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Chapter 11 Why Events?

1. Variable Behavior Verbs¹

1.1. The Paradigm

The fundamental premise of the remainder of this work is that argument structure is licensed by functional syntactic structure, and specifically, functional structure that is interpreted as event structure. This syntactic structure, in turn, affects aspects of the basic meaning of its L-head, where by L-head we mean a (category neutral) listeme, part of the conceptual array. The functional structure may further have the effect of 'verbalizing' the L-domain (if not already verbalized by categorial morphology), where by the L-domain we mean the maximal category the L-head projects.² The L-head, or more accurately, the listeme, in turn functions as a modifier of the structure, giving rise to appropriateness or oddity, as the case may be, and as already discussed

¹ Earlier versions of this section, as well as some sections of Chapter 12, appeared in Borer (1994, (1998a). The text which follows here differs from these versions in important ways, notably, in setting aside the mapping hypothesis account proposed in Borer (1994), and in developing a more formal account of aspect, within the more general approach to functional structure proposed and motivated in Book I.

The argument in this section is based fundamentally on the status of polysemy within the verbal domain. An examination of polysemy within the intransitive domain and otherwise has led van Hout (1992) to conclusions which are rather similar to our own concerning the division of labor between the syntax and the lexicon. Van Hout (1996) and subsequent work, however, weakens the conclusions of van Hout (1992), in assuming that verbs *are* lexically specified as \pm telic. I return to aspects of these distinct systems throughout the ensuing discussion.

²Or, alternatively, adjectivizing the L-domain. We already noted (see Book I, Chapter 1, section 2, and see also section 1 of Chapter 10) that L-domains are category neutral only insofar as they are headed by a category-neutral listeme, and that as a result, categorizing by functional structure is only 'visible' for what appear like productive \emptyset -alternation (or conversion) cases. As there are no productive \emptyset -alternations/conversions involving adjectives in English, it would appear that for reasons that may or may not be English-specific, adjectives, as L-heads, are never "pure" category-less listemes. Rather, all adjectives are already 'like' *verbalize* and not like *form*, and the L-Ds they project are always categorized vacuously by the functional structure. See fn. 26 below for some additional brief comments.

extensively. To the extent that argument structure is altogether severed from the properties of the L-head that is to become the verb, we expect massive polysemy. Such polysemy was already illustrated within the nominal domain. We now turn our attention to at least one well-known case of polysemy within the verbal domain. In the remainder of this chapter, we will illustrate this polysemy within the domain of verb structures, arguing not only that it occurs, but that its best characterization is through the projection of functional structure which is interpreted as event structure.

The starting point of our discussion is the paradigm of so-called *variable-behavior verbs*, which went unnoticed for many years, but has received massive attention in the past ten. The reader should note that *variable-behavior verb* here is a technical term, referring specifically to intransitive verbs that show a variable unaccusative/unergative behavior. While many other verbs show polysemy, and are hence variable behavior verbs, our discussion here focuses on this specific subset, as contrasts associated with their variable behavior can be easily illustrated.

If one considers the analysis of the unaccusative/unergative distinction as it comes to us within the GB tradition, starting, say, with Burzio (1981, 1986) and continuing with much subsequent work, the picture is more or less as in (1). Setting aside verbs that occur with indirect complementation or with clausal complements, there are essentially three types of verbs that take direct arguments, and which we will refer to as *transitive*, *unaccusative*, and *unergative*.³ As there are only two types of direct arguments, this picture covers all logical possibilities:⁴

- | | | |
|---|--|--|
| 1. <i>Transitive:</i> | <i>Unaccusative:</i> | <i>Unergative:</i> |
| [_{VP} External [_V V Internal] | [_{VP} ∅ [_V V Internal] | [_{VP} External [_V V ∅] |

The empirical consequences of the paradigm in (1) have been considered to provide considerable evidence for endo-skeletal (or projectionist) approaches. The systematic syntactic patterning of arguments of unaccusative verbs with direct objects, vs. the systematic syntactic patterning of arguments of unergative verbs with subjects of transitives appears to lend considerable credence to the view that information concerning the syntactic projection of arguments is, indeed, specified in the lexical entry of the verb. In turn, to the extent that the class of unaccusative and unergative verbs is overwhelmingly the same in different languages, lexical

³ Terminology, as well as original classification, from Perlmutter (1978). However, as Perlmutter did not associate the classification with lexical entries of verbs and properties listed therein, and was, in fact, quite aware of the problems for such a lexical encoding presented by variable-behavior verbs, the following critique does not apply to his research.

⁴ We are concerned here solely with verbs that take direct nominal arguments. A notational clarification is therefore in order: the term *unaccusative* has been used ambiguously in the literature to refer to two distinct verbal types, both sharing the absence of an external argument: intransitive verbs, whose sole argument displays some syntactic diagnostics typically associated with direct objects; and verbs which do not project a direct nominal argument altogether (i.e., raising-to-subject verbs, weather verbs). In this study, the term *unaccusative* is restricted to the first type, and the second type is not discussed any further. Note that aspectual properties correlated with the unaccusative/unergative distinction have been stated with respect to those intransitives which take direct nominal arguments, and that the 'raising' type is typically stative, rather than eventive, a fact that is rather easy to correlate with the absence of an internal direct argument, in line with the discussion to follow.

information concerning the syntactic projection of arguments would appear to derive from the verb's lexical semantics.

However, as has been observed in numerous studies, the unaccusative/unergative alternation is not nearly as stable and lexical-entry dependent as it is occasionally presented to be. Thus, consider the following well-known examples:⁵

2. a. *Jan heeft gesprongen* (Dutch)
Jan has jumped
- b. *Jan is in de sloot gesprongen*
Jan is in the ditch jumped
3. a. *Gianni ha corso* (Italian)
Gianni has run
- b. *Gianni e corso a casa*
Gianni is run to home
4. a. **Ne hanno corso/i due*
of-them have run two
- b. *Ne sono corsi due a casa*
of-them are run.agr two to home (Hoekstra and Mulder, 1990).

⁵ The Hebrew transcription used in this work represents a compromise between the pronunciation of Modern Hebrew and an attempt to render the examples, at least up to a point, morpho-phonologically transparent. Specifically, in MH pronunciation, spirantized *k* is pronounced as /x/, otherwise occurring in the language, spirantized *b* is pronounced as /v/ otherwise occurring in the language, and the pronunciation /k/ is associated with two distinct segments, one which spirantizes, and one which does not. Further, although contemporary phonological processes still distinguish between the historical glottal stop (ʔ) and the historical pharyngeal stop (ɣ), both are pronounced as glottal stops in MH. Wishing to help the reader to discern relatedness between morpho-phonologically related forms, the following transcription conventions are adopted:

Historical glottal stop (ʔ)	ʔ
Historical pharyngeal stop (ɣ)	ɣ
Spirantized <i>b</i> (v)	<u>b</u>
<i>v</i> (consonantal) (v)	v
<i>x</i> (x)	x
Spirantizable <i>k</i> (when unspirantized - ɣ)	k
Spirantized <i>k</i> (ɣ)	<u>k</u>
non-spirantizable <i>k</i> (ʔ)	q
Spirantized <i>p</i> (v)	<u>p</u>

5. a. *ha.xadašot hericu 'et dan le.misrado* (Hebrew)
 the.news made.run OM Dan to.office.his
 'The news made Dan run to his office'
- b. *#ha.xadašot hericu 'et dan be.misrado*
 the.news made.run OM Dan in.office-his
 'The news made Dan run in his office'
- c. *ha.boss heric 'et dan be.misrado/l.-misrado*
 the.boss made-run OM Dan in.office-his/to.office his
 'The boss made Dan run in his office/to his office'
6. *In het tweede bedrijf werd er door de nieuwe acteur op het juiste ogenblik gevallen*
 In the second act was there by the new actor on cue fallen
 (Dutch, Perlmutter, 1978)
7. a. *ha.praxim nablu le-rani/li*
 the.flowers wilted to Rani
 'Rani's/my flowers wilted'
- b. *ha.praxim₁ nablu lahem₁*
 the.flowers wilted to.them
 'The flowers were wilting (implies self-directed motion)'
8. a. *ha.qir hitporer le-rina/la*
 the.wall crumbled to.Rina
 'Rina's/her wall crumbled'
- b. *ha.kir₁ hitporer lo₁ (le-'ito)*
 the.wall crumbled to.it (slowly)
 'The wall was crumbling slowly' (Hebrew)

The paradigm in (4)-(6) illustrates that verbs typically classified as unergative, such as *springen* 'jump' in Dutch and *correre* 'run' in Italian, which typically take an unergative auxiliary (*hebben* and *avere* respectively) and which do not allow *ne*-cliticization (Italian), exhibit the full range of unaccusative characteristics, selecting *zijn* and *essere* and allowing *ne* cliticization, if a PP specifying a terminal point of the motion is added. (5) illustrates that in Hebrew, the verb *rac* 'run', under causativization (*heric*, 'make run') results in an obligatory *agent* interpretation without a PP terminal, but allows a non-agentive *causer* reading in the presence of a PP terminal. If indeed, as is often argued (see Hale and Keyser, 1993; Reinhart, 1996), causatives associated with unaccusatives allow a non-agentive *causer* reading, but not causatives which are associated unergatives, this would suggest that *rac* 'ran' is an unaccusative in the context of 'to his office' but unergative in the context of 'in his office'.

Although it is sometimes assumed that the presence of an overt result phrase or a terminal PP is crucial for the emergence of variable behavior (cf. Hoekstra and Mulder, 1990), this appears to be the case, if at all, only for manner of motion verbs with meanings such as 'jump', 'run', etc. When other intransitives are considered, both unergative and unaccusative diagnostics can emerge in the absence of any additional structure. (6) illustrates that the Dutch impersonal passive, argued to be restricted to unergative verbs, can occur with the verb *vallen* 'fall', typically classified as unaccusative, provided that self-directed motion is ascribed to the argument (*fall on purpose*). (7)-(8) illustrate that in Hebrew the argument of verbs such as *nabal* 'wilt' and *hitporer* 'crumble'

(among many others) can be either internal, allowing a possessor dative, or external, allowing a reflexive dative.⁶

It has been further observed (already by Perlmutter, 1978, but see especially Van Valin, 1990) that the unaccusative/unergative diagnostics associated with *variable behavior verbs* are linked to clear interpretational correlations. Specifically, syntactic unaccusative diagnostics are associated with telic and non-agentive characteristics. Syntactic unergative diagnostics, on the other hand, are typically associated with atelicity and with agentive interpretation.⁷ As an illustration, (7a), where *nabal* 'wilt' is associated with a possessor dative, and is hence an unaccusative, clearly means that the flowers have died, rendering (9a) anomalous. On the other hand, (7b), associated with a reflexive dative, and hence unergative, implies that the flowers were engaged in a wilting activity, and no termination is implied, making (9b) perfectly felicitous:

9. a. ??*ha.praxim nablū le-rani me-axat 'ad šaloš ve-'az yarad gešem ve-hem hit'ošešu*
the.flowers wilted to.Rani from 1pm to 3pm and then it rained and-they recovered
b. *ha.praxim₂ nablū lahem₂ me-axat 'ad šaloš ve-'az yarad gešem ve-hem hit'ošešu*
the.flowers wilted to.them from 1pm to 3pm and then it rained and-they recovered

⁶ The following is a description of the distribution of possessor dative and reflexive dative, as argued for in Borer and Grodzinsky (1986). I return to these diagnostics in section 1.2 below. Note that the descriptions in (i)-(ii) do not range over the same type of linguistic domains. While the distribution of possessor datives is a species of binding (or movement, as Landau, 1997, argues), the distribution of reflexive datives is linked to argument structure, or to event structure, as I shall argue, and not to a position, as such (and see Chapter 17, section 2.3 for the analysis of reflexive datives):

- i. Possessor dative binds the determiner of the possessed NP (D-structure)
- ii. Reflexive dative is coindexed with an external argument.

⁷ Within the area of *aktionsart* and *aspect*, terminological proliferation as well as terminological confusion is rampant. In what follows, I will use terminology in the following way:

- a. *telic*: A semantic, *aktionsart* term. Vendler's *accomplishments and achievements*; Bach's (1986) *eventives*, as distinct from either *states* or *activities*; Kiparsky's (1998) *boundedness*.
- b. *atelic*: not *telic*; Vendler's *activities* and *states*.
- c. *accomplishment*, *achievement*, *activity*, and *state* are used following Vendler's original classification.
- d. *perfective*: a morphological term. The grammatical marking on verbs in, e.g., Slavic languages, typically referred to by traditional grammarians as *perfective*, and at times argued to correlate with telicity (see Chapter 15 for much discussion).
- e. *imperfective*: a morphological term. Not *perfective*, i.e., the bare (unmarked) stem in Slavic languages (primary imperfective); the *imperfective*-marked stem in Slavic languages (secondary imperfective), at times argued to correlate with atelicity, at other times argued to correlate with progressive (see Chapter 15 for much discussion).
- f. *perfect*: a morphosyntactic-semantic term, referring to the morphological realization of bound grammatical aspect. In English, marked with the morpheme *-en* (*eaten*, *danced*). Not implicated in *aktionsart*.
- g. *progressive*: a morphosyntactic-semantic term, referring to [*be V+ing*] forms within the verbal domain in English. I will argue that it is not implicated in *aktionsart* and is an instance of outer (grammatical) aspect in the sense of Verkuyl (1972) (see Chapter 17, section 2.4 for some discussion).

The systematic correlation between telicity/atelicity and unaccusative/unergative diagnostics has led Dowty (1991) to stating the following correlations (henceforth Dowty's Correlations):

10. **Dowty's Correlations:**

Agentive, Atelic: definitely unergative

Non-Agentive, Telic: definitely unaccusative

If indeed the distinction between unaccusative intransitive verbs and unergative intransitive verbs is not stable and fixed, and one and the same verb may appear in both classes, and if indeed Dowty's Correlations are robust, then one is tempted to argue, as has Van Valin (1990), that the unaccusative/unergative distinction is altogether *not* a syntactic one, but rather, an aspectual/semantic one. It is not a property of a particular lexical entry, but rather, a property of the entire predicate, of which the meaning of the verb is just one part. An (intransitive) predicate may be either agentive/atelic or non-agentive/telic, and if properties such as auxiliary selection and *ne*-cliticization are dependent on aspectual distinctions, there remains no motivation for assuming that arguments of unaccusatives and unergatives merge in different syntactic positions, or are distinct *syntactically* at any level. Further, within such an approach, it seems, the need for a PP which defines a terminal point in (4)-(6) above receives a natural account: the *predicate*, rather than the verb itself, is telic in the presence of such a PP and hence we expect "unaccusative" diagnostics. In the absence of such a terminal point, atelicity results, and "unergative" diagnostics are attested.

What is at stake here, note, is the relationship between syntactic structure and interpretation. Suppose Dowty is correct, and it is truly the case that the unaccusative/unergative distinction has systematic semantic content. Several options are open to us: we could argue that the unergative/unaccusative distinction has independent semantic and syntactic formal properties. In other words, that unaccusative verbs select an internal argument, and, quite independently, predicates headed by unaccusative verbs receive a telic interpretation. This is clearly the worst theory. To the extent that Dowty's Correlations are true and universal, stating them in terms of independent properties of the syntax and the semantics of unaccusatives and unergatives makes them arbitrary and unexplained. If these properties are indeed entirely independent, why should telicity correlate systematically with an internal, rather than external argument?

On the other hand, it could be the case that the unaccusative/unergative distinction has primarily semantic properties, and that diagnostics erstwhile considered syntactic are, in fact, semantic in nature, in that they do not indicate, specifically, a different (underlying) position for the sole direct argument. If that is indeed the case, then all intransitives could project as in (11), making the need for movement to subject position, in the case of unaccusatives, unnecessary. From the perspective of the syntactic computation, note, abandoning such movement is actually economical. In turn, e.g. auxiliary selection could be accommodated by specifying that certain auxiliaries are sensitive to the relevant semantic distinction (e.g., via selection. It could be proposed, for instance, that *zijn* selects, or checks the properties of, a telic predicate). This is in essence the solution adopted by Van Valin (1990) (and see also Dowty 1979, where this position is explicitly defended).

11. [_S Kim ... [_{VP} arrived/laughed]]

Crucially, the issue here is empirical. If, as Van Valin contends, the unaccusative/unergative syntactic diagnostics can be reanalyzed in terms of the compositional semantics of predicates, then the syntactic diagnostics of the unaccusative/unergative distinction should systematically correlate with the telic/atelic distinction. For instance, auxiliary selection should always be reducible to (a)telicity, *ne*-cliticization should only co-occur with telic predicates, impersonal passive should always co-occur with atelic predicates, the reflexive dative in Hebrew should always co-occur with atelicity, while possessor datives should only co-occur with telic predicates, etc. If, on the other hand, it turns out that some properties of the syntactic diagnostics of the unergative/unaccusative distinction cannot be reduced to the telic/atelic distinction, and that they require unaccusatives to have a syntactically projected internal argument, and unergatives to have a syntactically projected external argument, then it would follow that the distinction cannot be fully reducible to the compositional semantics of predicates, but rather, is syntactically reflected.

Finally, should it turn out that the unaccusative/unergative distinction is associated both with a semantic distinction and with a distinction of syntactic argument projection, a parsimonious theory would attempt to derive one of them from the other. There are two logical possibilities of course. One could attempt to derive the distinct syntax from the distinct semantics. As we will see, this is the route pursued by Levin and Rappaport (1989), and Levin and Rappaport Hovav (1992a,b). On the other hand, one may try to derive the distinct semantics from the distinct syntax. This will be the direction pursued in this study.

First, however, we must convince ourselves that the unaccusative/unergative distinction is indeed associated with a syntactic distinction that is not reducible to its semantic properties.

1.2. Evidence for Syntactic Representation for Variable Behavior Verbs

An argument for syntactic representation of the unaccusative/unergative distinction, postulating an internal argument for the former but not for the latter, is presented by Levin and Rappaport (1989) based on the distribution of partitive *ne* cliticization in Italian. Note, as our starting point, that it's the distribution of *ne* (in intransitive) constitutes a subset of telic environments. Specifically, partitive *ne* cliticization is possible, in telic intransitives, from a post-verbal subject, but not from a pre-verbal subject, as illustrated by (12):

12. a. *ne* *arrivano* [*molti ne*]
 of-them arrive many
 b. **[molti ne] ne* *arrivano*

Following primarily Belletti and Rizzi (1981), Levin and Rappaport (1989) assume that the pre-verbal/post-verbal asymmetry here is reducible to proper government. While the post-verbal trace of *ne* is properly governed by the verb, this is not the case for the pre-verbal trace, leading to ungrammaticality. In turn, as is well known, post-verbal subjects of unergative verbs do not allow *ne* cliticization, as illustrated by (13), presumably because the post-verbal subject of unergatives is outside the VP, and is not governed by the verb:

13. **ne* *telephonano* [*molti ne*]
 of-them telephone many

This explanation, Levin and Rappaport point out, is only available if the post-verbal [*molti ne*] occupies different structural positions in unergative and unaccusative constructions, thereby

suggesting a syntactic distinction between the two, with an 'external' argument for unergatives, and a syntactic 'internal' argument for unaccusatives.

We note, as an aside, that to the extent that *ne*-cliticization is possible in atelic transitive structures, from the direct object, as (14) illustrates, a semantic explanation for the distribution of *ne*-cliticization would have to take into account at least some syntax, and could not be based purely on the semantics of (a)telicity.

14. a. *Kim ne ha spinti [molti ne] (per molte ore)*
 Kim ne has pushed many (for many hours)
 b. *Kim ne ha guidate [molte ne] (per molte ore)*
 Kim ne has driven many (for many hours)

The properties of *ne*-cliticization in transitives aside, however, the argument put forth in Levin and Rappaport (1989) is weakened by the fact that partitive *ne*-cliticization is only possible from (weak) indefinites, which are independently restricted pre-verbally in Italian. Further, as Van Valin (1990) points out, an explanation for the post-verbal restriction may be available in terms of the focus-topic distinction, with post-verbal position favored independently of government. If the post-verbal restriction is otherwise explained, and given that *ne* is, to begin with, only possible, for intransitives, in telic contexts, then it may very well turn out (as conceded, in fact, in Levin and Rappaport Hovav, 1992b) that there is no conclusive argument from *ne* cliticization for the syntactic projection of an internal argument in unaccusatives and its availability may receive an exclusively semantic explanation.⁸

Everaert (1992) gives another argument for the syntactic representation of the unaccusative/unergative distinction. He observes the following auxiliary selection in light-verb idiomatic constructions in Dutch:

15. a. *Het vliegtuig is geland*
 the plane is landed
 b. *De voorstelling is aangevangen*
 the performance is begun
16. a. *Het vliegtuig heeft een landing gemaakt*
 the plane has a landing made
 b. *De voorstelling heeft een aanvang genomen*
 the performance has a beginning taken.

⁸ And see Chapter 16, fn. 13, as well as Chapter 18, section 3.2 for the suggestion that the *ne*-cliticization test, as such, is orthogonal to the unaccusative/unergative distinction.

We note that auxiliary selection for intransitives, typically used in distinguishing unaccusatives from unergatives, is in actuality inconclusive under any account. It appears that the only unfailingly robust generalization concerning auxiliary selection within the event domain is that intransitive atelic (non-stative) predicates always select *avere/hebben*. However, adjectives, both unaccusative and unergative, select *essere/zijn*, as do reflexives, making the selection of *essere/zijn* uninformative with respect to determination of event type. For a compelling argument that reflexives are *not* unaccusatives (contra Marantz, 1984 and much subsequent work), see Reinhart and Sioni (to appear). See also fn. 25 below for some relevant comments.

For any aspectual calculus, Everaert notes, (15a) and (16a) on the one hand, and (15b) and (16b) on the other, are synonymous. Both are telic in the relevant sense, and the NPs "landing" and "beginning" are clearly not arguments, but rather part of a complex predicate. In fact, an aspectual calculus of the type proposed in Dowty (1979) and adopted by Van Valin (1990) would decompose a verb such as *geland* 'landed' into BECOME+CUL(mination), thereby making it particularly difficult to distinguish from *een landing gemaakt* 'make landing', with a virtually identical semantic representation. Yet, in (15a-b) the auxiliary *zijn* is selected, whereas in (16a-b) the auxiliary *hebben* is selected. It appears, then, that auxiliary selection here is sensitive not to telicity, or agentivity, but rather to the presence of a syntactic NP object, even devoid as it is of any actual argumenthood or semantic role that could serve to distinguish it from (15a-b). A pure semantic approach would be hard pressed to account for these facts without supplementing the semantic restriction on auxiliary selection with a syntactic insertion frame, barring *zijn* in the presence of an NP complement, regardless of its semantics. We note, however, that to the extent that a semantic account would have to be sensitive to syntactic transitivity anyway, to account for *ne*-cliticization in atelic transitives, the argument put forth in Everaert (op. cit.) may not be conclusive either. Rather, it appears, what is necessary is a syntactic test which is not attested in a subset of telic contexts, but rather, is clearly and demonstrably oblivious to (a)telicity.

Consider, in view of this, another argument for the syntactic projection of the unaccusative/unergative distinction, from the distribution of possessor datives in Hebrew. Borer and Grodzinsky (1986) argue that possessor datives in Hebrew exhibit, in essence, binding-like characteristics with respect to the determiner of the possessed DP.⁹ Assuming the possessor dative to be in a position c-commanding all (traditional) VP-internal material (and not the "external" argument), it is hardly surprising to find out that it can exhibit possession relations with any complement DP, either a direct object or a DP-complement of a selected preposition, as illustrated by (17). It can further exhibit possession relations with DPs within PP adjuncts, as (18) illustrate, or subjects of small clauses. In fact, the only systematically excluded possession relation is with an

⁹ See Landau (1997) for an account of the distribution of possessor datives in terms of possessor raising. Note that as raising environments and binding environments are almost identical, and both share the exclusion of external arguments and the inclusion of c-commanded adjuncts or complement PPs, Landau's account makes the same predictions, with respect to the matter at hand, as does a binding account. Landau further notes that experiencers do not allow possessor datives, a fact which he reduces to the high projection site of experiencers, a result likewise compatible with a binding approach.

E. Doron (p.c.) notes that the restriction against possessor datives with external arguments disappears in cases of inalienable possession expressed with possessive datives, giving rise to the contrast in (i)-(ii):

- i. *ha.šen mitnadnedet li*
the.tooth swings to.me
'my tooth is loose'
- ii. **ha.šec mitnadnedet li*
the.tree swings to.me
'my tree swings'

Inalienable possession examples are thus systematically avoided here and in all subsequent diagnostic uses of possessive datives. Given the purely diagnostic role of the possessive dative phenomena in this work, no attempt is made to account for the different behavior of inalienable possession and other forms of possessive datives.

"external" argument, as illustrated by (17a) and (18b) (indices in curly brackets notate possible possession relations):¹⁰

17. a. *ha₁.yeladim xatku le-rani_{*1,2} 'et ha₂.gader?*
 the.boys cut to-Rani acc the.fence
 '*Rani's boys (=Rani's sons) cut the fence'
 'the boys cut Rani's fence'
- b. *ha.yalda₁ nigna le-rani_{*1,2} ba-psanter₂*
 the.girl played to-Rani in-the.piano
 '*Rani's girl(=Rani's daughter) played the piano'
 'The girl played Rani's piano'
18. a. *ha₁.yeladim zarku le-rina_{*1,2,3,4} 'et ha₂.kadur le-tox ha₃.gina 'al-yad ha₄.mitbax*
 the.boys threw to-Rina acc the.ball into the.garden next-to the.kitchen
 '*Rina's sons threw the ball into the garden (while) next to the kitchen'
 'the boys threw Rina's ball into the garden, (while) next to the kitchen'
 'the boys threw the ball into Rina's garden, (while) next to the kitchen'
 'the boys threw the ball into the garden, (while) next to Rina's kitchen'
- b. *ha₁.xatulim yilelu le-Rina_{*1,2,3} mi-taxat la₃-xalon bi-zman ha₂.šena*
 the.cats whined to-Rina under to.the.window during the.nap
 '*Rina's cats whined under the window during naptime '
 'the cats whined under the window during Rina's nap'
 'the cats whined under Rina's window during naptime '

Unlike *ne*-cliticization, then, possessor datives, in transitive or intransitive domains, are not restricted to a subset of telic contexts. In (17a), the possessor dative occurs as part of a transitive accomplishment, exhibiting a possession relation with the direct object. However, in (17b), an atelic structure with a complement PP, a possessor dative is possible with respect to the object of P, *psanter* 'piano'. This, note, is an environment which in Italian and Dutch would require the auxiliaries *avere* or *hebben*, respectively, and which wouldn't allow *ne*-cliticization (for a post-verbal subject). Finally, in (18b), again an atelic structure, possession by a possessor dative is possible into an array of PP adjuncts. Here, again, Italian and Dutch would select unergative auxiliaries and *ne*-cliticization would be blocked (again, for post-verbal subjects).

Consider now the relationship between possessor datives and subjects of intransitive verbs. (18b) already illustrates that subjects of unergative intransitives (with activity/process interpretation) cannot be "possessed" by dative possessors. However, this is not the case with subjects of unaccusative intransitives (with telic interpretation), where the relationship is possible

¹⁰In (17a-b) a coincidental possession of 'boys' or 'girl' by 'Rani' is possible, resulting in the interpretation 'Rani's son' and 'Rani's daughter' respectively. However, this coreference between the external argument and the possessive dative cannot satisfy the condition on the occurrence of a possessor dative, as in such cases the fence or the piano as well must be possessed by 'Rani', resulting in the possibility of (17a-b) meaning 'Rani's sons cut his_i fence', 'Rani's daughter played his_i piano', but not 'Rani's sons cut the fence' or 'Rani's daughter played the piano'.

with the subject post- or pre-verbal (see Borer and Grodzinsky, 1986 for discussion of binding in the latter case):

19. a. *ha₂.mitriya napla le-Rani_{2}*
 the.umbrella fell to-Rani
 'Rani's umbrella fell'
- b. *napla le-Rani_{2} ha₂.mitriya*
 fell to-Rani the.umbrella
 'Rani's umbrella fell'
- c. *ha₂.mitriya napla le-Rani_{2,3,4} al ha₃.šbil le-yad ha₄.mitbax*
 the.umbrella fell to-Rani on the path next-to the.kitchen
 'Rani's umbrella fell on the path, next to the kitchen'
 'the umbrella fell on Rani's path, next to the kitchen?'
 'the umbrella fell on the path, next to Rani's kitchen'

As is evident from (17)-(19), a possessor dative can express a possession relation with an unaccusative subject, as well as with any DP in a complement position or within a PP adjunct. On the other hand, it cannot express a possession relation with an unergative or transitive subject. It is hard to see how this state of affairs can be reduced to an aspectual distinction, with or without syntactic transitivity taken into account, given the fact that possessor datives are clearly blind to aspectual distinctions in the domain of both transitives and intransitives. Thus (17b) and (18) clearly involve an activity, while (17a) and (18a) are telic, but the range of possible possessor-dative relationships is the same, without any effect on the resulting event interpretation. The configuration that allows possession by the possessor dative is thus purely structural, arguing for a distinct syntactic positioning of the unaccusative subject and the unergative subject. While the former must be internal to the c-command domain of the possessor dative, on a par with complements and PP adjuncts, the latter must be external to that c-command domain, on a par with subjects of transitive sentences. It is thus evident that at some level of representation the subject of (7a), involving an accomplishment, is projected lower than the subject of (7b), involving an activity, resulting in the licensing of a possessor dative in the former but not in the latter.¹¹

It therefore follows that the unaccusative/unergative distinction is hierarchically represented in the syntax, in that the former involves an argument occupying the same *syntactic* position as a direct object, while the latter involves an argument occupying the same *syntactic* position as a subject of a transitive. The assumption that all diagnostics of the unaccusative/unergative distinction can be reduced to semantic properties of predicates, or that they can be stated on structures in which the subjects of unaccusatives and unergatives occupy the same position, must then be rejected. Rather, we must consider the other logical parsimonious options – either deriving

¹¹ (7b), but not (7a) allows for a reflexive dative, note. As already noted in fn. 6, the reflexive dative (in contrast with the possessor dative) does interact with event structure, and is, effectively, compatible only with atelic predicates (whether stative or eventive). It could not, however, be equated with the English progressive (presumably, a case of outer aspect in the sense of Verkuyl, 1972, and subsequent literature), as I will show directly in Chapter 17, section 2.3. Most specifically, unlike the English progressive, which is by and large oblivious to its surroundings (unergative, unaccusative, some statives, passive), reflexive datives cannot co-occur with passives and unaccusatives.

the distinct syntax of the arguments from the semantically distinct event interpretations, or alternatively, deriving the semantically distinct event interpretations from the distinct syntax of the arguments.¹²

Levin and Rappaport Hovav (1992b), who address this issue within a fundamentally endo-skeletal approach, write, in comparing their own approach to a constructionist one:¹³

Verbs that show variable behavior of this kind are always associated with more than one meaning; each meaning turns out to be correlated with the predicted syntactic properties, including membership in the unaccusative or unergative class. The question, however, is whether the change in meaning displayed by a particular variable behavior verb is to be attributed to its appearance in a particular construction, as the constructional approach would claim, or to the existence of some lexical rule which gives rise to multiple semantic classifications of verbs, which then license the appearance of these verbs in more than one construction, as the lexical approach would have to claim... The constructional approach predicts that ... verbs are free to appear in a range of constructions (and hence meanings) constrained only by the compatibility of the "core" meaning of the verb with the semantics of the construction... The lexical approach, in contrast, does not make this prediction... [in turn there is a] need for lexical rules which specify multiple class membership. In addition, the multiple classification of verbs is manifested in a variety of constructions, suggesting that verbs are classified once and for all for class membership.

(Levin and Rappaport Hovav 1992b, pp. 12,13).

Levin and Rappaport Hovav, in a manner consistent with their theoretical approach, then proceed to suggest multiple (but related) entries for variable behavior verbs. Within an endo-skeletal approach, their type of solution is indeed the only available one. If the syntax of argument structure projects deterministically from specifications associated with lexical entries, different argument structure projections must reflect different lexical specifications, and hence, distinct, albeit related, entries. However, the desirability of postulating two distinct lexical entries for *variable behavior verbs*, with the sole lexical-semantic distinction involving telicity, is questionable, especially if we concur with Mittwoch (1991) that all 'accomplishment verbs' in English are in actuality ambiguous between an accomplishment reading and an activity reading.¹⁴

¹² In both Dowty (1991) and Krifka (1989, 1992, 1998), the semantic similarities between objects of telic transitives and subjects of telic intransitives are captured by appealing to the notion *theme*, presumably projected either as a direct object or as a subject of intransitives. The distribution of possessor dative in Hebrew is clearly a problem for these accounts, and to any account that seeks to de-link the properties of the direct argument in telic constructions from a fixed (internal) syntactic position.

To the extent that it can be demonstrated that subjects of telic unaccusatives and objects of telic transitives *are* in the same position, on the other hand, this is fully compatible with the claim which we will otherwise advance, according to which the relevant property of the so-called quantized (or quantity) argument is not its thematic role, but its syntactic position.

¹³ In subsequent work, Rappaport Hovav and Levin refer to the 'lexical' approach as the projectionist approach (1998).

¹⁴ For these reasons and some others, Levin and Rappaport Hovav (1995) abandon the claim that *variable behavior verbs* represent aspectual distinctions, and argue instead that *variable behavior verbs* in the

Quite plainly, if the value \pm telic is allowed to be associated with lexical entries as such, then whenever a verb, intransitive or transitive, may occur in both a telic and an atelic context, it would have to have two lexical entries. Not only would such an account require numerous intransitive and transitive verbs to have a double entry, it would also require two lexical entries for well-known pairs such as those in (20)-(21):

- 20. a. I sprayed the wall with the paint (in two hours)
- b. I sprayed the paint on the wall(in two hours)
- 21. a. I ate the cake (in ten minutes)
- b. I ate at the cake (*in ten minutes)

As is well known, in (20a) an accomplishment interpretation is associated with *spray the wall* (and *spray with the paint* remains an atelic process), whereas the accomplishment interpretation is associated with *spray the paint* in (19b) (and *spray on the wall* remains an atelic process). (21a) is largely interpreted as an accomplishment, while (21b) may only be interpreted as an activity. If two distinct lexical entries are associated with Hebrew 'wilt', one telic (and unaccusative) and the other atelic (and unergative), then two distinct entries must be likewise associated with *spray*, one being telic with respect to a theme, but atelic with respect to a location, and the other telic with respect to a location and atelic with respect to a theme (with an additional entry, note, to mark the fact that (20a-b) need not be telic at all). Likewise, two entries for *eat*, one associated with an atelic process (and selecting an optional PP) and one with an accomplishment (and selecting an obligatory direct object).

An even trickier complication is presented by the contrast between (22a) and (22b):

- 22. a. Kim built the houses (in three months)
- b. Kim built houses(*in three months)

As is well known, (22a), with a definite object, may have a single event, accomplishment reading. (22b), with a bare-plural object, can only be interpreted as an activity, under a single event reading (alternatively, it can be interpreted iteratively, a reading we largely set aside for the remainder of this work). If (a)telicity distinctions trigger distinct lexicalizations, then it follows that *build* would have to have two distinct lexical entries: an atelic process entry which only allows determinerless NPs as internal direct arguments, and an accomplishment reading, which bars determinerless NPs as internal direct arguments. To quote Dowty (1991) on the undesirability of

intended sense are a class of intransitives derived through (lexical) detransitivization (following suggestions in Chierchia, 1989, and Reinhart, 1991). Depending on the presence or lack thereof of an external causer interpretation, an unergative or an unaccusative entry results. This latter solution, in turn, leaves open the question of whether or not Dowty's Correlations are correct or not. If indeed they are, then within the Levin and Rappaport Hovav system, the correlation between telicity and the presence of an external cause must be otherwise explained. I return below, in section 2 as well as in Chapters 12-13 and 15, to additional detailed justification of the event-structure, *aktionsart* approach to argument structure, assuming, for the time being, the correctness of Dowty's Correlations. For a detailed criticism of the 'external causer' account see Reinhart (2000), who assumes that all unaccusatives, not just those which show variable behavior, are derived from transitives through existential binding of the external argument, and that all have an 'unergative' correlate which is in actuality a lexical reflexive involving binding of the internal argument. For an additional brief comment, see fn. 25

moves of this nature, specifically for the unaccusative/unergative distinction as proposed by Levin and Rappaport Hovav (1992a,b):

"Hypothesizing that a large semantically coherent group of verbs have duplicate categorization in unaccusative and unergative syntactic classes (and with corresponding different semantics in the two frames) would be missing the point, I argue....I would argue that the correct analysis is...semantic... instead of or in addition to the syntactic type."
(Dowty, 1991, p. 608).

We note, following Dowty (op. cit.), that postulating two distinct entries, mediated or not through lexical rules, in order to capture the meaning differences in (20)-(22), appears equally undesirable.

The debate here, focusing as it does on intransitive verbs, is concerning two issues, which are at least partially independent. One is whether the sole argument of intransitive verbs may project in different positions, correlating with interpretational differences. The second is whether argument structure projects deterministically from lexical entries or not. Levin and Rappaport Hovav (1992a,b, as well as 1995) (and see also Reinhart, 1991, 1996, 2000) answer both questions in the positive: the projection of arguments is determined by lexical information, and the sole argument of intransitives does project in different positions depending on lexically specified or lexically derived factors (such as role features and lexical mapping operations, as in Reinhart's system, aspectual value, as in Levin and Rappaport Hovav, 1992a,b, or a variety of linking rules connecting roles with positions, as in Levin and Rappaport Hovav, 1995). The Van Valin/Dowty approach, on the other hand, gives a negative answer to both. While syntactic structures associated with different *aktionsart* values may vary (e.g., [_{VP} run PP_{dir}] is telic while [_{VP} run] is atelic), projection of the argument of intransitives does not vary – it always projects as (the external) subject. Furthermore, argument structure does not project deterministically from lexical entries depending on the lexico-semantic properties of a specific entry or the role assignment associated with it. The double positive and double negative responses, however, are not the only logical possibilities. If one subscribes to the view that argument structure projects deterministically from lexical entries, it indeed must follow that different syntactic configurations which are associated with a single verb must reflect the existence of multiple (possibly related) lexical entries. However, one could subscribe to the view that the sole argument of intransitives projects in different positions as correlating with interpretational factors, while still maintaining that arguments do not project deterministically from lexical entries. From the perspective of a constructionist or XS-approach, if distinct syntactic structures are indeed associated with different *aktionsart* values, and if *aktionsart* values are computed on the basis of the syntactic structure rather than the lexical entries of the verbs involved, there is no reason in principle to exclude the possibility that these different syntactic structures include not only the presence of a directional PP, but also a distinct syntactic position for the sole argument of intransitives.

We have seen that there are rather compelling empirical reasons to assume that the syntactic positions of unaccusative and unergative arguments are distinct. We must then reject this aspect of the Van Valin/Dowty approach. If we further assume that these syntactic distinctions correlate with semantic ones, we are left with two logical choices:

23. A. If argument structure projects from the lexicon, the distinct syntax of unaccusatives and unergatives means that there are two entries for variable behavior verbs, together with lexical mapping rules which modify argument structure configurations
- B. If we wish to reject the systematic existence of two distinct entries for variable behavior verbs, then it follows that at least the syntax of variable behavior verbs, and by extension, the syntax of argument structure, cannot project from the lexicon.

We saw that the first option is the one pursued by Levin and Rappaport Hovav, and by Reinhart (1996, 2000). In this work, however, I will take seriously the objections raised by Dowty (1991), and assume that (23B) is the correct option. *Variable behavior verbs* in all their manifestations are a single item. The structure within which they are embedded and the interpretation of that structure are not derived from properties of the lexicon, but rather are in line with general properties of functional structure and its mapping onto the interpretational component. Aspectuality, in the sense of Dowty's Correlations, is not a property of verbs, or any argument takers, but rather of the interpretation associated with specific, universal, syntactic structures. In turn, the particular interpretation of arguments as, say, "agentive" or "non-agentive" will become an entailment from the *aktionsart* of the entire event. Very schematically, because an event such as a window's breaking is telic, the argument in *the window broke* is non-"agentive", and likewise, because an event such as a *laughing* is atelic, the argument in *Kim laughed* is "agentive". From this perspective, all direct arguments bear a relationship with the event, rather than the verb, and the verb itself is a modifier of that event, rather than a determinant of its interpretation.¹⁵

The reader may object now that another possibility must be considered, according to which the syntax of arguments does project from the lexicon, but, in accordance with Baker, 1985 and 1988, and adopting the assumption that there are no grammatical function changing rules, variable behavior verbs project a specific syntax (say that of unaccusatives), which in turn is syntactically modified to give rise to the syntax of the alternative frame. We return to this possibility and to a review of other current approaches to argument structure projection in section 3, where we argue that the behavior of intransitives is incompatible with any version of UTAH. Before we do so,

¹⁵ Although clearly some aspects of the *event*, as a whole, do not figure in the determination of argument interpretation or placement. Thus, for instance, a negated accomplishment such as *Kim didn't build a house (in two months)* still has the syntax of an accomplishment, and an 'agentive' subject of such a negated accomplishment remains interpreted as an 'agent', although, clearly, nothing has been accomplished, and the 'agent' has not exercised its 'agenthood' in any relevant sense (and compare with the ungrammaticality of **Kim didn't build houses in two months*). A clear illustration of this fact is the oddity associated with inanimate 'agents' in cases such as *the wind tried to break the window*, which does not disappear under negation, with *the wind didn't try to break the window* equally odd. Similar generalizations hold for the English progressive, which negates culmination when associated with telic predicates, but which does not appear to change the restrictions on argument structure associated with these predicates. And most striking of all, note that *for x-time*, usually taken to be a test for atelicity, when adjoined to an atelic predicate, turns it into a telic, bound predicate (e.g., it is *quantized* in the sense of Krifka, 1989, 1992). This distinction, in essence, is in line with the distinction postulated by Verkuyl (1972) between inner aspect and outer aspect. In what follows I will assume that both negation and the English progressive are instantiations of outer aspect, as are time duration adverbs such as *for-x-time*, all functioning as operators on existing event structure configurations, rather than as determinants of them. For some additional brief comments on the progressive as outer aspect, see Chapter 17, section 2.4.

however, we turn to another important issue – a *prima facie* justification of the use of *aktionsart* as the building block for the syntax of arguments.

2. But why *Aktionsart*?

Van Valin's account, as well as Dowty's correlations, range over the domain of *aktionsart*, claiming it to be the relevant domain for the characterization of event structure and argument structure. A particularly strong claim in this respect has been made by Tenny (1987, 1992, and subsequent work), who explicitly proposes to replace the existing inventory of thematic roles, based on characterizing the mode of interaction of an argument with an event, with aspectual roles, linked to the way in which particular arguments interact with the determination of *aktionsart*. However, the relevance of *aktionsart* in determining argument structure in general, and the unaccusative/unergative distinction in particular, must be independently justified.

The justification, note, must address two issues. First, we must argue that *aktionsart* is syntactically represented, and is not just an interpretational effect. Second, we must show that to the extent that *aktionsart* is syntactically represented, its syntactic structure is implicated in the interpretation of arguments.

That *aktionsart* and argument structure are indeed related has been often pointed out, and there is little doubt that characteristics of the object contribute to determining event type (cf. Verkuyl, 1972 and subsequent work, Dowty, 1979, 1991, Tenny, 1987, 1994, and Krifka, 1992, 1998, among many others). Rosen (1999), in reviewing previous results on the interaction between the direct object and the overall event type, cites the following:

24. A. Addition of direct object gives rise to telicity:
 - a. Bill ran for 5 minutes/*in five minutes
 - b. Bill ran the mile *for five minutes/in five minutes¹⁶
- B. Cognate Objects give rise to telicity:
 - a. Terry sang for an hour/*in an hour
 - b. Terry sang a ballad ?for an hour/in an hour
- C. X's *way* Constructions give rise to telicity:
 - a. Marcia sang for an hour/*in an hour
 - b. Marcia sang her way to the Met in 10 years/*for ten years
- D. Fake Reflexives give rise to telicity:
 - a. Terry swam for an hour/*in an hour
 - b. Terry swam herself to sleep in an hour/*for an hour
- E. The Conative Alternation (cf. (21)) gives rise to atelicity:
 - a. I ate the cake for ten minutes/in ten minutes)
 - b. I ate at the cake for ten minutes/*in ten minutes

¹⁶ Judgments from Rosen, (1999). Native speakers report that (24b) is possible with an atelic construal in certain contexts, e.g., if 'the mile' is understood as a particular stretch, rather than defining the length of the running.

F. Antipassive gives rise to atelicity:

- a. *Junna-p Anna kunip-p-a-a*
Junna.erg₂ Anna.abs₁ kiss.ind.(trans).3sg₂/3sg₁
'Junna kissed Anna'
- b. *Junna (Anna-mik) kunis-si-vu-q*
Junna.abs₂ (Anna.intrans) kiss.APASS.(intrans).3sgA₂
'Junna kisses/is kissing Anna'

(Inuit, from Bittner and Hale, 1996)

G. The addition of an (ECM) Object, in resultative constructions, triggers telicity:

- a. Terry ran for an hour/*in an hour
b. Terry ran us ragged in an hour/*for an hour

H. Verb Particles with 'objects' trigger telicity:

- a. Terry thought for an hour/*in an hour
b. Terry thought an answer up in an hour/*for an hour

Clearly, as has been often observed, the examples in (24A-H) demonstrate that whether or not an object is present largely affects the resulting *aktionsart*. As Rosen further points out, internal properties of the object DP are implicated as well. Thus mass nouns and bare plurals block a telic interpretation (as already illustrated by (22)), and partitive vs. accusative case marking on the object in Finnish reflects the overall (a)telicity of the resulting predicate (see Chapter 13 for extensive discussion):

25. a. *Anne rakensi taloa*
Anne built house-PRT
'Anne was building a/the house'
- b. *Anne rakensi talon*
Anne built house-ACC
'Anne built a/the house'

There is no doubt, then, that *aktionsart* is syntactically represented, and shows sensitivity to syntactic structure. There is further no doubt that there is massive interaction between *aktionsart*, and more specifically telicity, and the existence and the structure of the direct 'internal' argument. We note in this context that the relevant relation cannot be captured in terms of thematic relations between the verb and its arguments, as telicity is induced in at least (24D) and (24G) (and possibly in other cases as well) by a direct argument cannot be viewed as a thematic object of the verb.

The question, then, is not whether *aktionsart* is syntactically represented, and whether or not it shows sensitivity to the placement of arguments. Rather, we must ask whether the relevant semantic roles associated with arguments are indeed exclusively those that are implicated in event structure, or, alternatively, whether the *aktionsart* system exists alongside a more traditional thematic system. This question, note, is actually independent of the question posed in section 1, about the source of event structure and *aktionsart* roles. It is thus possible for roles to be event-oriented, but nevertheless still projected from lexical entries which are in turn provided with *aktionsart* value, and indeed, systems which project event arguments partially or wholly from lexical entries have been proposed (e.g., by Tenny 1987, 1994, van Hout 1992, 1996, van Voorst 1993, and others). It has been pointed out frequently, however, that it is precisely within the domain of *aktionsart* and event structure that one finds the greatest variability between verbal

insertion frames (in the sense of *variable behavior* already discussed). It is thus not particularly surprising that it is precisely within approaches to argument structure that subscribe to event roles, rather than thematic roles, that syntactic approaches to argument projection are most influential.

In turn, as syntactic structure for *aktionsart*, and some statement of its interaction with at least some arguments, is clearly necessary, the null hypothesis would be that this is the only structure that is relevant for the projection and the interpretation of arguments. Suppose, then, that we adopt the essence of the proposal put forth by Tenny (1987, 1994), according to which the syntactically relevant argumental roles are those that are aspectually relevant. We will, however, depart from Tenny's system in assuming that these argumental roles do not emerge as a result of mapping from lexical entries to specific syntactic positions with specific properties, but rather, that they are 'created', so to speak, in the relevant positions. From this perspective, note, the role that would be assigned to *the shoes* in *Jenny polished (up) her shoes (in five minutes)* is one and the same as the role that would be assigned to *shoes* in *Jenny ran her shoes rugged (in five minutes)*, both contributing to the emergence of telicity in the same sense and receiving their interpretation in the same syntactic position. We note as an aside that to the extent that this execution is valid, it is entirely incompatible with Exceptional Case Marking accounts for constructions such as those in (24D) and (24G) (i.e., accounts that postulate exceptional government across a phrasal boundary for such structures), but is fully compatible with any account which posits a uniform position for all accusative-marked DPs.¹⁷ In the remainder of Book II, I will develop a system which can account for role assignment to DPs within such an aspectual structure. I will argue that only direct arguments interact with event structure. Although event structure can be syntactically affected by constituents other than direct arguments, these constituents will not be DPs. In turn, the privileged relationship of direct arguments with event structure will follow directly from their positioning as specifiers of functional nodes that are dedicated to the computation of event structure. Indirect arguments, in turn, are interpreted through the mediation of prepositions, and are aspectually inert.¹⁸ Before I turn to the development of such a system, however, a number of possible objections must be contended with.¹⁹

¹⁷ In turn, to the extent that ECM subjects also participate in an additional event, if there is one, which is embedded under the relevant telic event, such a relationship could be encoded via raising, control, or any of the other usual methods. For some discussion of resultative constructions, see Chapter 17, section 1.2.

¹⁸ We note as an aside that insofar as indirect arguments are not interpreted through the event structure, it is at least possible, in principle, that some (functional) structure which is not part of the event computation system is responsible for their interpretation, beyond the specific proposals made in this work. We leave this matter aside, however, noting that if indeed this is the case, it would suggest the existence of two distinct syntactic representations, utilizing distinct primitives and category types, and generating two distinct outputs which then need to be integrated, a possibility which is quite intriguing and quite possibly on the right track.

¹⁹ The brief discussion in the text is by no means an attempt to review all syntactic approaches to the projection of arguments, or to aspectual distinctions. Van Hout (1992) puts forth independently a 'syntactic' account rather akin to that presented in Borer (1994) and motivated largely by similar considerations. Aspects of her work are addressed in subsequent chapters. Travis (1994, 1997, 2000), McClure (1995), Ramchand (1997), Davis and Demirdash (1995, 2000), Schmitt (1996), and Ritter and Rosen (1998, 2000), who all assume a syntactic approach to *aktionsart*, nevertheless put forth mixed systems, where traditional roles (thematic or others) assigned lexically co-exist alongside aspectual roles, at times partially listed and

In objecting to the linkage of argument roles and event structure, and in reference specifically to Dowty's Correlations, Reinhart (1991, 1996, 2000), challenges the claim that unaccusative verbs are always telic. Specifically, Reinhart (1996) points to the meaning contrast between (26)-(27), on the one hand, and (28), on the other, citing a test from Kamp (1979) and Partee (1984). The test appealed to involves the interpretation of coordinated verbs. Two telic verbs, when coordinated, give rise to a sequential interpretation. For this reason, the truth conditions of (26a) and (26b) are quite distinct, as are the truth conditions of (27a) and (27b). On the other hand, the coordination of atelic verbs does allow a simultaneous interpretation, hence the synonymous readings of (28a) and (28b) (although a sequential reading is also possible):

- 26. a. The vase broke and fell
b. The vase fell and broke
- 27. a. The apple dropped and reddened
b. The apple reddened and dropped
- 28. a. Kim ran and sang
b. Kim sang and ran

Now, Reinhart suggests, consider the unaccusative verbs *twist* and *spin*. By traditional tests, they are indeed unaccusative: they are related to a transitive entry with a possible inanimate causer, they (could) express a change of state, they allow resultative constructions, etc. If indeed unaccusative verbs are telic, we expect the truth conditions for (29a) and (29b) to differ. However, this is not the case. *Spin* and *twist* certainly allow a simultaneous reading, and as such (29a) and (29b) can be interpreted as truth conditionally equivalent:

- 29. a. The yarn twisted and spanned
b. The yarn spanned and twisted (Reinhart, 1996)

It follows, Reinhart concludes, that unaccusativity and telicity simply do not go hand in hand, and hence that Dowty's correlations are wrong.

Some aspects of Reinhart's argument are independently problematic, as it turns out. Others, we will show, are orthogonal to the claims made here. Note first that the coordinated events in (26) and (27) are not just interpreted as sequential, but as having a causal relation, the first having caused the second. The truth conditions of (26a), (27a) and (26b), (27b) do not just differ in terms of which event took place first, but also in terms of which event caused the other. Suppose we consider, then, two verbs that do not easily permit such a causal connection. Specifically, suppose

checked, so to speak, against particular syntactic configurations, and at times assigned by the structure. Finally, we acknowledge here the seminal work of Hale and Keyser (1993). Although their system is fundamentally lexical in assuming that the relevant architecture characterizes argument structure internal to specific entries, they nevertheless postulate principles of argument interpretation which are architectural, and not head-based, and are independent of any properties of the verb itself which must be preserved throughout all of its instantiations, as UTAH requires. In that it derives the interpretation of arguments from structure, and not the other way around, their work continues to be extremely influential within the domain of syntactic approaches to event structure and argument structure. For work that directly continues the Hale and Keyser tradition, see Erteschik-Shir and Rapoport (1995, 2001). The reader is referred to Rosen (1999) for an excellent review of syntactic approaches to events.

we take the verb *redden*, classified by Reinhart as telic due to the contrast in (27a-b), and coordinate it with a semantically equivalent verb such as *yellow*. In an utterance such as (30), neither *reddening* nor *yellowing* caused the other, and the simultaneous *reddening* and *yellowing* of a ripening fruit (at its opposing extremities, say) is certainly plausible. The contrast in (26a-b), and (27a-b), is not replicated with (30a-b). Although a sequential reading is available, so is a simultaneous one, and the truth conditions of (30a) and (30b) could be identical:

30. a. The apple yellowed and reddened
 b. The apple reddened and yellowed

One could conclude, based on the truth conditional equivalence of (30a-b), that the telicity test used by Reinhart is simply not a valid one. However, considered from a slightly different perspective, it turns out that the coordination test for telicity *is* a valid one. While (30a-b) can be truth conditionally equivalent, it is also the case that on this simultaneous reading, *yellow* and *redden* are interpreted as activities, and not as accomplishments (or achievements). Specifically, note that a simultaneous reading of (30a-b) means that the apple underwent some yellowing and reddening, but not that the apple simultaneously became both yellow and red. Further, when an activity reading is truly unavailable (e.g., in some achievements), a sequential reading is forced, regardless of causality, as (31) illustrates:

31. a. The guest understood the solution and left
 b. The guest left and understood the solution

On the other hand, if the tests are valid, then it appears that neither *yellow* nor *redden* are unambiguously telic or atelic, but rather, they are *variable behavior verbs* in the sense discussed already. This, of course, is true of *twist* and *spin* as well; both have a telic and a non-telic interpretation. What now of verbs such as *drop* and *burn*, which seem to imply an end point rather strongly? Well, it turns out that if a sufficiently plausible context is conjured, *burn* and *drop*, and even *fall* and *break-apart*, can be coordinated with a simultaneous interpretation and atelic process reading resulting:

32. a. We watched [the asteroid drop/fall (through the atmosphere) and burn/break apart for several minutes]
 b. We watched [the asteroid burn/break apart and drop/fall (through the atmosphere) for several minutes]
 (cf. *We watched [the guest understand the problem and leave (*for several minutes)]* vs. *we watched [the guest leave and understand the problem (*for several minutes)]* with a sequential interpretation only)

If we suppose the asteroid in question to have been ejected out of the atmosphere at some point subsequent to the event in (32) (some mass having been lost, naturally), thereby continuing its free fall through space indefinitely, then the utterances in (32) are well-formed, without a culmination, insofar as the asteroid neither fell apart completely, nor did it burn up completely. What can we conclude from this? Simultaneity does appear to correlate with an atelic process interpretation (although lack of simultaneity clearly does not necessarily correlate with a telic reading), and telicity does appear to correlate with a sequential reading. However, the classifications that emerge here are for most verbs rather vague. It seems that too many verbs typically considered telic can be construed as simultaneous with another telic verb, with a resulting atelic process interpretation,

confirming Mittwoch's (1991) claim that all accomplishment verbs in English can have an atelic process interpretation.

But this state of affairs is hardly a problem for the system proposed here if telicity, or lack thereof, is not a property of verbs, but rather a property of syntactic structures. The source of atelicity in (30a-b) is not the verbs *yellow* and *red*, but rather the syntactic structure within which they are embedded. Specifically, the claim put forth here is that the sole direct argument of (intransitive) clauses with an activity interpretation will display behaviors associated with external arguments, while the sole direct argument of (intransitive) clauses with an accomplishment/achievement interpretation will display syntactic behaviors associated with internal arguments. It therefore follows that when a verb such as (intransitive) *red* is coordinated with another verb and a simultaneous reading emerges, the syntactic behaviors will be those of unergatives. On the other hand, when *red* is coordinated with another verb and a sequential reading emerges, the syntactic behaviors could be those of unaccusatives.²⁰

In turn, we predict that if we force a predicate to be telic, a sequential reading will emerge, but not so if we force it to be atelic. Using the distribution of datives in Hebrew, we can see that this prediction is borne out. Specifically, recall that possessor datives require the possessed to be in the (traditional) VP, and that reflexive datives require an external argument. Suppose, now, that we coordinate two *variable behavior verbs*, in our intended sense, in the context of a possessor dative. The only grammatical reading requires an internal argument, forcing an unaccusative structure, and hence by assumption telicity as well. We therefore predict that a simultaneous reading would disappear in the context of possessor datives. The converse should hold in the presence of a reflexive dative, where the obligatoriness of an external argument would force an atelic process reading. Here, simultaneity is expected to be possible. The facts in (33)-(35) confirm these predictions.

33. *ha.mete'or nisrap ve-napal /napal ve-nisrap* (ambiguous)
 the.meteor burned and fell/fell and burned
 'the meteor burned and fell/fell and burned'

34. a. *ha.mete'or napal le-ran ve-nisrap*
 the.meteor fell to-Ran and-burned
 b. *ha.mete'or napal ve-nisrap le-ran*
 the.meteor fell and-burned to-Ran
 'Ran's meteor fell and (then) burned'

(e.g., in a physics class, with students writing programs simulating meteoric trajectories)

²⁰ There is no argument here against endo-skeletal approaches to this issue, and more specifically, there is no argument here against the approach put forth in Levin and Rappaport Hovav (1992a,b) to which Reinhart (1996) specifically objects. As the verbs used by Reinhart are all variable behavior verbs, an endo-skeletal account postulating two entries, one telic/unaccusative and the other atelic/unergative, could handle the facts just as well.

35. a. *ha.mete'or_i nisrap ve-napal lo_i*
 the meteor burned and-fell to.it
 b. *ha.mete'or_i napal lo_i ve-nisrap*
 the meteor burned to.it and-fell
 'The fell and burned' (simultaneity is possible but not forced)

Reinhart's facts, then, prove wrong the claim that verbs such as *spin*, or for that matter, *burn* and *redde*n, are telic, but are entirely neutral concerning the claim that *telic events* are associated with unaccusative syntax, while *atelic events* are associated with unergative syntax. The facts in (33)-(35), while still compatible with an endo-skeletal approach, actually support Dowty's Correlations, and any account that correlates (a)telicity with the projection of arguments.²¹

Despite the massive polysemy within the domain of intransitive verbs, as is well known, not all intransitive verbs are possible as both unaccusatives and unergatives. Two notable exceptions are *agentive verbs of manner of motion* (in the sense of Levin, 1993) when they occur without a terminal complement, and *achievement verbs*, in the sense of Vendler (1967), indicating, it is sometimes proposed, an instantaneous culminating change. The failure of such polysemy exactly in these cases, I will argue, is not accidental. In the former, it follows from the fact that *agentive manner of motion verbs* are *originator* modifiers, in a sense to be made more precise in Chapter 17, section 3. In the latter, I will suggest, the verbs in question are *idioms*, in the technical sense discussed in section 4 of Chapter 10, i.e. incorporating a functional range assigner which forces the projection of a particular structure (i.e., the equivalent, within the verbal domain, of *trousers*). I return to the discussion of achievements and their interpretation in Chapter 19, sections 2-3.

3. UTAH?

It is worthwhile starting this section by delineating the ways in which the approach to be put forth here is distinct from, and akin to, some of the dominant approaches to argument structure, taking as our starting point the Universal Theta-Assignment Hypothesis, put forth by Baker (1988).

Quite contrary to much work that is informed by endo-skeletal considerations, the system put forth by Baker bars modifications of lexical entries so as to give rise to a different argument structure configuration, and thus a particular lexical entry (an 'item') must always project in the

²¹ To the extent that verbs such as *nisrap* 'burn' or *napal* 'fall' behave as unaccusatives in (34), but as unergatives in (35), Levin and Rappaport Hovav (1995) would have to argue that in the first occurrence, an external cause is implied, but not so in the second occurrence. No such interpretational differences are in evidence, however, casting serious doubt on their classification. For Reinhart (2000), on the other hand, the 'unergative' variants of *nisrap* 'burn' and *napal* 'fall' would involve a reflexive interpretation, i.e., the meteor burned itself and caused itself to fall. We note that at least under the most common interpretation of the term reflexive, as applied to intransitives (e.g., in *Mary washed*, or *Kim rolled down the hill*), no reflexive interpretation seems to be implicated here. We believe that both distinctions involve over-determination, representations too fine-grained, usurping roles that in actuality belong with world knowledge. The relevant contrast, I will suggest, is that which holds between notions such as *originator* (of a non-stative event) and *subject-of-quantity* on the one hand, and other possibly finer distinctions being made in the conceptual component and which distinguished, e.g., *eat* from *drink* but which have no grammatical correlates (and see Chapter 10, section 1 for discussion)

same way, giving rise to a unique representation. In turn, all appearance of argument structure modification is mediated through the existence of syntactic structures (often headed by syntactically projected morphology), or through incorporation. Clearly, to the extent that the system presented here derives argument structure variations associated with the same verbal listeme syntactically, rather than lexically, it is very much a continuation of the research agenda put forth by Baker (op. cit.). We further share with the UTAH agenda the assumption that particular syntactic positions are inherently linked with particular argumental interpretations.

On the other hand, however, UTAH is a fundamentally endo-skeletal approach, and argument structure is very much viewed as a property of lexical items, which in turn determines D-structure or some other fragment of the representation. Within that system, then, there are lexical entries with a given configuration of semantic roles, together with fixed, possibly universal linking conventions. Once projected, the ‘fixed’ structure may be embedded within an architecture that would add, appear to eliminate, or appear to modify the assignment site of a role. Crucially, role addition is the result of adding an argument taker (with no change to the argument structure of the item itself), and role elimination is only apparent, emerging actually from incorporation, role-assignment to an affix, or existential binding of an argument, etc. UTAH is fundamentally committed to viewing the constant relations between the structure and the interpretation of arguments as mediated through the head selecting those arguments. Hence, relations between items must stay fixed, which means that if a verb stem assigns a theme role in a particular position, the verb stem-theme relation will be realized in that same position throughout the derivation.²² The system proposed here, on the other hand, does not require mediation by a lexical item to fix the interpretation of a particular role (nor does it use notions such as *theme* and *patient*). For this reason, we may keep fixed the relationship between structure and argumental interpretation, but allow different instantiations of a particular stem to be associated with different argument structure interpretations. As an illustration, for proponents of UTAH, all instantiations of *drop* must have the same syntactico-thematic configuration. Consider, in this view, some of the possible instantiations of *drop* in (36):

36. *drop.trans*; *drop.unacc*; *drop.unerg*; [_A*dropped*]; [_A*droppable*]; [_N *drop*]

The verb stem *drop* must be assumed, within a UTAH approach, to be associated with the same thematic and syntactic configuration in all these instantiations. Further, as thematic roles cannot be eliminated, by hypothesis, it follows that all verbs which alternate between transitive and intransitive variants must start as intransitive, and have the external argument added through a

²² A full review of the UTAH system is clearly outside the scope of this work. It might be worth pointing out, however, that UTAH as formulated in Baker, 1988 is inherently vague, in providing no proper definition for the notion ‘item’. Most crucially, from analyses presented in the body of the work, it appears that by ‘item’ Baker means stem, i.e., *drink* in [_A*drinkable*] and in [_V*drink*] are the same item. It could be argued, however, that ‘items’ are words, in which case [_A*drinkable*] and [_V*drink*] are distinct items, and one does not expect UTAH to apply to them. The empirical predictions here, note, are vastly different, and specifically, the preservation of the insight of UTAH, under the latter instantiation, would require one to argue that *drinkable* is distinct from *drink*, but not so, e.g., *make-drink*, in synthetic languages which realize this form as a single morpho-phonological word. See Borer (1998b) for a fuller review. See also Baker (2001) for some follow up discussion.

separate, abstract, CAUSE-type head, which may or may not receive a morpho-phonological realization.²³ In turn, because *drop.intans* is (typically assumed to be) an unaccusative verb, its argument (presumably a *theme*) projects internally, and must do so for all instantiations of *drop*. Yet, as is well known, adjectival passives are unergative, syntactically, rather than unaccusative, rendering the derivation of [_A*dropped*] a serious problem for UTAH (as is often in fact conceded by advocates of that approach, see Baker, 2001 for some discussion). Similar considerations apply to *droppable*, which has unergative properties, rather than unaccusative, as would be expected under a UTAH-type approach. No less problematic is the fact that both *dropped* and *droppable* are derived from transitive *drop*, but none shows any evidence for the sort of implicit external argument present in verbal passives, presenting yet another problem for UTAH. Finally, the nominal *drop* does not allow any of the arguments of the verb stem, thereby raising not only the problem of a missing external argument, but also a missing internal argument.

The paradigm of variable behavior verbs, in the technical sense used here, presents a particularly tricky problem. Within the UTAH approach, strict linking regulations dictate the relations between particular syntactic positions and thematic interpretations. Specifically, to the extent that unaccusatives have an internal argument, that internal argument is interpreted as a theme, and to the extent that unergatives have an external argument, that external argument cannot be interpreted as a theme, but rather, must be interpreted as an agent or as a causer²⁴. Assuming that variable behavior verbs project from one specific entry, and that syntactic operations bring about their 'second instantiation', we note that there are no syntactic mapping operations which could possibly bring about the change in the role assigned to the single argument.²⁵

Within the system to be presented here, these problems do not arise, as the projection of arguments is entirely independent of any lexical information. The encyclopedic information associated with the listeme *drop* does not include any syntactic information whatsoever about argument structure, nor is the merger of *drop* linked in any sense with a fixed set of roles. Rather, *drop* could be, in principle, embedded under any of the schematic syntactic structures in (37),

²³ Although arguments may appear to be eliminated, e.g., by incorporation or assignment to an affix, syntactic considerations would require either a trace (for incorporation) or placement of an affix in the position otherwise associated with the argument. Hence true elimination of arguments is never possible and transitive/intransitive alternations must have the intransitive form as their source.

²⁴ Or possibly as an instrument, goal, or experiencer, but this is orthogonal to our discussion.

²⁵ Note that a syntactic, rather than lexical, realization of Reinhart's (2000) system would encounter serious problems. The external role cannot be eliminated, in principle, but only assigned to an affix. Assignment to an affix, for unaccusatives, would predict properties akin to those of implicit arguments in passives, contra to fact. As for reflexivization, the prediction would be that syntactic reflexivization involving absorption of the internal argument would leave a trace in the object position, but there is no evidence for the existence of such a trace in unergatives. If, on the other hand, reflexivization involves absorption of the external argument (cf. Marantz, 1984, and Kayne, 1993, among others), we predict unergatives to pattern with unaccusatives, projecting an internal rather than an external argument, again contrary to the facts. For a recent discussion of this and other related issues, see Reinhart and Siloni (to appear) and Siloni (2001).

where it is the distinct syntax of the functional structure associated with the arguments which determines their interpretation, rather than any information associated with *drop*:

37. a. [FP1 [SUBJECT-OF-CHANGE] <e>_{F1} [VP [_v *drop*]]]
 b. [FP2 [SUBJECT-OF-PROCESS] <e>_{F2} [VP [_v *drop*]]]
 c. [FP2 [SUBJECT-OF-PROCESS] <e>_{F2} [FP1 [SUBJECT-OF-CHANGE] <e>_{F1} [VP [_v *drop*]]]]
 d. [DP <e>_d [NP [_N *drop*]]]]
38. [FP3 [SUBJECT-OF-STATE] <e>_{F3} [AP [_A *drop(-aff)*]]]

The syntax of roles such as subject-of-change, subject-of-process, and subject-of-state, assuming these roles, subject to further elaboration, to be roughly the correct approximation of instantiated event roles, is distinct, although each of these structures is universally fixed as associated with a given argumental interpretation. If the listeme *drop* is embedded within the structure in (37a), it will be "unaccusative". If it is embedded within the structure in (37b), it will be "unergative". If embedded within the structure in (37c) it will be "transitive", and if embedded within the structure in (37d), *drop* will project an N, with no arguments. Finally, the structure in (38), a combination of functional and morphological structure, will yield an adjective.^{26,27}

In turn, note, argument structure modification, if assumed to be accomplished through the type of structural schemata in (37)-(38), no longer must be mediated through morphology, which within UTAH system is the basis of adding arguments (e.g., causative morphology), absorbing or existentially binding arguments (e.g., passive morphology), etc. We note that a category-neutral, morphologically unmarked stem can, in principle, be embedded within the structures in (37) (but probably not (38), see fn. 26). To the extent that a language marks phonologically the differences between the syntactic contexts in (37), such marking must be functional, the type of marking we have analyzed as the spellout of head features, or alternatively, through the merger of f-morphs (see Chapter 10, section 2.2 for discussion). In turn, the L-domain in (37) is categorized solely by the functional structure, which is also implicated in the assignment of roles to the DPs.

But if (syntactically projected) morphology is no longer allowed to be implicated in the modification of lexically-specified argument structure, through selecting head-assigned arguments or absorbing them, claims regarding the syntax/morphology isomorphism, extremely popular in the

²⁶ (38), but not (37a-d), requires the intervention of categorizing adjectival morphology (*-able*, *-en*). As we noted already (cf. fn. 2), in English, and perhaps universally, morphological structure is needed to turn a stem into an adjective. For this reason, in (38) there must be morphological structure, within the L-domain, which will 'adjectivize' the L-head, rendering any dominating functional structure which is incompatible with the existence of such an adjective ill formed. This is not the case with (underived) verbs or with (underived) nouns, which may involve stems 'verbalized' or 'nominalized', respectively, directly by the functional structure, requiring no additional morphology, at least in English. See Borer (to appear-a, forthcoming) for some further discussion.

²⁷ This view, note, is compatible with at least some interpretations of the pre-cursor of UTAH, the Universal Alignment Hypothesis (cf. Perlmutter and Postal, 1984), which subscribes to the existence of structural-interpretational correlations, but which does not link them inherently to information in the lexical entries of argument takers.

wake of UTAH, are likewise weakened. Note that within the UTAH approach, a morpheme such as *-en*, whether adjectival or verbal, must project syntactically, as it (appears to) modify the argument structure of the verb it is attached to (and likewise, of course, for *-able*). However, if the relationship between argument structure and L-heads is severed, then regardless of whether or not some morphology does project syntactically, it no longer needs to project overtly or covertly solely to resolve problems in the mapping from lexical entries to argument structure representations. To illustrate, the motivation for projecting an abstract verb, roughly with the meaning CAUSE, so as to assign an external role to *drop*, has evaporated, as has the need for such abstract verbs to actually exist.

4. Severing the *Internal* Argument from its Verb

Kratzer (1994, 1996), in a detailed study of the properties of so-called external arguments and their relationship with the verb, concludes (correctly in our opinion) that it is wrong to assume that verbs assign external arguments. Rather, she proposes, external arguments are assigned by a functional projection which dominates the VP, VoiceP.²⁸ In turn, severing the external argument from the verb gives rise to a system that Kratzer (1999) refers to as semi-Davidsonian, based as it is on the fundamental insight of Davidson (1967, 1980) on the nature of the event argument. Specifically, she proposes that the syntax of 'external' arguments maps directly into a neo-Davidsonian representation, introducing an independent predicate of the event argument. In turn, the internal argument remains associated with the verb, at least syntactically. It therefore follows that the lexical entry for *feed* is as in (40a), where *feed* is a two-place predicate (external argument having been severed). The 'external' argument, on the other hand, is introduced syntactically by VoiceP. The resulting representation (translating somewhat to Neo-Davidsonian notation, and ignoring the mapping of *the dog* to a *theme* role) is as in (40b):

39. Jane fed the dog

40. a. (*feed* (theme) (e))
 b. $\exists e$ [*feed* (*Jane*, e) & (*feed* (the dog) (e))]

Suppose we endorse fully the claim that severing the 'external' argument from the verb is a syntactic realization of a Neo-Davidsonian association, as Kratzer (op. cit.) claims. Taking this conclusion one step further, however, note that in this work, we seek to sever not only the external argument from the verb, but also the internal argument. By the logic followed in Kratzer (op. cit.), the result is a syntactic structure which not only represents a Neo-Davidsonian-type association of the 'external' argument, but also a Neo-Davidsonian-type association of the 'internal' argument, or in other words, a full Neo-Davidsonian representation, much in line with Parsons (1990), although I will depart from Parson's assumption that the relevant roles are thematic ones. Specifically, with respect to (39) on its telic interpretation, I will suggest a full Neo-Davidsonian representation, based on the fact that neither internal nor external arguments are assigned by the verb, as represented in (41). *Quantity* here refers to a telic predicate, and the role labels *originator* and

²⁸ The reader is referred to Chapter 17, section 1.1 for some comparison between Kratzer's VoiceP (active and passive) and the assumptions made in this work concerning the assignment of 'external' arguments.

subject-of-quantity (roughly, subject-of-structured-change) are computed on the basis of the relevant functional structure (see Chapter 12 for elaboration):

41. $\exists e$ [*quantity*(e) & *originator*(Jane, e) & *subject-of-quantity*(the dog, e) & *feed* (e)]

In view of the claim that all 'direct' arguments are assigned by functional event structure, it is worthwhile to consider the arguments for severing the external argument from the verb, assessing the extent to which similar arguments can be made to support severing the internal argument from the verb. As it turns out, the main argument in favor of disassociating the verb from the external argument comes from the major simplification that would emerge in the statement of grammatical rules. A prime example discussed by Kratzer (op. cit.) is that of the adjectival passive. Kratzer points out that a well-known asymmetry between verbal passives and adjectival passives involves the fact that the former retains properties of the external argument (e.g., implicit argument control, and the barring of *self* anaphors as *by*-phrases), but no such properties are associated with adjectival passives, where the external argument of the original verb seems truly gone. We already noted above that the behavior of adjectival passives, with their external argument apparently gone, presents a *prima facie* problem for proponents of UTAH. To the extent that adjectival passives are predicted by UTAH to be derived syntactically, rather than lexically, disappearance of the external argument is extremely problematic. Not so, Kratzer points out, in a theory that does not assume that verbs have external arguments. Within such a theory, the disappearance of the external argument follows directly from the fact that the relevant functional structure which licenses the 'external' argument of the original verb (VoiceP for Kratzer) does not project in adjectival passives, or, as we will suggest here, from the fact that 'external' arguments, *originators*, are entailments from some event structure, rather than roles assigned by such structure, and are clearly dispensable in the absence of that structure.

But a similar rationale has already been shown to be applicable with respect to internal arguments. We already noted that in, e.g., de-verbal nominals such as *drop*, no arguments are projected whatsoever. Within a theory that severs both external and internal arguments from the verb, nothing needs to be said about [_N*drop*] beyond the fact that it is embedded under a functional structure that licenses neither 'external' nor 'internal' arguments, i.e., nominalizing functional structure. Within a theory that assumes that both external and internal arguments are assigned by the lexical item, the disappearance of both arguments in nominal *drop* (as well as in derived result nominals such as *the examinations*) must be explained. While a theory that severs the external, but not the internal, argument from the verb need not explain its disappearance, it still must contend with the disappearance of the internal argument.²⁹

Note further that any theory that assumes internal, but not external, lexical assignment, when combined with UTAH or similar restrictions on lexical argument structure modification, is faced with serious problems in accounting for the properties of *variable behavior verbs*. The issue here, to recall, is not the 'loss' or the change in the nature of an external argument, but rather involves an internal argument. While it is cost-free within such an approach to state the presence of an external

²⁹ This is a problem faced not only by Kratzer's model, but also by Harley, 1995, Marantz 1997, and various similar approaches, which postulate the lexical projection of 'internal' but not 'external' arguments. See Borer (to appear-a, forthcoming) for an extensive discussion in the context of derived nominals.

argument for the unergative variant, the presence of an internal argument in the unaccusative variant, but not in the unergative variant, poses precisely the same problems as it does for full lexical projection accounts.

Finally, we note that Kratzer's own account of adjectival passives (op. cit.) avoids running into a mapping problem of this sort only at the cost of descriptive adequacy. Specifically, as is well-known, adjectival passives do not just involve the loss of the 'external' argument of their source verb, they also involve the 'externalization' of the internal argument of that source verb (cf. Levin and Rappaport, 1986). Specifically, adjectival passives behave like unergative verbs, and not like unaccusative verbs. To illustrate, consider the following paradigms, illustrating that diagnostics of unaccusativity apply to verbal passives, but not to adjectival passives:

42. a. *takie studenty nikogda ne prinjaty v universitet (verbal passive)*
 such students never NEG accepted in university
 (M.NOM.pl) (pl)
 'Such students are never accepted in the university' (*verbal passive*)
 b. *takix studentov nikogda ne prinjato v universitet*
 (M.GEN.pl) (neut.sg)
43. a. *takie manery nikogda ne prinjaty v xorosix klubax (adjectival passive)*
 such manners never NEG acceptable in good clubs
 (F.NOM.pl) (pl)
 b. **takix maner nikogda ne prinjato v xorosix klubax (adjectival passive)*
 (F.GEN.pl) (neut.sg)
- (Russian, Pesetsky, 1982)
44. a. *ha. xuga hunxa li xal šulxan (verbal passive, possessor dative)*
 the.cake placed(V.Pass) to.me on table
 'My cake was placed on a table'
 b. *ha.xeder qušat li be-praxim (verbal passive, possessor dative)*
 the.roomdecorated(V.Pass) to.me with-flowers
 'My room was decorated with flowers'
45. a. **ha. xuga₂ hunxa la₂ xal šulxan (verbal passive, reflexive dative)*
 the.cake placed(V.Pass) to.it on table
 b. **ha.xeder₂ qušat lo₂ be-praxim (verbal passive, reflexive dative)*
 the.room decorated(V.Pass) to.it with.flowers
46. a. **ha. xuga hayta munaxat li xal šulxan (adjectival passive, possessor dative)*
 the.cake was placed.A to.me on table
 b. **ha.xeder haya mequšat li be-praxim (adjectival passive, possessor dative)*
 the.room was decorated.A to.me with-flowers
47. a. *ha. xuga₂ hayta munaxat la₂ xal šulxan (adjectival passive, reflexive dative)*
 The.cake was placed-A to.it on table
 'The cake was lying on the table'
 b. *ha.xeder₂ haya mequšat lo₂ be-praxim (adjectival passive, reflexive dative)*
 the.room was decorated.A to.it in-flowers
 'The room was decorated with flowers'

Genitive of negation, in Russian, marks unaccusative subjects and subjects of verbal passive, but not unergative subjects. As Pesetsky (1982) points out, it may not be associated with adjectival passives. Hebrew reflexive dative, associated with external arguments, may not be associated with subjects of verbal passives or subjects of unaccusatives. They are licit in conjunction with unergative subjects, as well as with subjects of adjectival passives. Possessor datives, on the other hand, are barred with adjectival passives, although licit with both subjects of unaccusatives and subjects of verbal passives. Similar facts are reported for Italian *ne*-cliticization by Belletti and Rizzi (1981), barred in adjectival passives, although licit with unaccusatives and with verbal passives. Within the Kratzer model, there is simply no way to 'externalize' the internal argument, which is projected from the lexical entry of the verb. Kratzer's structures indeed do not involve externalization, projecting the argument of adjectival passives in [Spec,VP], the very same position in which the internal argument is projected in both actives and passives. As a result, the unergative behavior of adjectival passives remains unexplained. No such problems are faced by a model that severs both external and internal arguments from the verb.^{30,31}

³⁰ The assumption that the argument of adjectival passives projects internally (specifically, in [Spec,VP/AP], as do arguments of verbal passives) is supplemented in Kratzer (1994, 1996) by the assumption that adjectives are either raising or control structures, roughly as in (i):

i. a. **Stage level Adjectives**

[_{COP}° ∅ [_{AP} [_{VP} 'internal' V]]]

b. **Individual level Adjectives**

[_{COP}° 'external' [_{AP} [_{VP} 'internal'/PRO V]]]

The structures in (ia-b) predict that while subjects of stage-level adjectives should exhibit unaccusative diagnostics, subjects of individual-level adjectives should exhibit both unaccusative and unergative diagnostics. We note in this context that to the extent that the genitive-of-negation in Russian and possessor datives in Hebrew are unaccusative diagnostics, both structures in (ia-b) make the wrong predictions. Reflexive datives in Hebrew, on the other hand, are altogether incompatible with individual level predicates, but do occur with stage level adjectives, including adjectival passives (see Chapter 17, section 2.3 for some additional comments). To the extent that they are possible with stage-level adjectives, the structure in (ia) fails to predict this.

³¹ Kratzer (op. cit.) gives two more arguments for severing the external argument from the verb. As both involve an asymmetry between internal and external arguments, both could be construed as arguments against severing the internal argument from the verb. The first argument concerns the well-known paradigm discussed in Marantz (1984), which shows that the semi-idiomatized expressions involving the verb and its direct object exist, while idioms involving the subject are considerably rarer. The second argument involves the impossibility of realizing the so-called external argument in derived nominals, derived by Kratzer from the absence of an event argument (and hence a VoiceP) in derived nominals. For extensive argumentation that so-called external arguments *are* realized in derived nominals, see Rozwadowska, (2000), as well as Borer (1999b, to appear-a, forthcoming). As for the observations made by Marantz (1984) concerning semi-idiomatized expressions, Kratzer opts to state them (with respect to the verb *kill*) as follows:

Assuming ... that *kill* has its traditional denotation ... its denotation would be a function *f* with the following properties: if its argument is an animate being *a*, *F* yields a function that assigns truth to any individual *b* if *b* kills *a*. If its argument is a time interval *a*, *f* yields a function that assigns truth to any individual *b* if *b* wastes *a*. If its argument is a conversation or discussion *a*, *f* delivers ... a function that assigns truth to any individual *b* if *b* dampens *a*. And so on. (Kratzer, op. cit., Chapter 1, pp. 10-11).

The remainder of Book II is devoted to articulating the syntactic, semantic, and morphological ramifications of severing both direct arguments from the verb. In Chapter 12, I discuss the projection of functional event structure, arguing specifically for an Event Phrase (EP) and for an Aspectual Quantity Phrase (ASP_QP). In the context of both of these nodes, argument role labels may emerge, those of *originator* and *subject-of-quantity*, respectively. In both cases, however, it is not the structure itself that assigns a role. Rather, the role is assigned as an entailment from the event structure. The appearance of an obligatory argument, especially in the case of unaccusatives and telic transitives, I will argue, does not arise from assignment relations, but rather, from the need to assign range to aspectual structure, which must occur under well-defined syntactic conditions, specifically, under specifier - head relations. As such, the existence of well-defined formal syntactic conditions on the emergence of a telic interpretation will provide a strong argument for the syntactic representation of event structure. Crucially, I will assume that while 'telicity' is structurally represented, 'atelicity' is that which emerges in the absence of telicity, thereby ascribing to the telic-atelic distinction the same type of structural variation that was already motivated for the distinction between quantity and non-quantity nominals.

In Chapter 14, I turn to an elaboration of the notion of *quantity*, as proposed in this work both for nominals and for events. The notion will be argued to be the same one in both cases, differing in some important ways from, e.g., Krifka's (1992, 1998) notion of *quantization*. In that context, I will further argue for the syntactic, rather than lexical, representation of event argument roles, for the view of telicity as the 'structuring' of atelicity, and for the emergence of argument interpretation as an entailment from event structure, rather than as a direct assignment relationship.

In Chapter 16 I turn to cases where range assignment in event structure is marked morphologically, specifically, through the Slavic perfective system. I will argue that the perfective system is fundamentally the marking of *aktionsart* (although not so for the imperfective system),

By assumption, Kratzer suggests, there could be no such relations between the verb and the 'external' argument, thereby suggesting an asymmetry between external and internal arguments. However, the assumption is by no means a correct one. Consider the pairs in (i) and (ii) as an illustration:

- i. a. the wall touched the fence
- b. Jane touched Amy
- ii. a. sincerity frightened the boy
- b. Amy frightened the boy

While (ib) is ambiguous, the choice of subject in (ia), an 'external' argument, excludes an eventive (non-stative) reading and forces a stative reading. Likewise, while (iib) is ambiguous, the choice of subject in (iia) excludes a causative reading, and forces a psychological predicate reading. Within the approach advocated here, neither suggests selection by the verb, but simply the existence of a set of selectional restrictions which are imposed by world knowledge, and which favor a particular syntactic computation. To the extent that semi-idiomatized expressions clearly do exist with respect to 'external' as well as 'internal' arguments, they show that there is no case here for the proposed asymmetry.

It might be interesting to note that even with respect to the paradigm of the verb *kill*, while (iiia) is ambiguous, (iiib) forces an 'idiomatic' reading, as based on our knowledge that *attitudes*, fortunately, cannot literally kill:

- iii. a. you are killing me
- b. your attitude is killing me

and that just as within languages such as English or Hebrew quantity marking of the argument translates into quantity marking of an aspectual head, so in Slavic languages, quantity marking on the head (i.e., a quantity head feature) translates into quantity marking on the argument. One of the most important predictions of the system presented here is that telicity could exist without an 'internal' argument. That this is indeed the case will be argued in detail in that Chapter 16.

Chapter 17 explores the level of graininess desirable for the system as a whole, as well as some additional residual issues touching specifically on the implications the system has for resultative constructions and for manner of motion-verbs, and ending with some broad reflections on the nature of the interaction between the conceptual system and the grammatical system.

In Part VI (Chapters 18-19) I turn to the licensing of event arguments, arguing specifically that the event argument, projected as part of the EP node, must be existentially bound, and that such existential binding is responsible for the emergence of effects otherwise attributed to Chomsky's (1981) Extended Projection Principle. The chapter will involve a close examination of locative clitics in Hebrew and their existential function, which in conjunction with the binding of the event argument produces a wide range of word orders and interpretations otherwise absent in the language.

Finally, Chapter 2 concludes this study with a discussion of some open issues and possible future research agendas, focusing largely on some open properties of listemes.