

Chapter 14: Interpreting Telicity	1
1. Introduction	1
2. Against Lexical Encoding	5
3. To Quantity or to Quantize?	19
4. Scalar Representations and Telicity	23

Chapter 14... Interpreting Telicity

1. Introduction

The account given for the projection of arguments in the previous chapter rests very heavily on the existence of a particular syntactic configuration, which leads to an event structure and an argumental interpretation of a specific sort. Most prominently, it involved postulating a structure which is sufficient (but as we will see, not necessary) to give rise to a telic interpretation, which results in the assignment of an event participant role to the direct object. More specifically, the account rests on the following premises:

- A. The semantics of (at least some aspects of) event structure is read off the syntax of functional structures with specific range assigned to the functional heads.
- B. At least for a well-defined subset of telic interpretations, such range assignment is met in a particular syntactic configuration, specifically, that of specifier – head agreement, with the structure in (1):

$$1. \quad [{}_{\text{ASPQ}} \text{DP}_{\# \alpha} \quad [{}_{\text{ASPQ}} \langle e \rangle_{\# \alpha}]] \quad (\text{with } \alpha \text{ the specific quantity value of } [{}_{\text{DP}} \langle e \rangle_{\#}])$$

It is precisely this syntactic configuration which gives content to the often-discussed homomorphism between the quantificational properties of events and the quantificational properties of nominals. Within the syntactic domain, this homomorphism derives from the fact that both nominals and events may (or may not) be syntactically specified as quantity, where by *quantity* we mean the existence of quantifiable divisions, ranging semantically over a similar class of predicates within the nominal domain and the event domain, and from the fact that specifier-head agreement may copy the quantity value of a nominal onto the head that it is attached to, thereby giving rise to quantifiable event divisions.

- C. As the crucial property here is quantity, syntactically represented and semantically interpreted in accordance with that syntactic structure, no role whatsoever is played by the lexical semantics of items involved, which is to say, neither the lexical semantics of the verb nor of a direct argument which meets Verkuyl's generalization does or can play a formal role in the determination of telicity. Furthermore, to the extent that we deny the existence of lexical specification concerning argument structure, and in following Tenny's (1987, 1992, 1994) attempt to reduce all argument roles to those of event participants, we must reject any account of telicity which crucially relies on the assignment of some particular role to some particular argument, e.g., *theme*, regardless of whether it is assigned by the verb or through any other means.

It is worthwhile noting that to the extent that there is indeed a clear direct mapping between the properties of overt determiners associated with the direct object (in an English-type

language) and event interpretation, and to the extent that it can be shown that the relationship between direct objects and event interpretation obeys well-defined syntactic conditions, the system we are developing here constitutes a strong argument for a view of the syntax-semantics interface according to which the syntax constructs formulas that the semantic component then interprets. While it may still be the case that distinct syntactic structures could be assigned an identical interpretation, if the picture here is on the right track, it seriously challenges a semantic picture which allows a single syntactic structure to be manipulated by the semantics so as to give rise to distinct interpretations (e.g., through type-shifting).

These conclusions notwithstanding, the account offered for telicity thus far remains incomplete with respect to some crucial interpretational issues. Specifically, we must address lexical specification and thematic role assignment, typically claimed to play a crucial role in the determination of telicity, as clearly within the account proposed here they could not assume this task. Further, the interpretational consequences of replacing Krifka's (1989, 1992) *quantization* with *quantity*, in the relevant sense, must be discussed in detail. I turn to this task directly, in sections 2 and 3, where I argue against the lexico-semantic encoding of any properties which give rise to telic structures, and where I elaborate further on the notion of *quantity*, contrasting it with Krifka's *quantization* and Kiparsky's (1998) *boundedness*.

Quantity, when associated with ASP_Q , has a role akin to that attributed to #P within the nominal domain. It selects, with respect to a particular event, a specific *quantity* reticule, providing quantification to divisions of that event. Syntactically, quantity interpretation emerges from the projection of a specific open value, $[_{ASPQ} \langle e \rangle_{\#}]$, which must be assigned range. The structure in (1), as well as Verkuyl's generalization, crucially emerge as a result of the fact that (in the languages considered thus far) there is no regular paradigm in the functional lexicon, be it in the form of a phonologically realizable head feature or an independent *f-morph* that merges with $[_{ASPQ} \langle e \rangle_{\#}]$ and assigns range directly to it. The only systematic way to assign range to $[_{ASPQ} \langle e \rangle_{\#}]$ is thus indirectly, through specifier - head agreement, requiring the existence of a quantity DP.

Surely, however, the absence of such functional range assignment, through either an *f-morph* or a head feature, is a language-specific, or even construction-specific fact. Further, recall that, at least in the nominal domain, range can be assigned through an adverb of quantification. Thus, in principle, we expect the occurrence, in some languages, of overt functional marking on the verb, reflecting the existence of a head feature that can assign range directly to $[_{ASPQ} \langle e \rangle_{\#}]$, and/or an independent *f-morph* likewise assigning range directly to $[_{ASPQ} \langle e \rangle_{\#}]$. Alternatively, an adverb of some sort could assign range to $[_{ASPQ} \langle e \rangle_{\#}]$. In turn, should it turn out to be possible for such range assignment to occur, we expect the occurrence of a quantity DP to no longer be crucial for the emergence of telicity, contra Verkuyl's generalization. Schematically, such structures would be as in (2a-b):

2. Telicity (through direct range assignment):

- a. $[_{ASPQ} (DP_{\pm\#}) V \langle \alpha \rangle \langle e \rangle_{\#\alpha} [_{VP} \Psi]]$
- b. $[_{ASPQ} (DP_{\pm\#}) [f\text{-morph}]_{\alpha} \langle e \rangle_{\#\alpha} [_{VP} V]]$
- c. $[adverb_{\alpha} [_{ASPQ} (DP_{\pm\#}) \langle e \rangle_{\#\alpha} [_{VP} V] adverb_{\alpha}]]$

$([f\text{-morph}]_{\alpha}$ = free functional morpheme with an α range; $\langle \alpha \rangle$ = a head feature with the relevant range)

Note that if indeed telicity is possible without a quantity DP, it indicates that the emergence of a *subject-of-quantity* interpretation is the (optional) *effect* of telicity, rather than its cause. In turn, recall that the *originator* interpretation, associated with [Spec,EP], was assumed to be an *effect* of the structure, rather than a cause, a point to which I return at some length in Chapter 18. If *subject-of-quantity* is likewise not obligatory in telic configurations, the asymmetry between *originators* and *subject-of-quantity* disappears, and all direct event arguments turn out to be entailments from event structure, rather than assignment relations between particular nodes and referential expressions. Verkuyl's generalization, and the argumental interpretations associated with it, valid as they are for a broad range of telic constructions, turn out to reflect one specific mechanism of range assignment to $[_{ASPQ} \langle e \rangle_{\#}]$, i.e., that associated with quantity specifiers, on the one hand, and the absence (in the typically discussed languages) of direct range assignors for $[_{ASPQ} \langle e \rangle_{\#}]$, on the other.

Even more crucially, consider the following possibility. In a language such as English, there are neither aspectual *f-morphs* nor (realizable) head features which can assign range to $[_{ASPQ} \langle e \rangle_{\#}]$, and hence $[_{ASPQ} \langle e \rangle_{\#}]$ must be assigned range through a quantity DP in [Spec,ASP_Q]. Specifier – head agreement, however, is at least *prima facie* a symmetric relation. It is thus fully predicted by the system proposed here that alongside the structure in (1), we would find the structure in (3) (where the arrow indicates indirect range assignment):

$$3. \quad [_{ASPQ} ([_{DP} \langle e^{\alpha} \rangle_{\#}) \] [_{ASPQ} \langle \alpha \rangle_{\#} \langle e^{\alpha} \rangle_{\#}]]$$

In (3), $[_{ASPQ} \langle e \rangle_{\#}]$ is assigned range directly through one of the mechanisms in (2a-c). In turn, through specifier - head agreement, the value of $[_{ASPQ} \langle e \rangle_{\#}]$ is transmitted to $[_{DP} \langle e \rangle_{\#}]$, turning it into a quantity DP, in the absence of an independent range assignor to $\langle e \rangle_{\#}$ within the DP. Thus in structures such as (2a-c), we expect no DP at all, or alternatively, a DP with the range assigned to $[_{DP} \langle e \rangle_{\#}]$ inherited from the quantity properties of ASP_Q. Elaborating, as the assignment of range to $[_{ASPQ} \langle e \rangle_{\#}]$ in (2a-c) is clearly not dependent on the DP, we do not expect Verkuyl's generalization to hold, and whether or not there is a DP in [Spec,ASP_Q] becomes orthogonal to the presence of telic interpretation. If, however, a DP does project in [Spec,ASP_Q], and if it does contain an open value for $\langle e \rangle_{\#}$, we predict that through specifier – head agreement, it would be the value assigned to ASP_Q, through an independent *f-morph* or a head feature, that would assign value to $[_{DP} \langle e \rangle_{\#}]$. To the extent that there is a specifier for ASP_Q, then, we do expect it to exhibit the same sort of agreement phenomena as we saw in languages that must obey Verkuyl's generalization to assign range to ASP_Q. In these cases, however, it would be the value of the head that would be copied onto the specifier, rather than the other way around.

Are there actually structures such as those in (2)-(3), involving, specifically, direct range assignment to ASP_Q, without a direct argument, without a DP in [Spec,ASP_Q]? Note that if there are, not only do they serve as evidence that Verkuyl's generalization does not hold universally, but further, they pose a serious problem for accounts that crucially derive telicity from the existence of a DP argument with particular properties. For instance, if cases such as (2)-(3) do

occur, the existence of a (quantity) *incremental theme* could not be argued to be a necessary semantic (or syntactic) condition for telicity, contra Dowty (1991) and Krifka (1992).¹

Turning to atelicity, we concurred with Tenny (1994) that atelicity is associated with the absence of the relevant event, i.e. quantity, structure.² Specifically, atelicity emerges whenever the structure in (1) is missing. The structure in (1) might be missing in a variety of contexts, at least three of which were mentioned. First, the event might be stative. Second, the structure might be missing when a sole direct argument is otherwise licensed, as in the case of, e.g., unergatives, or conatives. Thirdly, the structure might be missing if a shell FP (F^SP) is projected, assigning partitive case to its DP specifier. In all these cases atelicity emerges, but it is clear that as such, atelics are not a uniform class, in that the term ranges, as a description, at least over atelic intransitive eventives (unergative structures), atelic transitive eventives (partitive constructions), and statives. It follows that while there may be well formedness conditions associated with telicity (e.g., quantity DP, etc.), there shouldn't be any which are associated with atelicity. Rather, we expect to find distinct well-formedness conditions associated with various structures which, by virtue of lacking the structure in (1), are atelic, but which are otherwise distinct. Thus, for instance, we suggested that F^SP may only project if phonologically licensed, and that the conative alternation involves an *originator*, together with an argument licensed in the L-domain through the merger of a preposition. Although both of these configurations are atelic, the well-formedness considerations are distinct and unrelated to atelicity, as such. Likewise, if it is correct to assume that stative events include a specialized structure, they may be subject to well-formedness conditions of their own, which, in turn, wouldn't apply to other atelic configurations. In this respect, the account of atelicity offered here differs from the account given in Krifka, (1992), and from its extension in Filip, (1996), both of which crucially assume that atelicity does involve a specific set of properties.

I already argued in Chapter 13 that atelicity is the absence of quantity structure, and not a dedicated structure in and of itself. In Chapters 15 and 16 I return to the investigation of atelicity, as well as to the study of telicity that is associated with direct range assignment to ASP_Q. Specifically, I will be concerned with empirical evidence for the following claims:

- A. Atelicity is lack of telicity. There is no atelic structure, as such. Telicity, on the other hand, is quantity structure, consisting of a reticule which is superimposed, so to speak, on unstructured events, thereby associating them with quantified divisions (and see Rothstein, 2000b, for a similar conceptualization of the properties of accomplishments).

¹ And see also Schmitt, (1996). Although Schmitt (op. cit.) does analyze cases in which properties of heads are copied onto specifiers in telic contexts as cases of specifier – head agreement, she nevertheless continues to subscribe to the view that a direct object is necessary to derive telicity. We note that within such an approach, Verkuyl's generalization cannot be derived from the need of ASP_Q, or the predicate in general, to be assigned quantificational properties, but must be a primitive.

² Although, contrary to Tenny (1987, 1994), the structure under consideration is not lexical in nature, thereby preempting objections articulated in Filip, (1996).

- B. Verkuyl's generalization captures the essential property of indirect range assignment to $[_{ASPQ} \langle e \rangle_{\#}]$, one of three possible modes of assigning range to $[_{ASPQ} \langle e \rangle_{\#}]$. In the presence of direct range assignment, ASP_Q could be well formed without a (quantity) DP specifier, and hence in violation of Verkuyl's generalization.

We will see that structures in which range is assigned directly to $[_{ASPQ} \langle e \rangle_{\#}]$ do exist, as expected, thereby lending support to the specifier – head agreement mechanism suggested as an account for Verkuyl's generalization. They further constitute strong support for the syntactic representation of telicity and event structure proposed here.

I suggested that both inter-language and intra-language variation could and should be traced back to the mode in which open functional values are assigned range, alongside the specific range of values associated with any given functional marker (e.g., numerals were counters in English, but both counters and dividers in Hungarian, etc.) Likewise, within the verbal domain, I suggest, variation is to be traced back to range assignment modes and specific values associated with specific range assignors. The English functional lexicon, for example, does not list a head feature (alternatively, does not provide a phonological realization for a head feature), or an *f-morph* which can assign range directly to $[_{ASPQ} \langle e \rangle_{\#}]$. On the other hand, it does include *f-morphs* which assign range to $[_{DP} \langle e \rangle_{\#}]$. As a result, range assignment to $[_{ASPQ} \langle e \rangle_{\#}]$ can be, and typically is, accomplished through specifier – head agreement. On the other hand, Slavic languages do have head features that can assign range directly to $[_{ASPQ} \langle e \rangle_{\#}]$, but a limited inventory of *f-morphs* and head features that can assign range directly to $\langle e \rangle_d$ (specifically, no definite or indefinite determiners). As a result, range assignment to the value $\langle e \rangle_d$ of the DP in $[_{Spec, ASP_Q}]$, and by extension, at least sometimes to $[_{DP} \langle e \rangle_{\#}]$, can be accomplished through specifier – head agreement.³

As in the case of the nominal system, it will turn out that language internally, more than one mode of range assignment may be available for the same open value. While English predominantly assigns range indirectly to $[_{ASPQ} \langle e \rangle_{\#}]$, we will see that in some constructions direct assignment is available, making the projection of a quantity DP unnecessary. I return to this issue in Chapter 16. Likewise, Hebrew, in which range to $[_{ASPQ} \langle e \rangle_{\#}]$ is typically assigned indirectly, and range to $[_{DP} \langle e \rangle_{\#}]$ directly, exhibits constructions in which range is assigned directly to $[_{ASPQ} \langle e \rangle_{\#}]$, and indirectly to $[_{DP} \langle e \rangle_{\#}]$. I return to this last issue in Part VI, where direct range assignment to event functional nodes in Hebrew is studied in great detail.

2. Against Lexical Encoding

Consider again paradigms such as those in (4):

4. a. Kim built houses (conceptual array: *Kim, build, house*)
 b. Robin pushed the cart (conceptual array: *Robin, push, cart*)

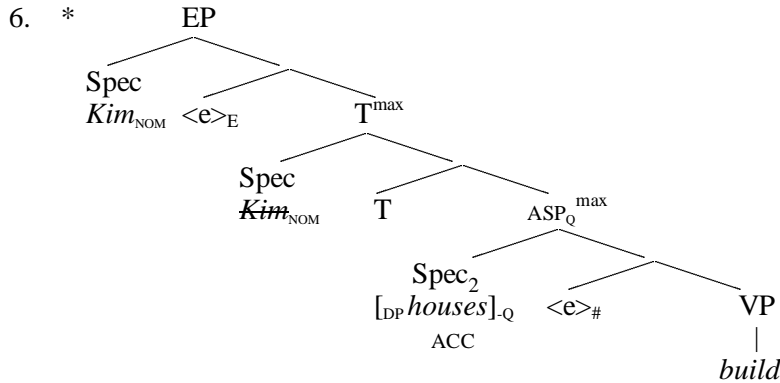
³ Bulgarian and, at times, Serbo-Croatian, have been argued to have definite determiners, of a type which is not attested in other Slavic languages, such as Polish, Czech, and Russian. In turn, these determiners are often analyzed as adjectival in nature. If indeed they are adjectival, they should be compatible, in principle, with range assignment to $[_{DP} \langle e \rangle_{\#}]$ through specifier - head agreement with ASP_Q , with the adjectival structure within such DPs functioning as a modifier of the range assignor to $[_{DP} \langle e \rangle_{\#}]$. For some relevant discussion of the potential modificational function of some adjectives and determiners, see Book I, Chapters 6 and 7.

Recall now that the merger of ASP_Q is altogether optional. If ASP_Q does not merge with VP, telicity will never emerge, nor will any argument receive accusative case. If a shell F merges with VP, on the other hand, only an atelic *transitive* derivation can emerge, as a shell F is only licensed if its specifier is associated with (partitive) case. And finally, if neither ASP_Q nor F merge with VP, the conceptual array associated with, e.g., (4a-b) could only result in a converging derivation if one of the arguments is licensed VP-internally, through an adjoined preposition or through incorporation (and see Borer, forthcoming, for discussion of incorporation within the L-domain).

Suppose now that ASP_Q , with its $[_{ASPQ} \langle e \rangle_{\#}]$ open range, does merge with VP, and that the conceptual array is as in (4a). Suppose, further, that no quantity head merges with *houses*. As a result, *houses* comes to have the DP structure associated with bare plurals, repeated here as (5):

5. $[_{DP} \langle e \rangle_d \quad [_{CL}^{max} \textit{house} \langle div \rangle \langle e \rangle_{DIV} \quad [_{NP} \textit{house}]]]$

That derivation, clearly, will not converge. Although $[_{DP} \textit{houses}]$ will presumably receive accusative case, as $[_{DP} \langle e \rangle_{\#}]$ does not project, $[_{ASPQ} \langle e \rangle_{\#}]$ cannot be assigned range and the derivation will collapse. The representation of this ungrammatical derivation is in (6):



Where [-Q] refers to a non-quantity structure, specifically here, a non-quantity DP.

However, such an account appears unavailable for the impossibility of a telic derivation for sentences such as those in (4b). Note specifically that the relevant argument, *the cart*, is in fact a quantity, and hence could and should give rise to telicity. Of course, an atelic derivation is available, but we predict for (4b), in contrast with (4a), an ambiguity. In other words, (4b) should behave just like those cases in Finnish in which a verb-argument combination receives a telic interpretation in the context of accusative case, but an atelic one in the context of partitive.

Standard judgments, however, are rather clear in the case of (4b). A telic interpretation, in the absence of an independently specified delimiting point (e.g., *push the cart to New York*) is very difficult, if not impossible, to get. But are we actually dealing here with properties of the verb *push*? Should we resolve the issue by assuming that e.g. *push* is [-ADD TO], in the sense of Verkuyl, (1972, 1993), and that as such, it blocks a telic reading even in the presence of a quantity DP? The sentences in (7) suggest that this would be a hasty move indeed, unjustified by the telic interpretation clearly available here for the verbs *push* and *pull*:

7. a. Kim pushed the button/the lever
b. Kim pulled the rope/the lever

To make matters worse, it turns out that (7a-b) themselves are actually ambiguous. Suppose I push a button to and fro on the surface of a flat table, without a well-defined endpoint in mind. This, clearly, would be akin to pushing a cart, and a sentence describing it would have an atelic reading. If, on the other hand, a button is pushed (realistically or figuratively) such that it produces a clear result (a bell ringing, someone going nuts, etc.) the event is a telic one. A very similar point, as concerning the inability of lexical items as such to determine (a)telicity is made by Schein (2002), who discusses examples such as (8):

8. Johnny Reb heaved the cannon towards the Union battery (in ten seconds/for ten seconds)

As Schein (op. cit.) notes (and see also the discussion in Jackendoff, (1996)), if the action denoted here involves heaving the cannon in a straight trajectory, towards the enemy lines, e.g., due north, an atelic reading is natural, and a telic one anomalous. If, on the other hand, the heaving under consideration involves rotating the cannon, initially pointing, e.g., northeast, toward the enemy lines directly to the north, then a telic reading is fully natural. The illustration, here, note, does not concern the properties of either the direct argument or the verb, but rather those of the directional preposition *towards*, but nevertheless, it is clear that the same point is valid for the examples in (7). The trajectory of pushing or heaving, together with the function of such pushing or heaving and the presumed nature of the object pushed, when combined with a bit of common sense and world knowledge, will in all likelihood give rise to the correct interpretation. From the point of view of the grammar, however, it is clear that the meanings associated with the concepts *push* and *button*, or for that matter, *heave* and *towards*, are in and of themselves neither sufficient nor necessary to induce telicity (or lack thereof), and that the information associated with trajectory and function is neither grammatically nor lexically marked. Rather, it is clearly based on world knowledge (e.g., pushing buttons and pulling ropes is consistent with a well-established telic event. Pushing carts is not). We must conclude, then, that it is precisely the grammatical event structure associated with specific utterances, as realized in Finnish through the accusative/partitive distinction, which is responsible for the ambiguity of (7a-b), rather than the lexical properties of the verb, the noun, and/or their combination. In other words, given an event structure, common sense and world knowledge are called upon to render the meaning of the individual concepts involved compatible with it. The emergence of a felicitous reading is then directly dependent on the degree to which the interpretation returned by the structure can be reconciled with those concepts.

Similar effects can be observed with verbs which are typically assumed to involve no change of state at all, i.e., verbs most saliently associated with a stative interpretation. Thus consider (9), where the presence of adverbs such as *twice* forces an eventive reading, as argued by Mourelatos (1978) and Bach (1981):

9. a. Kim loved Robin twice last summer
 b. The wall touched the fence (#twice today)
 c. Kim touched the fence (twice today)

Specifically, because *twice* and similar adverbials effectively force the projection of ASP_Q , a quantity structure, *love* and *touch* in (9a-b) are 'coerced' and forced to be conceptually compatible with an eventive, rather than stative, interpretation. In turn, the conceptual component returns a much more felicitous output for an eventive event predicated of *love* or *touch* as associated with human subjects, than for an eventive event predicated of *touch*, as

associated with an inanimate subject. In all of these cases, there is little sense in claiming that the anomaly or felicity emerges from the properties of *love* or *touch* (and see Chapter 16, section 3.1 for a more detailed discussion of range assignment to $[_{ASPO} \langle e \rangle_{\#}]$ in such cases, as well as argumentation that they are not instances of outer aspect, in the sense of Verkuyl, (1972) and subsequent work. Similar cases of 'coercion' in Finnish will be discussed shortly).

In claiming that the relevant domain for *aktionsart* distinctions is not the lexical specifications of verbal listemes (together with their lexically selected arguments), this work deviates from much literature on *aktionsart*, including (but not restricted to) Verkuyl, (1972, 1989, 1993), Tenny, (1987, 1992, 1994), Dowty, (1991), Krifka, (1989, 1992), Filip, (1992, 1993, 1996, 2000), Levin and Rappaport-Hovav, (1989, 1992a,b, but not 1995), van Hout, (1996), Schmitt, (1996), Ramchand, (1997) and Kiparsky, (1998), in which a variety of lexical properties are attributed to verbs.

Similarly, we must reject claims that the lexical semantics of the noun which conforms to Verkuyl's generalization, or the specific role-assignment relations it has with the verb, is crucial to the emergence of telicity. While the lexical properties of the relevant verbs proposed to be relevant are typically associated with graduality or scalar implicature (see, most recently, Hay, Kennedy and Levin, 1999), the nouns which meet Verkuyl's generalization, in addition to requiring a *theme* role, are typically argued to be associated with a property which allows the natural partitioning of the event into gradual subparts, a property not unlike that argued by Tenny (1987) to give rise to measuring out the event, or alternatively, to its delimitation. In Krifka's (1998) terms, the homomorphism between events and objects, defined in (10), must hold.⁴

10. a. *Uniqueness of Objects:*
there can be no two distinct objects which bear relation R to the same event
- b. *Uniqueness of Events:*
there can be no two distinct events which bear R to the same object
- c. *Mapping to Objects:*
if an event bears R to an object, any subpart of the event bears R to some subpart of the object
- d. *Mapping to Events:*
if an event bears R to an object, any subpart of the object bears R to some subpart of the event.

The event-object mapping in (10) is intended to capture both the mapping of events onto *quantized* objects (e.g., reading three books), and the mapping of events onto properties of an

⁴ From Krifka (1998):

- i. θ shows uniqueness of events, UE(θ) iff
 $\forall x, y \in U_P \forall e \in U_E [\theta(x, e) \wedge y \leq_P x \rightarrow \exists! e' [e' \leq_E e \wedge \theta(y, e')]]$
- ii. θ shows uniqueness of objects, UO(θ) iff
 $\forall x \in U_P \forall e, e' \in U_E [\theta(x, e) \wedge e' \leq_E e \rightarrow \exists! y [y \leq_P x \wedge \theta(y, e')]]$
- iii. θ shows mapping to events, ME(θ) iff
 $\forall x, y \in U_P \forall e \in U_E [\theta(x, e) \wedge y \leq_P x \rightarrow \exists e' [e' \leq_E e \wedge \theta(y, e')]]$
- iv. θ shows mapping to objects, MO(θ), iff:
 $\forall x \in U_P \forall e, e' \in U_E [\theta(x, e) \wedge e' \leq_E e \rightarrow \exists y [y \leq_P x \wedge \theta(y, e')]]$

object which is the *theme* of the relevant verb, and which, by virtue of its ontological properties, is capable of partitioning the event in the relevant way. Consider, as an illustrative example, the reading of a (single) book that involves, presumably, a unique event of reading a unique book. In turn, it consists of a series of sub-events, each of these sub-events defined on the basis of divisions introduced naturally by the object 'book'. Each such sub-event may be a reading of a chapter, a reading of a page, or even a reading of a single word. None of these subparts of the book are, in turn, a book, nor are any of the sub-events (e.g., the reading of Chapter 14) the same as the whole event, namely reading a book. In turn, the *incremental theme* must be *quantized*, in the sense of (11). Thus no subpart of a book is a book, making *a book* quantized, but there are subparts of books that are books, and thereby *books* is not *quantized*. Rather, *books* is *cumulative*, as books added to books are *books* (see definition in (12)). Following a similar line of reasoning, a reading of books when added to a reading of books yields an event of reading books, and the event denoted by *read books* certainly could have subparts which are likewise readings of books. But not so for an event of reading a book added to another such event, which instead gives rise to two events, each consisting of reading one book. Similarly, no part of a reading of a book is, in itself, a reading of a book (with a culminating reading). Thus, in the presence of a cumulative theme, at least (10c,d) do not hold (and arguably, neither do (10a,b)). The relationship between telicity and quantization is regulated by (13) (all definitions from Krifka, 1998):

11. $\forall X \subseteq U_p [\text{QUA}_p(X) \leftrightarrow \forall x, y [X(x) \wedge X(y) \rightarrow \neg y <_p x]]$
(*X* is *quantized* iff for all *x, y* with the property *X*, *y* is not a proper part of *x*)
12. $\forall X \subseteq U_p [\text{CUM}_p(X) \leftrightarrow \exists x, y [X(x) \wedge X(y) \wedge \neg x = y] \wedge \forall x, y [X(x) \wedge X(y) \rightarrow X(x \oplus y)]]$
(*X* is *cumulative* iff there exist *y, x* with the property *X* (and *x* distinct from *y*) such that *X* is a property of the sum *x+y*)
13. a. Telicity is the property of an event predicate *X* that applies to event *e* such that all parts of *e* that fall under *X* are initial and final parts of *e*
b. If a quantized predicate *X* applies to some event *e* then it does not apply to any proper part of *e*. Hence the only *e'* such that *X(e')* and *e' ≤ e* is *e* itself.

We note first two obvious problems with the use of the term *theme* here, evoking lexical properties of a selecting verb. First, direct objects may induce telicity even when they are clearly not arguments of the verb, e.g., in resultatives:

14. a. We sang the baby asleep
b. We ran our shoes threadbare

In (14), *the baby* and *our shoes* are not arguments of the verb. Within an approach that depends on the thematic relations between the verb and the object, then, some sort of type-shifting would be required to convert the direct object into a derived theme of some sort, as well as to postulate, in a manner that would need to be particular to each event, what the resulting relations would be between the verb and its *theme* (and see Rothstein, 2000b for a similar objection). I return to a discussion of this point and to resultatives in general in Chapter 17, section 1. Similar problems for any constrained theory of thematic role assignment are presented by the *way* construction (and see Chapter 11, section 3 for some discussion):

15. We danced our way to the ball

indeed, the ontological properties of either the class of events denoted by the verb itself, or the object(s) denoted by the noun that is the direct object.⁵

The objection put forth here joins a number of other objections to the conceptualization of telic events as consisting of the mapping of subparts of events to subparts of objects and vice versa. Thus an event of building a house may consist of much activity that does not map onto house parts (hiring an architect, reviewing blueprints, buying lumber, etc.). An event of reading an article, even if it does culminate, may include a re-reading of various sections, or indeed, reading the article twice, assuming that the first reading didn't yield satisfactory comprehension, thereby violating both *quantization* and the homomorphism between sub-events and parts of the object. To echo another well-discussed objection (cf. Tenny, 1987, Dowty, 1991, Verkuyl, 1993, Kratzer, 1994, Schein, 2002, among others), we note that for the propositions in (17), with a telic interpretation, the object cannot provide a natural endpoint for measuring out the event, in the intended sense:

17. a. her face reddened
- b. her mood brightened
- c. we cooked the eggs
- d. we filled the room with smoke
- e. we wrote a sequence of numbers

Suppose we consider as an illustration of the problem here (17d), based on the discussion in Schein (2002). Suppose we define 'full of smoke' for my living room as a milligram of smoke per cubic yard of air. We can then measure the event, by mapping filling of smoke to cubic yards of air in the room, to the point that the room is full. Suppose, however, we continue to pump smoke into the room subsequent to that point, stopping when there are two milligrams of smoke per cubic yard. This is clearly not a new event, nor has the filling become an event of 'overfilling' the room with smoke. Nor can we assume that the definition of 'full' is relativized here, or a clear circularity would emerge, so that full is precisely when the event was over, and hence only a posteriori can the relevant room parts be defined with respect to the filling event. The problem, we note, is a particularly acute one because *smoke*, the substance being filled into the room, is a mass noun, and hence we cannot assume that it is itself the relevant object in (10), and that subparts of the event map onto subparts of *smoke*.⁶

⁵ In fact, this point is basically conceded in Krifka (1998), who notes that the reason for the failure of telicity for *push the cart* is that "if the pushing of the cart goes on in an event *e*, then it typically goes on during parts of *e* as well" (p. 212). Granting that this is indeed the case, however, one wonders what, beyond whatever structure would force such homogeneity, is the role played by the lexical semantics of the verb, the lexical semantics of the object, or the thematic relations between them.

⁶ As such, 'fill the room with smoke' is not amenable to the solution which Krifka (1998) proposes for the telicity of both (ia) and (ib), which involves the scoping out of the underlined DP from within the domain of the *in three minutes* phrase, thereby acquiring an interpretation associated with a given, but unspecified amount. I return to these issues in section 3:

- i. a. we wrote a sequence of numbers in three minutes
- b. we ate some apples in three minutes

Suppose we turn now to analyses that make crucial appeal to some gradual property (of events) associated with the lexical properties of the verb, and see how they fare with respect to the ambiguity of (7)-(8). Specifically, consider some aspects of the analyses put forth by Verkuyl (1972, 1989, 1993) and Kiparsky (1998).

Kiparsky (1998), studying partitive case and taking as his starting point the assumption that the distribution of partitive and accusative case is indicative of the property \pm bounded of verbal predicates, puts forth an account of aspect in which it follows compositionally from the lexical properties of the head verb and its object, largely following Verkuyl (1989) and Krifka (1989), (1992). Within the eventive domain, the \pm bounded distinction is effectively equivalent to \pm telic.⁷ We already discussed briefly the notion \pm bounded in the context of DP structure and interpretation. Specifically, the lexical properties under consideration are formulated in terms of the properties *divisive*, *cumulative* and *diverse*, as in (18) (and see Book I, Chapter 4, section 4, and Chapter 12, section 1 for some discussion):⁸

18. a. P is *divisive* iff $\forall x [P(x) \wedge \neg atom(x) \rightarrow \exists y [y \subset x \wedge P(y)]]$
 (P is divisive if and only if for all x with property P, where x is non-atomic, there is a y , proper subset of x , with the property P)
 b. P is *cumulative* iff $\forall x [P(x) \wedge \neg sup(x,P) \rightarrow \exists (y)(x \subset y \wedge P(y))]$
 (P is cumulative if and only if for all x with property P, where x is not the maximal element with property P, there is a y , proper superset of x with the property P)
 c. P is *diverse* iff $\forall x \forall y [P(x) \wedge P(y) \wedge x \neq y \rightarrow \neg x \subset y \wedge \neg y \subset x]$
 (P is diverse if and only if for all x with the property P and all y with the property P, and x distinct from y , x is not a proper subset of y and y is not a proper subset of x)
19. A predicate P is *unbounded* (-B) iff it is divisive and cumulative and not diverse

By extension, then, a predicate P is bounded (+B) if it is not unbounded, which may be the case, e.g., if it is divisive but not cumulative, cumulative but not divisive, diverse but neither divisive nor cumulative, etc. (see Book I, Chapter 4, section 4 for some discussion). Finally, the properties \pm B may be properties of lexical items as well as properties of phrases (e.g., DPs). -B predicates, by this definition, are *bombs*, *food*, *run*, *throw at* etc. +B predicates, on the other hand, are *few bombs*, *drop*, *read something in a short time*, etc. The statements in (20) regulate the relations between the meaning of the VP-predicate and its subparts, and determine the distribution of partitive case:

⁷ As Kiparsky (op. cit.) notes, *unboundedness*, as marked by partitive case, is a notion akin but not identical to that of atelicity. Most crucially, while all telic predicates are accusative, and all partitive-marked predicates are atelic, it is not the case that all atelic predicates are partitive, but rather, some stative are marked with accusative case, a matter already touched upon in fn. 2 of Chapter 13. I noted there that within the domain of eventives, the correlation is a perfect one, and that the distribution of accusative case in Finnish suggests that some generalization concerning the uniform behavior of some telic eventives and a specific subset of statives is yet to be uncovered. We continue to set this matter aside for the remainder of this work, assuming that a careful investigation of the structure of stative predicates will reveal a workable solution.

⁸ The reader is referred to Kiparsky (op. cit.) for the specific justification of the inclusion of the restrictions *non-atomic* and *non-maximal (supremum)* in the definitions in (18).

20. a. A VP predicate is unbounded if it has either an unbounded head or an unbounded argument.
 b. The object of an unbounded VP is obligatorily partitive

Examples of the workings of this system are in (21)-(22):

21. a. they touched (-B) the bombs (+B) for an hour (#in an hour) → partitive
 b. they dropped (+B) bombs (-B) for an hour (#in an hour) → partitive
22. a. they dropped (+B) the bombs (+B) in an hour (#for an hour) → accusative
 b. they dropped (+B) many bombs (+B) in an hour (#for an hour) → accusative

Note now that Kiparsky tacitly assumes a fundamental asymmetry between the properties of verbs and the properties of arguments. While for verbs the $\pm B$ feature appears to be linked with the lexical entry of a single stem, this is clearly not the case for arguments, where the $\pm B$ feature is associated with the phrasal level (NP or DP), and not with the lexical entry of a particular noun. A similar asymmetry is found in Verkuyl, (1972, 1989, 1993), where properties that are relevant for telicity are marked on the lexical verb within the verbal domain (as the feature [+ADD TO]) but on the determiner, rather than the lexical noun, within the nominal system (as the feature [+SQA]). To the extent that the $\pm B$ feature or the feature [+SQA] on determiners correspond semantically to quantity functional structure within nominals (cf. (8)-(9), Chapter 12 and related discussion in Book I, Chapters 4-6), I certainly concur with the conclusion that it is a property of nominal *phrases* (be they NPs or DPs), and not of lexical head nouns, as such. The remaining question, then, is whether or not the assignment of the $\pm B$ feature or the [+ADD TO] feature to verbs, as a component of their lexical semantics, actually derives the properties of the aspectual system in an insightful manner.

Consider from this perspective again the ambiguities in (7), which are *prima facie* problematic for any unambiguous semantic classification of the verb *push* as either +B or -B, or as [+ADD TO] or [-ADD TO]. If *push* is classified as -B or [-ADD TO], we predict the ungrammaticality of any telic configuration involving *push*. If, on the other hand, *push* is +B or [+ADD TO], we predict (7a) to be telic, as it clearly involves a +B/[+SQA] object. Within both the Verkuyl system and the Kiparsky system, then, verbs such as *push* must be classified as $\pm B$, [\pm ADD TO], or alternatively, remain unspecified. And indeed, Verkuyl (op. cit.) does assume such ambiguity, while Kiparsky (op. cit.) specifically postulates a large class of verbs that are unspecified for the property B (see Chapter 13, (3)-(4) for illustration).⁹

If, however, a verb such as *push* (as well as verbs of creation and destruction, verbs "whose progress is mapped out into the parts of the objects," and assorted other verbs, including *beat*, *shoot*, *name*, *investigate*, and others) can be freely assigned either a +B or a -B classification, or alternatively, [+ADD TO] or [-ADD TO], the telicity or lack thereof of (7a-b) could not emerge from the *lexical semantics* of the verb, and must have another source (or alternatively, we must subscribe to the rather incoherent notion that *push* has distinct lexical semantics in its two different realizations). For Verkuyl (1993) to classify such verbs as [\pm ADD TO], or for Kiparsky to classify them as unspecified for boundedness, amounts to conceding that at least

⁹ Although Verkuyl (1993) specifically suggests that the verb *push* is [\pm ADD TO], for other transitive verbs which do not give rise to a telic interpretation, he assumes the presence of a hidden preposition.

with respect to these verbs, the lexical semantics of the verb plays no role whatsoever in determining telicity. But to make matters worse, telicity could not possibly emerge either from the determiner system or from the properties of the head N, as the NPs in (7a-b) are uniformly +B/[+SQA]. What, then, is the source of the telicity/atelicity (or alternatively, bounded/unbounded reading) in such examples, or the equivalent ones in, e.g., Finnish?

Interestingly, in Finnish, although the interpretation of such predicates is clearly underdetermined by the semantics of their parts, morphologically and syntactically, they are entirely regular. As Kiparsky observes, "once their boundedness is fixed they are treated in exactly the same way as...aspectually unambiguous verbs" (p. 286), in that the emerging morphological and syntactic properties associated with accusatively marked and partitively marked predicates become entirely indistinguishable from the properties of predicates which are headed by verbs that are, by assumption, lexically marked as +B or -B.

Kiparsky (1996) takes this latter fact, along with the fact that aspectual interpretation is accomplished at the VP level, and not at the level of any one lexical entry, to be evidence for the existence of a purely formal, morphosyntactic component of the aspectual system.¹⁰ Specifically, he assumes that partitive and (Slavic) imperfective morphology is -B, while accusative (in Finnish) and (Slavic) perfective morphology is +B. The distribution of $\pm B$ morphology, in turn, is keyed to the semantic properties of boundedness of the VP verbal head and nominal object, if these are informative enough, i.e., when the verb is unambiguously +B or -B. When the verb is unspecified, however, it appears that it is the morphology on the object or the verb (and whatever syntactic structure it reflects) that ends up forcing the VP to be interpreted as +B or -B respectively. Furthermore, Kiparsky (1998) observes, (morphological) aspect as well as partitive case can coerce shifts in the lexical meaning of verbs. Thus verbs which are, by assumption, lexically marked as +B can occur with partitive case or imperfective morphology, in Slavic, giving rise to unboundedness (as in the Russian examples in (23)), while -B verbs can occur with accusative case or perfective morphology, giving rise to boundedness (as in the Finnish examples in (24)):¹¹

23. a. *Onda-va-l (imp.) mne den'gi, a ja ne vzja-l (perf.)*
 he give-pst3sgm me money, but I not take-pst3sgm
 'He tried to give me money, but I refused.'

(Leinonen 1984 as cited in Kiparsky, op. cit.)

- b. *Ja vas obman-yva-l (imp.), no mog liobman-u-t*
 I you deceive-pst3sgm but could-pst3sgmQ deceive-inf
 'I tried to deceive you, but could I deceive you?'

¹⁰ Although the discussion in Kiparsky (1998) is consistent with this conclusion, the point is not explicitly made, although Kiparsky (1998) does assume that the purely formal properties of partitive case and imperfective morphology in Slavic have the ability to coerce predicates, see below.

¹¹ Note that at least some of the pairs in (24) involve resultatives, and hence could be argued to be independently telic. This point, however, is orthogonal to the discussion here. If the existence of resultative structures changes event structure, it implies that the properties of the verbs, as such, cannot determine telicity, and that telicity is syntactically structured, precisely the point we seek to make here.

24. a. *Hiero-i-n si-tä*
 rub-pst-1sgit-PRT
 'I rubbed it'
- b. *Hiero-i-n sen pehmeä-ksi*
 rub-pst-1sgit-ACC soft-Sg
 'I kneaded it soft'
- c. *Ravist-i-n mato-n*
 shake-Pst-1sg carpet-ACC
 'I shook (out) the carpet'
- d. *Äiti makas-i lapse-nsa kuoliaa-ksi*
 mother lie-Pst-3sg child-ACC dead-Sg
 'The mother lay her child dead' (killed him by lying on him)
- e. *Jussi maalas-i talo-n*
 Jussi paint-Pst-3Sg house-ACC
 'Jussi painted the (whole) house'
- f. *Jussi maalas-i talo-a*
 Jussi paint-Pst-3sg house-PRT
 'Jussi was painting the house'
- g. *Rakast-i-n tei-tä*
 Love-Pst-1Sg you-pl-PRT
 'I loved you'
- j. *rakast-i-n te-i-dä-t rappio-lle*
 love-Pst-1Sg you-pl-ACC ruin-Adess
 'I loved you to ruin'

In every single case in which the morphosyntax and the (assumed) lexical semantics of the verb are at odds, as well as in all cases in which the semantics of the verb is assumed to be underdetermined, it is the morphosyntax which prevails. In turn, for all such cases, one wonders what role, if any, the lexical semantics of the verb plays in the determination of aspect, given that grammatically, if not conceptually, it is cancelable. The assignment of the $\pm B$ feature to verbs thus appears redundant in a very large number of cases. Rather, it appears, the majority of verbs can occur in both partitive and accusative contexts, and 'coercion' is what emerges whenever the semantic interpretation of a syntactic (or morphosyntactic) structure leads to a clash with the conceptual, encyclopedic meaning of the listeme embedded within that syntactic frame.

There remain, then, those relatively few verb-types in which the perceived lexical semantics of the verb and the morpho-syntactic marking are never at odds, and where only one morphosyntactic marking, either imperfective or perfective, either partitive or accusative, is possible (the reader should recall, however, that the only Finnish verbs under consideration here are transitive, as we are specifically focusing on the partitive/accusative division, irrelevant for intransitive predicates). All transitive constructions which do not allow accusative case (and a bounded/telic interpretation), or allow it under an extremely coerced interpretation only, turn out to be stative (and see (9) for the relevant comparison with 'coerced' statives in English). Under the assumption already advanced here that at least the relevant stative events do not project an ASP_0 , the absence of both accusative case and a telic/bounded interpretation for statives follows (but see fn. 7 for some relevant discussion). A more interesting challenge is presented by eventive transitive constructions which do not allow partitive case (and an

unbounded/atelic interpretation), and which all turn out to be achievements, in the sense of Vendler (1967), i.e., punctual or instantaneous telic events. I return to the discussion of achievements in Chapter 19, sections 2-3. The absence of partitive case in achievements, in turn, patterns with the absence of variable behavior for intransitive achievements, already touched upon in Chapter 11, section 3. The picture here is a general one. Intransitive agentive verbs of manner of motion (in the sense of Levin, 1993) reject telic structure; some achievements verbs, so-called, resist atelic structure. These two cases aside, however, the picture presented by Kiparsky (op. cit.) does not support a lexical account. In fact, it directly undermines it, in showing conclusively that a substantial formal, morphosyntactic component is involved, and that it systematically can override conflicting lexical information and assign formal interpretation in the face of undetermined lexical information.

Why, then, is it so difficult to get a telic reading for (4b)? I suggest that here, as elsewhere, what is responsible is world knowledge. The motion pattern associated with the concepts *cart* and *wagon* (i.e., parallel to a surface) is very salient, especially in view of their transportation function, making the relevant world knowledge very hard to override. To the extent that situations in which this knowledge is overridden can be constructed, they must involve abstracting away from the motion/transportation meaning associated with the concepts *cart* and *wagon*, and from their extremely salient locomotion mode. I leave it to the reader to imagine such scenarios. While not easy to construct, they are nonetheless possible.

Crucially, however, our predictions here go beyond the properties of *push* and *pull*. In fact, we predict directly that all (non-stative) transitive verbs should be ambiguous between a telic reading and an atelic reading, and that any anomalies which emerge are attributable to conflicts with world knowledge, rather than to grammatical factors. We already saw that classical cases of atelic transitives are, in fact, potentially ambiguous between an atelic and a telic reading. Can it further be shown that classic telic cases are too?

Although it has been rather standard in the literature to assume that transitive verbs such as *read*, *write*, *climb*, *eat*, *destroy* etc. are telic, increasing grass-root pressure has led to revision of this claim. As it turns out many, if not most, native speakers of English find those verbs fully acceptable in the context of the adjuncts in (25):¹²

25. a. we read the bible in Church today for two hours
 b. Pat climbed the mountain in two hours/for two hours
 c. Kim wrote (and re-wrote) this letter in a week/ for a week
 d. For how long do you intend to eat this chicken?
 e. Jan destroyed her relationship with her parents for decades

It would be useful to compare the (at times) relative possibility of the atelic readings of (25a-e) with the complete impossibility of using an atelic modifier in at least some verb-particle constructions which are unambiguously telic, and the impossibility of modifying clearly atelic expressions with telic modifiers:

¹² I am particularly grateful to my class in Girona in summer of 1994 for insisting on the judgments in (25), which have been pivotal in the emergence of the present model, designed precisely to capture them. For a recent objection to the notion of *incremental theme*, based on ambiguities such as those in (25), see Rothstein (2000b).

26. a. I wrote this letter up in a week/*for a week
 b. I ate the cake up in two minutes/*for two minutes
 c. I broke my office down in three days/*for three days
27. I ate at the cake for an hour/*in an hour
28. a. *mašaḳti 'et ha.xeḃel tok šaloš daqot/bemešek šaloš daqot*
 pulled.1.sg OM the rope inside three minutes/for three minutes
 b. *mašaḳti ba-xeḃel *tok šaloš daqot/bemešek šaloš daqot*
 pulled.1.sg in-the.ropes *inside three minutes/for three minutes
 c. *hikiti 'et ha.šaken tok šaloš ša ḡot/be-mešek šaloš ša ḡot*
 beat.1.sg OM the.neighbor inside three minutes/for three minutes
 d. *hikiti ba-top *tok šaloš ša ḡot/be-mešek šaloš ša ḡot*
 beat.1.sg in-the.drum *inside three minutes/for three minutes
 e. *qarati 'et ha.seper tok šaloš ša ḡot/be-mešek šaloš ša ḡot*
 read.1.sg OM the.book inside three minutes/for three minutes
 f. *qarati ba-sefer *tok šaloš ša ḡot/be-mešek šaloš ša ḡot*
 read.1.sg in-the.book *inside three minutes/for three minutes (Hebrew)

We conclude, then, that as in the case of the unaccusative/unergative alternation, massive ambiguity appears to be associated with different transitive arrays (that is, arrays which select two participants), allowing them to occur in (at least) two distinct structures: a telic, accusative one, and an atelic, partitive one.¹³

Before turning to a comparison of the specific definitions of quantity and quantization, one potential objection must be dealt with. One could propose, at this point, that the conclusion reached here, according to which lexical specifications of telicity are unhelpful, may lead to an entirely different conclusion from the one adopted here. Thus instead of arguing in favor of syntactic structures which determine event structure, and for the structural ambiguity of (7a-b), one could argue that (7a-b) are simply vague, and are interpreted in accordance with world knowledge, indeed, but not in conjunction with specific syntactic structures. Such a position is taken in Schein (2002), who suggests that telicity, such that it is attested as part of the grammar, is induced by time measure expressions such as *in x time*, and specifically, by the scoping out of the direct object, or some other constituent, from within the domain of the *in x time* phrase. Thus the grammar will assign a telic interpretation to (29a), just in case *the fish* scopes outside the domain of *in two minutes*, but as there is no *in x time* phrase in (29b), it will remain vague, with culmination, or lack thereof, determined outside the domain of grammar, by world knowledge alone:

29. a. Bernhard fed the fish in two minutes
 b. Bernhard fed the fish

However, any analysis of telicity as induced by the relevant time-measure phrase faces serious difficulty in accounting for the distribution of partitive and accusative case in Finnish, which is independent of the presence of such measure phrases. Thus, in considering the examples of partitive and accusative case in Finnish (cf. (3)-(4) of Chapter 13, as well as (24)), we note that a telic or an atelic reading emerges irrespective of the presence of time-measure

¹³ I will return in Chapter 15, section 2 to Krifka's analysis of Finnish partitive case, in the context of a discussion of the properties of the Slavic (im)perfective system.

phrases, solely through the presence of case, clearly reflecting the existence of a structure which is interpreted unambiguously as telic or atelic, without any such time-measure phrases.¹⁴

I return shortly to the scoping out analysis, assumed also in Krifka, (1998), and to some problems with it. With respect to the role of *in x time*, I suggest that it is fundamentally different from that which is played either by adverbs such as *once* or *twice*, or by delimiting expressions such as *to the store* or *down*. Most importantly, while *once* and *to the store* give rise to a telic reading by themselves, *in x-time* expressions do not, as attested by the contrasts in (31):¹⁵

30. a. Kim ran *once in two months*
b. Kim ran *to the store in two hours*
b. *Kim ran *in two months*
c. Kim loved Robin *twice in three months*
d. #Kim loved Robin *in three months*

Rather, I will assume that *in x-time* is a predicate modifier, specifically modifying *quantity*, and hence requiring the projection of ASP_Q . Note, in this respect, that *in x-time* has the effect of equating the time of culmination with the actual end of the event itself. As I will suggest below, however, *quantity* readings do emerge in the presence of intermediate culminations, which can be followed by a non-culminating sub-event. To the extent that *in x-time* does equate the time of culmination with the actual end of the event, however, it is not surprising that a semblance of a fixed amount should emerge, for the object under consideration. When viewed differently, however, it may very well turn out that the prevailing theoretical focus on the diagnostic value of *in x-time* expressions as a test for telicity has resulted in explanations for telicity which focus on endpoint culminations, thereby obscuring the theoretical significance of intermediate culminations.¹⁶

¹⁴Barry Schein (p.c.) proposes that these difficulties could be solved if partitive case in Finnish is treated on a par with the English progressive. Note, however, that as partitive case occurs with statives, such a reduction is at least prima facie not easy to accomplish. Further, even if the partitive is analyzed as a progressive, one still needs to account for the fact that accusative case is not possible with an atelic interpretation, for presumably non-progressive cases, such as 'we read the bible in church'. Finally, as Kiparsky (1998) notes, there is a progressive construction in Finnish, which requires an auxiliary, and which has a distribution distinct from that of partitive case.

¹⁵ And note in this respect that the expression *for x-time*, usually treated as a diagnostic of atelicity, returns a bound, quantity reading, and thus must be viewed as an operator on atelic predicates which turns them into telic ones. Not so for *in x-time*, which, we argue, is a modifier of *quantity*, and not an operator. See Chapter 16, section 3.3 for some discussion of this point, as well as some additional discussion of the dividing line between predicate modifiers and range assigners.

¹⁶ If, indeed, telic events do not require an end point, or a *telos*, the term *telicity* is clearly a misnomer. This fact notwithstanding, I will continue to use it, with the clear understanding that what is denoted by the term is the existence of a *quantity* predicate (or its absence, in the case of atelicity), rather than the existence (or absence) of a *telos*.

3. To Quantity or to Quantize?

In Book I, Chapter 4, section 4 it was noted already that Krifka's (1992, 1998) definition of quantization gives rise to a number of problems. First, of the class of DPs which induce telicity in accordance with Verkuyl's generalization, those in (31) (among others) are (arguably) quantized in the relevant sense. Those in (32) (among others) are not:

31. a. three books (and likewise all cardinals)
b. The book
c. Every book
d. a book
32. a. some books
b. more than three books
c. at least three books
d. *unas manzanas*
indef.pl apples
e. several books
f. many books

I further noted that the notion of *boundedness* as put forth by Kiparsky (1998) potentially resolves some of these problems, in allowing a *bounded* reading in the presence of cumulativity or divisive reference, but not both. However, we saw that while this would appropriately classify *at least three books* as bounded (*cumulative*, but not *divisive*), it would continue to classify, incorrectly, *some books*, *several books* and *unas manzanas* as *unbounded* (both cumulative and divisive, and see Book I, Chapter 4, section 4 for a detailed discussion of this point).

Krifka (1998), in attempting to address these problems, proposes that quantifiers such as those in (32) scope outside the domain of the time-measure phrase *in x-time*, thereby giving rise to an interpretation of a fixed amount (and see Schein, 2002, for a similar assumption reached from a different perspective). There are, however, a number of problems with this proposal. First, we note that Krifka (1998), in assuming the scoping out of phrases such as *some books*, appeals to de Hoop's (1992) correlation between a weak interpretation and scoping out, in turn correlated with telicity. I reviewed this claim in Chapter 13, section 2, concluding that weak DP interpretation cannot possibly be correlated with telicity. It was further noted that to the extent that weak DPs, such as weak *some* DPs, do give rise to telicity, if one assumes that they scope out of the domain of time-measure phrases, it must be assumed that there are at least three distinct positions for *some*: weak *some*, which does not give rise to telicity, does not scope above time-measure phrases, and does not exhibit object-shift; weak *some* (identical reading) which does scope above time-measure phrases, and does give rise to telicity, but which nevertheless does not object-shift, and finally, strong *some*, which scopes above time-measure phrases, giving rise to a strong interpretation, and to telicity, and which does object-shift.

Consider now the following paradigm, based on Carlson (1977a,b):

33. a. *Bill ate apples and Bill didn't eat apples
b. Bill ate *sóme* apples and Bill didn't eat *sóme* apples

The paradigm in (33), Carlson (op. cit.) argues, follows from the fact that *sóme apples* does not have the properties of *apples*, however similar their interpretation might be in certain contexts. Specifically, as *sóme apples* may scope outside the domain of negation, no

contradiction emerges in (33b). However, *apples* cannot scope outside the domain of negation, and as a result, (33a) asserts a contradiction.

As it turns out, English marks phonologically the distinction between strong and weak *some*, through the presence in the former of primary stress, absent in the latter. In view of this, consider (34)-(35):

34. *Bill ate *sm* apples and Bill didn't eat *sm* apples

35. a. Bill ate *sm* apples in half an hour

b. *Bill ate *sm* apples in half an hour and Bill didn't eat *sm* apples in half an hour

c. Bill ate *sóme* apples in half an hour and Bill didn't eat *sóme* apples in half an hour

Note specifically that *sm apples* can induce telicity, but cannot scope outside the domain of negation, leaving us with the inevitable conclusion that if, indeed, scoping out is required for telicity to emerge then it scopes to some position above the time-measure phrase, but below negation, with no discernable effects on its interpretation beyond telicity. We note further that *sm apples* can receive a variable, distributive reading and induce telicity at the same time, thus in (36) *sm articles* is clearly within the scope of *every professor*. Further, note, (36) is ambiguous between a reading in which *sm* distributes over (*in*) *a month* (i.e., for each professor, there are a number of articles such that each of them has been written in one month), and a reading in which *sm* does not distribute over (*in*) *a month*, but rather, for each professor there is a number of articles bigger than one such that they have been written in the same month. Both readings are telic. If indeed telicity requires *sm books* to scope outside the domain of *in a month*, this ambiguity would need an explanation which is not scope related:¹⁷

36. Every professor wrote *sm* articles in a month

Given these complications, it would appear that a solution to the problems presented by the non-quantized DPs in (32) should be sought elsewhere.

As it turns out, Krifka's notion of *quantization* faces yet another problem. Consider cases such as those in (37):

37. a. Kim ran to the store

b. The ship sank (to the bottom of the ocean)

c. Pat walked home

We note that while (37a-c) are telic, they are not quantized. In fact, they are neither quantized nor cumulative. Specifically, there are proper subparts of an event of Pat having walked home which are events of Pat having walked home, including all subparts of the walking event that terminate at home, regardless of their starting point. Faced with this difficulty, Krifka (1998) separates the notion of telicity from the notion of *quantization*, stating that while the latter implies the former, the former does not imply the latter, an unfortunate conclusion, as it leads one to wonder what the explanatory role of *quantization* might be.

Consider, however, the notion of *homogeneity* I proposed in Book I, Chapter 4, section 4, to resolve the problems associated with the paradigm in (32). I proposed, largely following Kiparsky (1996), that *homogeneity* be defined on the basis of cumulativity and divisiveness, the latter slightly modified from Krifka (1992), and requiring, specifically, every interval of P to be

¹⁷ And see Zucchi and White (2001) for some of these objections as well as others.

P. As such it is distinct from the definition of *divisive* put forth by Kiparsky (1998), (see (18a), which requires some part of P to be P)¹⁸

38. *P* is *divisive* iff $\forall x [P(x) \rightarrow \exists y (P(y) \wedge y < x)] \wedge \forall x, y [P(x) \wedge P(y) \wedge y < x \rightarrow P(x-y)]$

A *prima facie* impediment to the definition of atelicity (or unboundedness, or homogeneity) in terms of *divisiveness* as in (38) would be the fact that bare plurals, if analyzed as sets of singulars, are not *divisive* in the intended sense. I suggested, however, that 'plural' inflection, so called, does not mark the existence of a set of singulars, but rather, an infinite number of possible division configurations of mass, with any possible number of cells, including none and one. In turn, it is the task of the quantity function, projected as the head of the nominal quantity phrase, #P, to select from among the many reticules made available through the dividing function that function which matches its properties. Thus *three* would select a reticule which has three cells, thereby giving rise to three individuals, e.g. books. Further, I assumed that *some* or *several* would likewise select a reticule, that which corresponds, roughly, to the set of 'any (smallish) number (distinct from one)' (and see Book I, Chapter 4, section 3 for discussion of the principled exclusion of numeral *one* in this context).

Consider now again the application of the notion *divisive* as formulated in (38) to DPs specifically. *Books* is now *divisive*, as required, as there are no parts of *books* which are not *books*, *a book* no longer being part of *books*. On the other hand, all plural selecting quantifiers, including cumulative ones, such as *some NP*, *many NP*, *several NP*, *more than three NP*, *at least three NP*, etc. are indeed sets of singulars and hence non-*divisive*, in the required sense, as they all have individuals associated with them, as created by the reticule-selecting function of *three*, *several*, *many*, *some*, etc. In turn, as they are not *divisive*, they may give rise to a telic interpretation, if we assume, along the lines of the rationale established in Kiparsky (1996, 1998), that a bound or telic interpretation is to be defined in terms of the failure of *homogeneity*, or *unboundedness*. A similar rationale applies to all the cases in (32). As I noted in Book I, Chapter 4, in a language such as English (or for that matter, any language which has determiners in the functional lexicon capable of assigning range to [_{DP} <e>#]), the strict correlation between the presence of an overt determiner and the emergence of a non-homogenous reading provides independent evidence not only for the presence of the specific execution proposed here, but also for a system in which realized syntactic structures largely underlie semantic interpretation.

Assuming that cumulativity is part of the picture here, note that the notions *non-divisive* and *quantized* are distinct in the following way. While Krifka's *quantization* is only met if no proper part of an *x* that is *P* has the property *P*, *non-divisive* reference may be met even if there are proper subparts of *x* with the property *P*, provided that there is at least one such subpart which when subtracted from *x* gives rise to a proper part of *x* which does not have the property *P*.

Suppose, then, that we replace the notion *quantization* as proposed by Krifka with a weaker notion, labeled *quantity*, as defined in (39).

¹⁸ The reader should recall that the definition of *divisive* in (38) is altered slightly from that proposed by Krifka, (1992), in order to bypass at least some questions concerning the minimal parts problem, see Book I, Chapter 4, section 4 for some comments.

39. a. *quantity*: P is a *quantity* iff P is not homogenous
 b. P is homogeneous iff P is cumulative and divisive
40. a. P is cumulative iff $\forall x [P(x) \wedge P(y) \rightarrow P(x \cup y)]$
 b. P is divisive iff $\forall x [P(x) \rightarrow \exists y (P(y) \wedge y < x)] \wedge \forall x, y [P(x) \wedge P(y) \wedge y < x \rightarrow P(x-y)]$

We may now dispense with the need to define telicity distinctly from *quantity*, and rather reduce the former to the latter. The cases which proved problematic for Krifka (1992, 1998) are now tractable. In these cases, predicates as well as DPs that were non-*quantized* turn out to be *quantities*, and hence to give rise to telicity, as required. To illustrate, *run to the store*, *more than three books*, and *some books* are all *quantities*, as none of them are homogeneous. Further, consider again our event of continuing to fill a room with smoke past some conventional, agreed-upon point counting as full, as discussed in section 2. In this case, there clearly is a sub-event of the filling which is likewise a filling of the room with smoke, i.e., if the filling commenced at point 1 and ends at point 100, the event transpiring from point 2 to point 100 is a filling of the room with smoke, but its subtraction from the 1-100 event would give rise to a proper part which is not, itself, a filling of the room with smoke, quite regardless of the fact that the filling event may continue past the point of *full*. The predicate, then, is non-homogenous, or *quantity*, and is telic as predicted,. Finally, the fact that an event falling under *build a house* (under a non-activity interpretation) may involve actions which cannot be measured by the progression of the house, or the fact that an event falling under *read a book* (under a non-activity interpretation) may consist of re-readings of some of its portions, is quite simply irrelevant. As both events must include sub-events which do not fall under *build a house* and *read a book*, respectively, and which can be obtained by subtracting sub-events that do from the main event, both predicates are *quantities*, and hence telic.

We note, finally, that Kiparsky's (1998) *boundedness* does not face problems in at least some of these cases, notably *run to the store* and the like, in which both cumulativity and quantization fail. This is because telicity, or boundedness, emerges if either cumulativity or divisiveness, in Kiparsky's sense, fails. While the predicates in (37) are divisive, by Kiparsky's definition, they are not cumulative, and hence a bounded reading is predicted, as necessary. A more tricky issue for *boundedness* is presented by *fill the room with smoke*, with the filling event progressing beyond the full point, or *eat more than three apples*. Thus both are divisive by Kiparsky (1998) (as both include some sub-interval which is *fill the room with smoke* or *eat more than three apples*, and both are cumulative, as both, when non-maximal, include a superset event which is *eat more than three apples* or *fill the room with smoke*. It thus emerges not only that both cumulativity and divisiveness are required to properly define *quantity* (and telicity), but that the notion of divisiveness must be essentially like that originally proposed in Krifka (1992) (and used in Kiparsky, 1996), and not its modification in Kiparsky (1998).

The weakening of the condition on telicity is not without consequences. Note that such a notion of telicity is incompatible with the complete mapping of sub-events to sub-parts of the object, and the converse, argued for by Krifka (op. cit). On the other hand, we also noted that the complete mapping between sub-events and subparts of the object is not without its own problems. More importantly, if the mapping (10c-d) is abandoned, we no longer predict that a telic event must culminate when the object is exhausted, so to speak. Therefore, this notion of telicity does not predict co-finality, or for that matter, co-initiality. Rather, it suffices that there be some sub-part of an event with the property P which is not itself P . We note that any

reference either to the final point of the event or its initial point is sufficient to establish a sub-interval within P which is not P , specifically any interval which excludes either the initial or final point, and hence any specification of an initial or final point will immediately give rise to telicity. If, however, some intermediate point within the event should turn out to be sufficiently well differentiated from the rest of the event, in involving, specifically, the (sub-)culmination of some sub-event, we predict the emergence of a telic reading without co-finality.

Consider, in this view, the paradigm in (41):

41. a. Kim ate more than enough meat
 b. Robin read at least three books
 c. We filled the room with smoke

We do not actually know how much meat Kim ate, or how many books Robin read. What we do know, however, is the point at which the predicates in (41) become non-homogenous. As soon as Kim ate enough meat, regardless of whether or not she proceeded to eat, the event became non-homogenous, and hence telic. As soon as the room became full of smoke, according to whatever definition of 'full of smoke' is in effect, and regardless of whether or not the filling proceeded, the event became telic. It is, in fact, entirely consistent with a situation where the sub-event that follows, e.g., the eating of more than enough meat, is not itself a culminating one (in the *aktionsart* sense), in that the final amount of meat eaten remains immaterial for the truth conditions, just as how far John ran is immaterial for the truth conditions of *John ran*. Co-finality, then, becomes a special case of telicity. We submit that it has become such a dominant criteria in the discussion of *aktionsart* due to the prevalence of the *in x-time* test for telicity, which, while certainly testing telicity, is also testing telicity of a very particular kind, namely that which arises at the very end of the event. In sections 1-2 of Chapter 16 I touch briefly upon cases which are *quantity*, by the definition in (39), but where *quantity* is induced by an initial state, and no final point is specified or entailed. The existence of such cases, together with the successful application of telic diagnostics to them, will provide further support for the modified approach to telicity put forth here.

4. Scalar Representations and Telicity

In recent articles, Hay, Kennedy and Levin (1999) and Kennedy and Levin (2000) put forth a proposal linking telicity to scalar representations. More specifically, they propose the following:

42. The scalar structure of the degree of change determines the telicity of the predicate, since the terminal point of the entire event corresponds to the sum of the degree to which the affected argument possesses the measured property at the beginning of the event plus the degree of change δ (emphasis mine, H.B.)
- a. If δ is *quantized* (has a maximal value) an endpoint for the event can be identified, and the predicate should be telic.
- b. If δ is not *quantized* (does not have a maximal value), an endpoint of the event cannot be identified (based on the semantics of the predicate), and the predicate should be atelic.

Before I turn to the evidence in favor of the view of telicity in (42), note that defining telicity in terms of the scalar structure of the predicate is fully compatible, indeed, is a specific articulation, of the view put forth here according to which telicity emerges as a result of the

predicate being quantity, where quantity is understood in terms of quantified divisions.¹⁹ And yet, as formulated, the conditions in (42) present a bit of a puzzle. Specifically, we note that a degree of change can be fully identified and measured even if it is not maximal. With respect to the underlined portion of (42a), then, it is not clear why the measurability of change, as expressed through the measured property at the beginning of the event, plus the degree of change, must coincide with the terminal point of the entire event. In actuality, it does not follow from the scalar structure of *degree-of-change* predicates, nor is it necessary to give rise to measurable change, and represents an independent stipulation within the view in (42), which, we submit, is unnecessary. To consider some examples already discussed, formulating previous observations in terms of *degree of change*, we note that for examples such as *eat more than three apples*, or *fill the room with smoke*, a degree of change is measurable, although it need not coincide with the terminal point of the entire event. Specifically, if we view the eating of apples as having a scalar structure, determined, in this case, by the quantity properties of the direct object, as already argued, we note that it is perfectly easy to measure the *degree-of-change* in the 'affected object', the apples, precisely to the point at which three apples were eaten, but not beyond that, illustrating clearly that the coincidence of measurability and the terminal point of the event is but a special case of telic interpretation. Likewise, the degree to which the room is full of smoke is measurable at the point at which it can be defined as *full of smoke*, although filling may proceed past that point, and the final amount of smoke in the room beyond whatever it takes to qualify as *full*, may not be measurable. The replacement, in (42), of *quantized*, with its implication of maximal point, with *quantity*, as defined here, requiring rather than a maximal point, quite simply a well-defined point with respect to which a *degree-of-change* could be measured, is thus both conceptually and empirically warranted.

Adopting, then, the perspective that degree-of-change, as defined on the basis of quantified event divisions, is the essence of telicity, but disagreeing with the assumption that the point of measurement is the event terminus, suppose we omit the underlined portion of (42), and reformulate (42a-b) as in 43:

43. a. If δ is *quantity* (has quantified divisions) a measuring point for the degree of change can be identified, and the predicate should be telic
 b. If δ is not *quantity* (does not have quantified divisions), a measuring point for the degree of change cannot be identified and the predicate should be atelic.

Having adopted a slightly modified version of this important insight into the nature of quantity predicates, consider now the way in which the account presented here differs from the perspective put forth by Hay et al. (op. cit.) and Kennedy and Levin (op. cit.). Crucially, for Hay et al. (op. cit.) and Kennedy and Levin (op. cit.), the existence of a degree of change derives primarily (although not exclusively) from the lexical semantics of the verb. As such, their perspective is an articulation and a modification of notions such as *path*, or [+ADD TO], which have been put forth as a lexical semantic characterization of verbs which may give rise to a telic interpretation. Studying in great detail the properties of de-adjectival verbs, and following the work of Hay (1998) and Kennedy and McNally (1999), they propose that quantized degree of change (de-adjectival) verbs inherit from the source adjective both their

¹⁹ Although scalar structures may turn out to be a special case of quantity predicates. We leave this issue aside.

scalar properties and the existence of a well-defined terminal point (the property of being a closed scale). To illustrate, while gradable adjectives such as *straight*, *empty*, *dry* etc. have a maximal value (and are hence closed-scale adjectives), this is not the case for, e.g., *long*, *wide*, *short*, etc. which are *open scale* adjectives, in that there is no maximal value for length or for width (and see references for the relevant tests). Thus the verb *straighten*, derived from the gradable, closed-scale adjective *straight*, gives rise to telic predicates, while the verb *lengthen*, derived from the gradable, open-scale adjective *long*, gives rise to an atelic predicate, as illustrated by the following contrasts:

44. a. they are straightening the rope \nRightarrow they have straightened the rope (telic)
 b. they are lengthening the rope \Rightarrow they have lengthened the rope (atelic)

Consider now this picture from the perspective an XS-approach. I have argued consistently that telicity, as such, could not come from the lexical semantics of particular listemes, regardless of whether or not they are categorized as verbs, adjectives, or otherwise, but rather, that it emerges from a particular grammatical structure which creates a *quantity* predicate. The *quantity* predicate, in turn, is licensed through the assignment of range to a functional head [_{ASPO} <e>#], which is accomplished through formal grammatical means that are entirely oblivious to the specific meaning of (substantive) listemes embedded within the structure. At the very best, such listemes could be viewed as modifiers of particular structures, giving rise to conceptual felicity, or lack thereof, as depending on the degree of conflict between the meaning of such concepts, extra grammatically determined, and the interpretation returned by the computational system. It is thus clear that any view that attributes the telicity of, e.g., (44a) to the lexical semantics of *straight* cannot be adopted here. It would thus appear, at least at first sight, that the existence of effects such as those in (44), and the extent to which they do correlate with the perceived interpretation of the source adjectives, serves as a counter-example to the account developed here, and to the XS-approach in general.

But what appears problematic at first sight, upon closer investigation turns out to be an asset. Kennedy and Levin (2000), in pursuing the implications of their view, do note that context plays an overwhelming role in actually determining the telicity, or lack thereof, of predicates with de-adjectival verbs. Thus alongside (44a-b), they acknowledge the existence of (45a-b):

45. a. The tailor is lengthening my pants \nRightarrow the tailor has lengthened my pants
 b. They straightened the rope, but not completely

To these cases in which the lexical semantics of the source adjective seems to under-determine the emerging value of the predicate, we may add the following:

46. a. The workers straightened the fence on Monday and on Tuesday (one event)²⁰
 b. The workers straightened the fence for several hours
 c. I emptied the pool for several hours this morning, but it is still not completely empty
 d. The apple reddened for several days and then it dropped before it was actually red
 e. We allowed the apple to ripen for several weeks, but we actually picked it before it was completely ripe

²⁰ See Verkuyl (1989) for the relevant test, distinguishing a possible single event reading for atelic events vs. an obligatory two-event reading for the minimally contrasting case in (i):

In commenting on this, Kennedy and Levin (op. cit.) note that when degree-of-change is explicitly provided by linguistic material, rather than by the lexical semantics of the verb or adjective in question, telicity is not cancelable:

47. a. *They straightened the rope completely, but the rope isn't completely straight
b. *They widened the road 5 meters, but the road didn't increase in width by 5 meters.

Unfortunately, the conclusion they reach on the basis of this is that “telicity is not strictly determined by the linguistic representation”, a conclusion which in actuality is inconsistent with the fact that telicity in (47) cannot be cancelled. The conclusion, I believe, should be that telicity *is* determined strictly by linguistic representation, but that the meaning of listemes is not a linguistic representation. Consider how such an account could be executed. Telic, quantity predicates would project an $[_{ASPQ} \langle e \rangle \#]$, thereby imposing a scalar structure, with measurable degree of change, on the event under consideration. In turn, no such quantity structure is available for atelic predicates, in which some progression may still be implied, but in the absence of a quantity structure, without well-defined points for measuring it. Within the XS model, the actual listemes embedded within these respective structures, recall, are fundamentally modifiers, rather than determinants of the structure. They do, however, have meaning, as determined by their salient contextual and conceptual properties. Thus our concept of *straight* does have an absolute maximal value, (in turn coercible, as with all other concepts), while our concept of *crooked* does not, *dry* has conceptually a maximal value, while *wet* does not.²¹ A case of embedding a form such as *straighten* (already verbalized, we note, but still devoid of any argument selecting properties) in the context of non-quantity structure is thus a clear case in which the conceptual system returns a measurable interpretation, but the grammar returns an unmeasurable one. Likewise, *lengthen* embedded in a quantity context, even without any additional measurement information provided, is a case of the conceptual system returning an unmeasurable interpretation, while the grammar returns a measurable one. Both of these cases are neither more nor less complex (and are in actuality considerably less extreme, in terms of their effect) than other cases of grammatical-conceptual conflict, e.g., *three bloods* and *much dog*, which are extremely odd without a context, and much improved when a supporting one is provided (and see book I, Chapter 4, section 2 for an extensive discussion).

When viewed from this perspective, the uncancelability of telicity in (47) emerges directly from the fact that in these cases the *grammar*, rather than the lexical semantics of any particular listeme, has forced the projection of telic structure. Assuming, rather straightforwardly, that the syntactic/functional constituent DegP, presumably dominating *completely*, as well as *five meters*, is a modifier of ASP_Q , i.e., a modifier of *quantity*, its presence forces the projection of quantity in (47a-b), with the impossibility of canceling telicity as a consequence.

I therefore conclude that while Hay et al (op. cit) and Kennedy and Levin (op. cit.) have uncovered an important property of telicity here, they are mistaken in assuming that this

i. the prospectors found gold on Sunday and on Monday

For a detailed discussion of obligatory telicity, as in (i), see chapter 19.

²¹ And we note here the clear divergence of the conceptual system from physical reality, where a notion such as *dry* is just as relative as the notion *wet*, and where absolute *dryness* is a virtually impossible condition to meet on the surface of this particular planet.

property emerges from the lexical semantics of listemes, as well as in concluding, as is inevitable from their perspective, that telicity is not strictly grammatical. Quite contrary to their conclusion, I believe, telicity *is* strictly represented by the grammar. It is the meaning of listemes which is not thus represented.