes their existence, is found in the locative inversion construction. The only interpretation possible for (80b) would be one where the student is waving in the way a flag would wave. On the basis of this observation, Kirsner proposes that the NP loses its agentiveness. We feel that Kirsner is not quite right here: if the postverbal NP in a locative inversion is something that can typically be agentive, then it does not seem plausible that an agentive verb would not be necessarily informationally light if it denotes a characteristic activity of the NP. We have given such an example in (75a). An example such as (80b) is problematic precisely because the verb is not informationally light in that context: there is no sense in which waving is a characteristic activity of a student. Kirsner also takes the oddness of certain adverbs such as *voluntarily* and *stubbornly* in *there*-insertions as evidence for his deagentivization claim; such adverbs are often odd in locative inversions as well. We attribute the restrictions on such adverbs to their being incompatible with the discourse function of the construction: they typically assert information about the postverbal NP that is incompatible with the relative newness of this NP.

We hope to have shed light on the reasons why many unergative verbs might be found in locative inversions, as well as on the varying prevalence of locative inversion across a range of semantically coherent subclasses of the unergative class. It is now possible to understand why Milsark, in

writing about the *there*-insertion construction, which shows a similar, though not identical, discourse function (Birner and Ward 1993), notes that this construction involves "a bewildering variety of verbs. The list is immense and may in fact comprise a majority of the intransitive verbs in English" (1974:247). Although we would exclude externally caused verbs of change of state, at least for locative inversion, we otherwise find Milsark's observation equally applicable to locative inversion. In light of the factors that we have shown to sanction the presence of unergative verbs in locative inversions, we can expect to continue to encounter new verbs in this construction.

6.6   The Syntax of Locative Inversion: Is an Unaccusative Analysis Necessary?

Having argued that the set of verbs found in locative inversion can be explained without taking this construction to be an unaccusative diagnostic, in this section we reassess the syntactic evidence presented in other work in favor of this position and show that it is weak. However suggestive the attested verbs are of an unaccusative analysis for this construction—and we have argued that, appearances to the contrary, they do not force such an analysis—this in itself is not sufficient reason to take the construction to be an unaccusative diagnostic. In order to argue convincingly that a construction *is* an unaccusative diagnostic, its properties need to be tied to the unaccusative syntactic configuration. We have found that the attempts to accomplish this with locative inversion are not compelling. We conclude that locative inversion is not an unaccusative diagnostic, especially in light of the fact that there is another explanation for the appearance of so many unaccusative verbs in this construction.

In sections 6.6.1 and 6.6.2 we review the best argument that we are able to construct that the syntactic properties of locative inversion in English call for an unaccusative analysis; we assume that this is the argument implicitly used to justify the unaccusative analysis in some other studies. This argument proceeds in two steps: (i) there is strong evidence—much of it presented or reviewed in Bresnan 1993—that the preverbal PP is a subject at some level of linguistic representation, and (ii) once this is established, it becomes possible to argue, given certain theory-internal assumptions, that the postverbal NP must be a D-Structure object. However, the second step in this argument is questionable since it makes use of an assumption that is no longer universally accepted given the introduction

of the VP-Internal Subject Hypothesis. Thus, the argument as a whole loses its force. We review this argument below and explain why it can no longer be maintained. We show, furthermore, that no other convincing evidence exists that the postverbal NP is a direct object. If this is the case, there is no reason to assume that the subjects of unergative verbs found in locative inversion are anything other than subjects. Then, in the remainder of the section we argue that other evidence that has been taken as supporting an unaccusative analysis of the construction actually does not support such an analysis.

6.6.1   The Preverbal PP Is a Subject

In a paper on the locative inversion construction in English and Chicheŵa, Bresnan (1993) argues convincingly that the preverbal PP is a subject at some level of linguistic representation; specifically, she argues that it is a subject at LFG's f-structure, analogous in relevant respects to the GB framework's S-Structure. Bresnan argues against a variety of alternative analyses of the status of this PP and also presents a substantial amount of evidence in favor of this position, including evidence from subject raising, tag questions, subject extraction, and extraction from coordinate constituents; we review some of her arguments below. We argue that the preverbal PP does not originate as the subject of the verb and hence is not the external argument of the verb—but rather moves from a VP-internal position to subject position (and may subsequently topicalize).

The first piece of evidence for the subject status of the PP comes from the *that*-trace effect (Perlmutter 1971), which is discussed with respect to locative inversion by Bresnan (1977, 1993) and Stowell (1981), among others. Bresnan shows that extraction of the preverbal PP in the locative inversion construction patterns with extraction of subjects in showing the *that*-trace effect, even though extraction of VP-internal PPs does not lead to the effect. The *that*-trace effect is present only when the PP is extracted from a locative inversion construction, not when it is extracted from its noninverted counterpart. This contrast is illustrated in the examples below (these examples are given by Bresnan (1993), who bases them on her earlier work (Bresnan 1977)). The first pair of sentences, in (81), involves the extraction of a PP in an embedded locative inversion construction, and the second pair, in (82), involves the extraction of the PP in the noninverted counterpart of the embedded clause in (81).

(81) a. It's in these villages that we all believe ＿＿＿＿ can be found the
           best examples of this cuisine.
      b. *It's in these villages that we all believe that ＿＿＿＿ can be found
           the best examples of this cuisine.
           (Bresnan 1993:31, (62))

(82) a. It's in these villages that we all believe the finest examples of
           this cuisine can be found ＿＿＿＿.
      b. It's in these villages that we all believe that the finest examples
           of this cuisine can be found ＿＿＿＿.
           (Bresnan 1993:31, (63))

This pattern suggests that the PP is indeed a subject, since extraction from
VP-internal positions does not trigger this effect.

Additional evidence that the preverbal PP is a subject comes from the
interaction of locative inversion with raising, as discussed by Bresnan
(1993), L. Levin (1986), and Postal (1977), among others. When the loca-
tive inversion construction is embedded under a subject-raising verb, the
preverbal PP raises to become the surface subject of the matrix verb. In
(83) the embedded verb is passive; in (84) it is intransitive.

(83) In this spot, well toward the center and front of the vast herd,
      appeared about to BE ENACTED a battle between a monarch and his
      latest rival for supremacy. [Z. Grey, *The Thundering Herd*, 331]

(84) ... and to the cone were made to ADHERE bushy sprigs of mint of
      marjoram which Otto seized from the pile of green fodder beside
      him ... [IMIG 38 (65); cited in H. H. Hartvigson and L. K.
      Jakobsen 1974:59]

As the subject of the noninverted counterparts of these sentences, the NP
can also raise, as shown in (85). (We are assuming that *adhere* is an unac-
cusative verb.)

(85) a. A battle$_i$ appeared [t_i about to be enacted t_i in this spot].
      b. Bushy sprigs$_i$ were made [t_i to adhere t_i to the cone].

Yet nonsubjects do not typically raise, and, as shown in (86), the PPs do
not raise when the embedded verb has a subject.

(86) a. *In this spot$_i$ appeared [a battle$_j$ about to be enacted t_j t_i].
      b. *To the cone$_i$ were made [bushy sprigs$_j$ to adhere t_j t_i].

In fact, given the theory-internal assumptions of the GB framework, rais-

ing can only take place from subject position. As these examples illustrate, the interaction of locative inversion with raising also suggests that the preverbal PP is a subject.

In most of the literature on locative inversion it is usually simply assumed without argument that the PP cannot have originated as the subject of the verb. In fact, there is good reason to make this assumption. For instance, it receives support from the presence of passive verbs in locative inversion.

(87) Next to these, in a wooden cabinet of some antiquity, WAS KEPT a quantity of papers, handed down to the Institute by some long-vanished department of the (then) Colonial Office. [H. Holt, *A Lot to Ask: A Life of Barbara Pym*, 157]

Presumably, in (87) the PP is selected by the verb *keep* both when it is passive and when it is active. When the verb is active, it can take an external argument as well as the PP. Consequently, the PP cannot be an external argument when the verb is used in its active form and, therefore, it cannot be an external argument in the passive use of the verb, since active and passive forms of the same verb differ only with respect to their external argument. As there is no reason to assume a different analysis of locative inversions with intransitive verbs, there is no reason to expect that the PP is the external argument with such verbs either.

There is a difference of opinion concerning whether the preverbal PP in a locative inversion is actually in subject position at S-Structure (i.e., Spec, IP position), as proposed by Hoekstra and Mulder (1990), or whether it is in some other sentence-initial position, having moved there from subject position (i.e., Spec, CP position or a position created by adjunction to IP or CP), as proposed by Stowell (1981) and Coopmans (1989), among others. Although not proposing a movement account, Bresnan (1993), following Stowell, argues that the preverbal PP is a subject at LFG's f-structure, though it is topicalized at c-structure. Hoekstra and Mulder (1990) argue that the PP is in subject position, pointing out that locative inversion constructions can be embedded in sentences with *wh*-complementizers, so that it could not occupy Spec, CP position.

(88) We suddenly saw how into the pond jumped thousands of frogs.
(Hoekstra and Mulder 1990:32, (72))

Hoekstra and Mulder also provide evidence from questions formed on locative inversions against the proposal that the preverbal PP is adjoined

to IP. We do not take a stand on whether the locative PP is an S-Structure subject or whether, despite Hoekstra and Mulder's arguments to the contrary, it is in some other sentence-initial position, leaving a trace in subject position. As will become apparent in the next section, it is sufficient for our purposes to establish that the PP is a subject at some point in the derivation.

6.6.2   The Status of the Postverbal NP

We turn now to the second and more questionable step in the argument that locative inversion is an unaccusative diagnostic. Assuming that the preverbal PP is indeed a subject at some point in the derivation, the θ-Criterion and Projection Principle (Chomsky 1981, 1986b) can be used to argue that a verb found in the locative inversion construction must be an unaccusative verb or a passive verb; that is, the verb must not have an external argument—the property that unaccusative and passive verbs share. If the verb in a locative inversion construction were an unergative verb and therefore did have an external argument, then the subject position would be a θ-position, and the PP would not be expected to occupy this position without violating the θ-Criterion and Projection Principle.[11]

This line of argument for an unaccusative analysis of locative inversion loses its force with the introduction of the VP-Internal Subject Hypothesis. This hypothesis, proposed in the work of Fukui and Speas (1986), Koopman and Sportiche (1991), Kuroda (1988), Sportiche (1988), Zagona (1982), among others, suggests that all surface subjects, whether of transitive, unergative, or unaccusative verbs, originate inside VP, but then move to the Spec, IP position. The VP-Internal Subject Hypothesis does not render the unaccusative/unergative distinction unnecessary; rather, the external argument of transitive and unergative verbs would originate in Spec, VP, but the direct internal argument of an unaccusative verb would still originate as the sister of V. However, if the VP-Internal Subject Hypothesis is adopted, then the argument that unergative verbs are excluded from the locative inversion construction given in the previous paragraph does not go through. On the VP-internal subject analysis, the external argument of an unergative verb is generated within the VP, so that a PP complement of the verb could move into the Spec, IP position without violating the θ-Criterion and Projection Principle. Thus, with the adoption of the VP-Internal Subject Hypothesis, there is no reason that unergative verbs would be precluded from the locative inversion construction.

Assuming the VP-Internal Subject Hypothesis, once the PP moves into Spec, IP position, this position is no longer available for the external argument of an unergative verb. The external argument would move to a position to the right of the verb, presumably to a VP-adjoined position of the type that has been posited for focus (Rochemont 1986, Samek-Lodovici 1993). We assume that this movement is required because of the discourse function of the locative inversion construction. In (89) we sketch a possible derivation of a locative inversion with an unergative verb.[12]

(89) a. D-Structure: $[_{IP} e [_{I'} I [_{VP} NP [_{V'} V PP]]]]$
      b. S-Structure: $[_{IP} PP_i [_{I'} V_j + I [_{VP} [_{VP} t_k [_{V'} t_j t_i]] NP_k]]]$

Given this analysis, a locative inversion with an unergative verb does not violate structure preservation (cf. section 6.1). A locative inversion construction containing an unaccusative verb would involve the following structures:

(90) a. D-Structure: $[_{IP} e [_{I'} I [_{VP} [_{V'} V NP PP]]]]$
      b. S-Structure: $[_{IP} PP_i [_{I'} V_j + I [_{VP} [_{VP} [_{V'} t_j t_k t_i]] NP_k]]]$

The major difference between locative inversion constructions with unaccusative and unergative verbs involves the D-Structure location of the postverbal NP. In addition, this syntactic analysis allows transitive verbs to occur in the locative inversion construction. In fact, such constructions, though rare, are attested; their rarity on our account follows from the discourse function of locative inversion.

Even in the unaccusative accounts of locative inversion there is some discussion concerning whether the postverbal NP is in fact an S-Structure object, or whether it actually occupies some other position to the right of object position at S-Structure, possibly as a consequence of its discourse function, as in the structures we have proposed (see also Bresnan 1993). As noted by Coopmans (1989), it is not easy to discriminate between these two options a priori. One type of evidence that may be relevant to choosing between them involves the placement of the postverbal NP with respect to a postverbal PP in a construction with a bona fide unaccusative verb; this type of evidence has been discussed by Burzio (1986) with respect to there-insertion and is reviewed in section 4.1.3. If the postverbal NP in a locative inversion with an unaccusative verb could occur outside a PP, then it could not be occupying its D-Structure position. This would open up the possibility that even when the NP appears to be directly

postverbal, it might nevertheless not be in object position. Although such evidence is difficult to find since it would require an unaccusative verb cooccurring with two PPs—an unlikely situation—we have found several instances of locative inversion with clear unaccusative verbs where the NP is to the right of a postverbal PP, as in (91).

(91) Out of the mud-brick ruins of temples and ziggurats HAVE EMERGED over the last century the traces of cities whose names evoke the rise of human civilization: Babylon and Kish, Nimrud and Nippur, Ur and Uruk. [J. N. Wilford, "To Endangered List in Gulf, Add Archeology," 1]

Such examples confirm that the postverbal NP in a locative inversion with an unaccusative verb can be in a position to the right of the object position. All things being equal, there is no reason not to consider that this is the case for all locative inversions with unaccusative verbs. Furthermore, there is no reason to believe that the postverbal NP in a locative inversion with an unergative verb is in a different position.

We have also found a locative inversion token with a clear unaccusative verb where the NP occurs to the left of a postverbal, but apparently VP-internal, PP.

(92) From one cottage EMERGED Ian with a spade, rubber boots and an enthusiastic expression. [R. Billington, *Loving Attitudes*, 60]

As shown in (93), tests for VP constituency applied to the noninverted counterpart of (92) suggest that the PP is inside the VP in (92). There is no reason, then, to posit rightward movement of the postverbal NP in this instance.

(93) a. ??Ian emerged from the cottage with a spade and Phil did so with a rake.
     b. ??Ian said that he would emerge from the cottage with a spade and emerge he did with a spade.

However, it is interesting that in this particular token, the verb is a verb of appearance and hence is trivially compatible with the discourse function of the construction; this may explain why the postverbal NP has not moved out of object position. It is likely that discourse considerations typically require such movement and that this type of example is exceptional and arises because the verb itself is a verb of appearance. Whatever the ultimate explanation for this example might be, what is important for our account is that there are no comparable examples with verbs that are

independently known to be unergative. With unergative verbs the post-verbal NP originates in the VP-internal subject position and is moved to the right to a VP-adjoined position; the NP is never in object position and thus would not be expected to be found inside the PP.

6.6.3   Verbs Taking Sentential Complements

Bresnan (1993) argues that the unaccusative analysis of locative inversion is necessary to account for the data in (94), which were brought to her attention by D. Pesetsky.[13]

(94) a.   The cure for cancer was discovered in this very room. ~
           In this very room was discovered the cure for cancer.
           (Bresnan 1993, (107a))
     b.   That cancer was caused by eating too many tomatoes was
           discovered in this very room. ~
           *In this very room was discovered that cancer was caused by
           eating too many tomatoes.
           (Bresnan 1993, (107b))

These examples show that sentential complements cannot undergo locative inversion. Bresnan writes that an account such as hers, which relies on an unaccusative analysis of locative inversion, can explain this fact: "This contrast is precisely what we expect if objects in English occupy NP positions that exclude *that* and *for* complements, and the inverted theme arguments of locative inversions are objects" (1993:48). More specifically, she writes that "postverbal CP complements ... are disallowed: they cannot fill the c-structure object position to satisfy the verb" (1993:62). She suggests that an account such as ours has no natural explanation for this fact.

Recall, however, that on our account, as on most others, the postverbal NP is in VP-adjoined position, and not in the direct object position. Therefore, the restriction against the appearance of CP in the direct object position could just as easily be formulated as a restriction against CPs appearing in the VP-adjoined position. It is well known that object position is not the only position that is reserved exclusively for NPs. Emonds (1976), Grimshaw (1982), Koster (1978), Stowell (1981), and others have pointed out that the subject position is also an NP position; that is, non-NPs are excluded from this position. In the GB framework, such restrictions have been attributed to Case theory (Stowell 1981), but any theory, LFG included, will have to give some account of why CPs are excluded from certain positions. Pursuing this for a moment, since the exclusion of

CPs from certain positions has been attributed to Case theory in the GB framework, we would have to maintain that the VP-adjoined position is a Case position in order to explain the contrast in (94). We would have to state that this position is a Case position independently, precisely because the NPs that are found in this position will need to get Case. The post-verbal NP in a locative inversion cannot get Case in its position within the VP: VP-internal subjects are not in a Case position, and unaccusative verbs do not assign Case to their objects. We do not set out exactly how the postverbal NP would receive Case here; since our goal is understanding the constraints on the verbs in locative inversion, we have explored the syntax of the construction only to the extent that it impinges on this issue. We simply note that Case assignment is also a problem facing any analysis of the locative inversion construction; see Coopmans 1989 and Hoekstra and Mulder 1990 for particular proposals.

There is some support for taking the VP-adjoined position in locative inversion to be an NP position. Specifically, another effect that has been associated with NP positions is manifested in this position. Although the subject position is generally considered to be an NP position only, as J. Grimshaw (personal communication) has pointed out, it is well known that *wh*-CPs can sometimes be found in subject position even though *that*-CPs cannot. As evidence for this, note that *wh*-CPs pattern with NPs, rather than with *that*-CPs, with respect to subject-aux inversion.

(95) a. Does Pat's arrival continue to surprise you?
     b. ?Does why Pat came continue to surprise you?
     c. *Does that Pat came continue to surprise you?

This fact suggests that *wh*-CPs, unlike *that*-CPs, can be found in what are said to be NP positions. If the postverbal position in a locative inversion is an NP position in the same sense as the subject position, then we might expect to find *wh*-CPs in this position. Indeed, it appears that a *wh*-CP can be the postverbal element in a locative inversion.

(96) a. In this very room was discovered the cure for cancer.
     b. In this very room was discovered why smoking causes cancer.
     c. *In this very room was discovered that smoking causes cancer.

It seems to us and to other speakers we have consulted that the locative inversion with the *wh*-CP is close to perfect. This supports our proposal that the CP data that Bresnan presents should be explained in terms of grammatical categories rather than grammatical function.

Finally, it is worth pointing out that the absence of *that*-CPs cannot be attributed to the discourse function of the construction. It is certainly possible to introduce new or less familiar information in a sentential complement. It is also possible to focus sentential complements when they are found in those positions that are open to them using devices such as sentence accent. Furthermore, as pointed out by B. Birner (personal communication), the exclusion of *that*-CPs from locative inversion is an instance of a more general phenomenon. Such CPs are also excluded from a variety of inversions in English, as shown by the examples in (97), which Birner provided.

(97) a. The findings were surprising. # Also surprising was that tomatoes cure cancer.
      b. In that church they teach that life is an illusion. # Also taught there is that knowledge is evil.
      c. The children arrived at school, but the door was locked. ?On the wall was posted that the district had run out of funding.

And again, in each instance, we believe there is an improvement when a *wh*-CP is used instead of a *that*-CP.

(98) a. Their findings were surprising. Also surprising was why tomatoes cure cancer.
      b. In that church they teach that life is an illusion. Also taught there is why knowledge is evil.
      c. The children arrived at school, but the door was locked. On the wall was posted why the district couldn't keep the school open any longer.

The sentential complement problem, then, is not a problem that involves a particular grammatical function; rather, it is a problem involving the grammatical category that can instantiate a particular grammatical function.

6.6.4 The Locative Alternation

As part of this discussion, we want to briefly note that the intransitive form of the locative alternation, which might appear to further support the unaccusative classification of some of the apparently unergative verbs found in locative inversions, does not. Perusal of the extensive list of verbs appearing in the intransitive form of the locative alternation given by Salkoff (1983) shows that many of the unergative verbs found in the

locative inversion construction also figure in the intransitive form of the locative alternation. This alternation is illustrated in (99) with a verb of light emission.

(99) a. Fireflies glowed in the field. (locative variant)
     b. The field glowed with fireflies. (*with* variant)

This overlap might appear to further support the availability of a second, unaccusative classification for some unergative verbs because of the "holistic" interpretation associated with the subject of the *with* variant of the intransitive locative alternation. Both the transitive and intransitive locative alternations show this effect (Anderson 1971, Schwartz-Norman 1976, among others): the attribution of the property of being wholly affected to the location argument in the *with* variant (i.e., when it is not expressed in a PP). However, the expression of the location argument in this variant is different in the transitive and intransitive forms of the alternation: it is the object in the transitive form (*The farmer loaded the truck with hay*), but the subject in the intransitive form (as in (99b)). Nevertheless, on the assumption that the verb in the intransitive form of the alternation is unaccusative, it becomes possible to give a unified account of this effect in terms of the notion of D-Structure object, since the location argument will be the D-Structure object in the *with* variant in both forms of the alternation.

Given the near-paraphrase relation between the two variants of the intransitive locative alternation, it might seem natural to extend the unaccusative analysis to the locative variant—the variant that is the "base" of any locative inversions involving the alternating verbs. However, Hoekstra and Mulder (1990) point out that there is not necessarily support for this move. In particular, the holistic interpretation is associated only with the *with* variant. Thus, although the holistic effect might motivate an unaccusative analysis for the verb in the *with* variant, it does not motivate an unaccusative analysis for the verb in the locative variant; in fact, Hoekstra and Mulder assume that this variant does not receive an unaccusative analysis for all verbs. The desirability of an unaccusative analysis of the locative variant depends on the analysis of the semantic relationship between the two variants, a topic that we leave for further research.

6.6.5 Evidence from Passive Verbs

Locative inversions with passive verbs provide independent support for the proposal that locative inversion is not an unaccusative diagnostic. The

presence of passive verbs in the locative inversion construction has often been taken as evidence for the unaccusative analysis of this construction. On closer examination, however, it appears that at least some instances of locative inversions with passive verbs argue against the unaccusative analysis. The reason is that, as discussed in section 6.4.5, many instances of locative inversion with passive verbs appear to involve adjectival rather than verbal passives. If the passives are adjectival, then they receive an unergative analysis since adjectival passives are formed by lexical externalization (rather than movement) of the direct internal argument of a verbal passive (B. Levin and Rappaport 1986). Thus, the existence of adjectival passives in locative inversions is a problem for the unaccusative analysis of the locative inversion construction.

To summarize, in this section we have argued against an unaccusative analysis of the locative inversion construction. Specifically, we have shown that although there is convincing evidence in English that the preverbal PP is a subject at some level of linguistic representation, there is no equally strong evidence that the postverbal NP is an object. We have sketched an alternative analysis in which the postverbal NP is in a VP-adjoined position, allowing both unaccusative and unergative verbs to be found in the construction.

6.7 An Alternative Account

In this section we briefly consider an alternative syntactic account, proposed by Hoekstra and Mulder (1990), of the presence of unergative verbs in the locative inversion construction. This account, like the meaning shift account discussed briefly in section 6.5, posits two meanings for the unergative verbs found in locative inversion: one meaning that is compatible with an unaccusative classification of the verb and is associated with its appearance in locative inversion and a second that is compatible with an unergative classification. This account allows an unaccusative analysis of the locative inversion construction to be maintained, a property that is not necessarily in its favor given the discussion in section 6.6. The source of the multiple meanings on this account is not a rule of meaning shift, but the compatibility of certain verbs with two different syntactic projections of their arguments, each representing a distinct meaning. In this sense, the analysis instantiates the constructional approach discussed in chapter 5, applying it to the variable behavior of verbs in locative inversion.

Hoekstra and Mulder (1990) take locative inversion to be an unaccusative diagnostic, but they depart from some other accounts by proposing

that the NP and the PP form a small clause, which is itself the internal argument of the verb, as in (100); either the NP or the PP then moves to subject position, giving rise to the noninverted or inverted construction, schematized in (101a) and (101b), respectively.

(100) e [$_{VP}$ V [$_{SC}$ NP PP]]

(101) a. NP$_i$ [$_{VP}$ V [$_{SC}$ t_i PP]]
       b. PP$_i$ [$_{VP}$ V [$_{SC}$ NP t_i]]

The small clause analysis is motivated in part by a desire to maintain a binary-branching structure (see also the discussion of Hoekstra's (1988) account of the resultative construction in section 2.4.1). This analysis is also supposed to represent the fact that the referent of the NP is located (or comes to be located) at the place denoted by the PP, a relation that can be represented as a relation of predication: the PP is predicated of the NP. For Hoekstra and Mulder, a predication relation must always be represented via a clausal structure, providing further motivation for the small clause analysis. As independent support for the small clause analysis, Hoekstra and Mulder suggest that there is evidence that the verb does not impose selectional restrictions on the NP, as would be expected on this analysis since the NP is not an argument of the verb; however, later in this section we discuss evidence that suggests otherwise. What is most important is that the small clause analysis would also require that the verb in the locative inversion construction not take an external argument; if it did, the movement of an NP or PP to the subject position would not be possible. Therefore, for the reasons that were spelled out in section 6.6.2, the verb must be unaccusative.

Hoekstra and Mulder's (1990) explanation of the presence of unergative verbs in the locative inversion construction resembles the meaning shift account in assuming that a second meaning is available for these verbs. As discussed in chapter 5, they propose that "[c]ertain predicates vary, within limits, in their meaning, such that they may take arguments of different types" (1990:75). As applied to the problem posed by locative inversion, verbs that typically select an individual realized as an NP as the external argument, and thus can receive an activity interpretation, can instead select a state of affairs, realized as a small clause internal argument, thus becoming verbs of existence.

(102) a. NP [$_{VP}$ V]
       b. e [$_{VP}$ V [$_{SC}$ NP PP]]

This approach differs from the meaning shift approach, however, in denying the existence of lexical rules of meaning shift. As the discussion in section 6.5 shows, the ability of an unergative verb to be found in a locative inversion construction does not depend solely on the verb. It seems to us that positing that a verb can have two meanings does not help in understanding the complicated interacting factors that determine which unergative verbs actually tend to manifest the second meaning (or argument selection option in Hoekstra and Mulder's terms) or, to the extent that this option is manifested by some verbs, what circumstances favor it. This does not mean that Hoekstra and Mulder's approach could not be modified to take the discourse function of the construction into account, but it is likely that any attempt to do this would not gain much from having two meanings available for these verbs.

One facet of Hoekstra and Mulder's account is at odds with our observation in section 6.5 that the verb in a locative inversion is in some sense predictable from the postverbal NP. As just mentioned, Hoekstra and Mulder propose that the verb in a locative inversion construction is an unaccusative verb taking a small clause complement, as schematized in (102b). They note that on their analysis the verb should not exert any selectional restrictions on the postverbal NP in a locative inversion; rather, it should exert selectional restrictions only on the small clause as a whole. As support for this analysis, they cite examples like those in (103), some of which involve verbs of manner of motion, and point out that the subjects in these examples are not selected by the verb.

(103) a. My skin turned red.
      b. John flew into a rage.
      c. The well ran dry.
      d. They fell in love.
         (Hoekstra and Mulder 1990:11, (19))

As we have shown, the relationship between the verb and the postverbal NP that appears to license the use of unergative verbs in locative inversions seems incompatible with the predictions of Hoekstra and Mulder's small clause analysis. The examples discussed in section 6.5 show a very close connection between the verb and the postverbal NP in locative inversions with unergative verbs: either the verb takes a limited range of arguments to begin with or it is found with a limited set of arguments in the construction. This dependence is not expected on a small clause analysis, raising questions about its ultimate viability.

As for the examples in (103) that Hoekstra and Mulder cite in favor of the small clause analysis, it is clear that they represent idiomatic uses of the verbs. The verbs are semantically "bleached": they have lost basic elements of their meaning, including any sense of motion. In fact, all of the examples describe changes of state and hence none of them have locative inversion analogues. When the same verbs are found in locative inversions, the central elements of their meaning may be deemphasized, but they are not lost. This is evident, for instance, from an examination of the locative inversions with the verb *fly*, cited in (77). Although Hoekstra and Mulder's examples may require a small clause analysis, their distinctive properties do not make them the right examples to use to address the issue of selectional restrictions in locative inversion. Rather, the behavior of unergative verbs in locative inversion supports an analysis in which such verbs do not take a single argument realized as a small clause, further weakening the reasons for positing two meanings for the unergative verbs in the locative inversion construction. Hoekstra and Mulder's reasons for positing an unaccusative analysis are also rendered less compelling; as pointed out above, it was the small clause structure that led to an unaccusative analysis.

6.8   The Larger Picture

To conclude this chapter, we look briefly at some wider implications of our study of locative inversion. We began our discussion of this construction by noting that at least on the surface, it shows properties that are distinct from those of other unaccusative diagnostics. Most important, the argument of the verb is found postverbally, suggesting that if the construction were an unaccusative diagnostic, it wears its unaccusativity on its sleeve. We called such diagnostics "diagnostics of surface unaccusativity." However, in the course of this chapter we argued that the reasons for considering locative inversion to be an unaccusative diagnostic are not all that strong, attributing some of the properties that suggested otherwise to its discourse function. The question that arises is, What are the implications of our study of locative inversion for purported diagnostics of surface unaccusativity more generally?

Although we have been unable to carry out in-depth investigations of constructions that might qualify as diagnostics for surface unaccusativity in other languages, it appears that candidate constructions are found with a class of verbs that is "too big" in exactly the same sense as the class of

verbs found in the locative inversion construction. (Most of this work does not examine the question of whether all unaccusative verbs can show the relevant phenomena, so it is more difficult without further research to know whether the class of verbs is also "too small" in the same way, though the examples illustrating verbs found in these constructions suggests that this is probably the case.) We mention several examples. The Russian genitive of negation has been argued to be an unaccusative diagnostic (Pesetsky 1982), but Babby's (1978, 1980) data concerning its distribution suggest that the class of verbs found in this construction also includes some of the same types of unergative verbs as are found in English locative inversion. And, as mentioned above, Babby's characterization of the factors that allow verbs that are not verbs of existence or appearance to occur in the construction is equally apt for English. Torrego (1989) discusses the distribution of postverbal bare plurals in Spanish, and from her discussion it seems that their distribution shows certain properties that are reminiscent of the distribution of locative inversion.

The additional diagnostic for surface unaccusativity that we are most familiar with is *ne*-cliticization in Italian. Its status as an unaccusative diagnostic was established by Belletti and Rizzi (1981) and by Burzio (1986), among others, who linked its distribution to properties of the syntactic configuration in which it is found. Furthermore, it has often been claimed that this construction is found only with verbs that take the auxiliary *essere* 'be', reinforcing its classification as an unaccusative diagnostic. However, Lonzi (1985) points out that a variety of verbs that take the auxiliary *avere* 'have' do permit *ne*-cliticization, but only when they are found in a simple tense; *ne*-cliticization is not possible when these verbs are found in a complex tense in which the auxiliary is expressed.

(104) a. *Non ne   ha trillato forte   nessuna (di sveglie).
          not of them has trilled loudly none   (of alarm clocks)
          (complex tense, *avere* selected; Lonzi 1985:112, (60b))
      b. Non ne   trilla forte   nessuna (di sveglie).
          not of them trills loudly none   (of alarm clocks)
          (simple tense; Lonzi 1985:112, (60a))

(105) a. *Ne   ha   camminato tanta, di gente, su
          of them have walked   many of people on
          quei   marciapiedi.
          those sidewalks
          (complex tense, *avere* selected; Lonzi 1985:112, (64b))

    b. Ne   cammina tanta, di gente, su quei
        of them walks   many of people on those
        marciapiedi.
        sidewalks
        (simple tense; Lonzi 1985:112, (64a))

Lonzi's data raise questions about the validity of *ne*-cliticization as a diagnostic, despite Belletti and Rizzi's and Burzio's arguments. In section 6.6.2 we showed that the arguments linking locative inversion to the unaccusative syntactic configuration do not hold in the context of the VP-Internal Subject Hypothesis. We might ask whether Belletti and Rizzi's and Burzio's arguments that *ne*-cliticization is an unaccusative diagnostic can be maintained, and in fact, Saccon (1992) raises the same question.[14]

Lonzi proposes that the availability of *ne*-cliticization is governed by discourse considerations; her statement of these factors suggests that they are not too different from the ones that we have discussed for locative inversion. A preliminary investigation of our own suggests that unergative verbs are found in this construction under circumstances similar to those that sanction the appearance of English unergative verbs in locative inversion—that is, in contexts where the verb describes a characteristic activity or process of the entity it is predicated of. Additional examples can be constructed to illustrate this.

(106) a. *Di ragazze, ne   hanno lavorato molte nelle
          of girls   of them have   worked many in the
          fabbriche di Shanghai.
          factories of Shanghai
          (complex tense, *avere* selected)
      b. Di ragazze, ne   lavorano molte nelle fabbriche
          of girls   of them work   many in the factories
          di Shanghai.
          of Shanghai
          (simple tense)

(107) a. *Di ragazzi, ne   hanno russato molti nel
          of boys   of them have   snored many in the
          corridoio del   treno.
          corridor of the train
          (complex tense, *avere* selected)

> b. Di ragazzi, ne   russavano molti nel   corridoio
>   of boys   of them snore   many in the corridor
>   del   treno.
>   of the train
>   (simple tense)

Lonzi makes one particularly interesting comment concerning the following example:

(108) Ti accorgerai che in quest'ufficio ne   telefonano
       you'll realize that in this office   of them telephone
       davvero molti, di stranieri.
       really   many of foreigners
       (Lonzi 1985:113, (71b))

She points out that the preferred interpretation of this sentence is the one where the telephone calls come into the office, rather than the one where the telephone calls originate in the office. This comment brings to mind the observation in section 6.4.4 on verbs of motion, where appearance-like interpretations are favored.

Based on our preliminary investigations of phenomena said to involve "surface unaccusativity" in other languages, we speculate that such phenomena are not unaccusative diagnostics strictly speaking, but rather to a large extent receive their explanation from discourse considerations. We leave this question and its implications to further study.

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Afterword

The primary goal of this book has been to substantiate the thesis that unaccusativity is semantically determined and syntactically encoded. Although this thesis is not new—as mentioned in chapter 1, it is essentially the original version of the Unaccusative Hypothesis proposed by Perlmutter (1978)—it has proved remarkably difficult to support in detail, since so much about the behavior of verbs has not been understood. It is not surprising, then, that in the course of trying to determine the lexical semantic underpinnings of unaccusativity, a variety of issues concerning the nature of the lexical semantic representation of verbs were touched upon, and certain insights into such representations have emerged.

Virtually all generative theories developed over the last fifteen years have taken major aspects of the syntax of sentences to be directly projected from the lexical properties of verbs and other predicators. Within the GB framework, this idea finds its expression in the various formulations of the Projection Principle (Chomsky 1981). In order to implement the Projection Principle, verbs must have structured lexical representations, whose structure can then determine major aspects of the syntax of a sentence. These representations may take the form of an argument structure, or they may be more semantic in nature, taking the form of a lexical semantic representation of some type.

One of the challenges facing theories that include a principle like the Projection Principle is the fact that many verbs can appear in a bewildering range of syntactic contexts. If this kind of variety turns out to be the rule rather than the exception, then maintaining the Projection Principle may entail a wholesale proliferation of lexical entries for verbs. On the other hand, it is possible to reject the basic insight behind the Projection Principle. A fundamental motivation behind the instantiation of the constructional approach developed by Hoekstra (1992) (see also Hoekstra