

Yuan-Lung Shih, BA Hons.

Supervised by Mr. Sean Alan Bowerman

Applying Vendler's verbal categories to Mandarin
Chinese and issues in telicity

Dissertation submitted to the Faculty of Humanities, University
of Cape Town, in partial fulfilment of the requirements for the
degree of Master of Arts in the Linguistics Section of the
Department of English Language and Literature.

Date: 29th November 2006

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

Acknowledgements

I would like to take this opportunity to thank my supervisor Mr. Sean A. Bowerman for his untiring efforts in guiding me throughout the dissertation and to Prof. Raj. Mesthrie for he opened the gate for me to study in linguistics. I also want to thank my parents for the financial assistance and my family for their unlimited support.

I hereby declare that this is my own work in conception and execution. Any opinions expressed or conclusions reached are my own, unless otherwise indicated.

Signed by candidate

May 2007

Abstract

Two different but related topics are addressed in this dissertation. The first concerns the ambiguous status of Vendler's activities in situation classification. Activities resemble states in terms of homogeneity but differ from events in terms of telicity. Also, activities resemble events in terms of heterogeneity but differ from states in terms of dynamicity. Classifying activities under either global category will result in contradictions. I propose to establish activities as neither a subcategory of global states nor that of global events, but an independent global category.

The second topic concerns the issues of telicity in Mandarin Chinese (MC). Tai (1984, 2003) argued that MC lacks accomplishment and achievement verbs and, therefore, telicity is derived only if a resultant predicate is overtly expressed. Lin (2004) made similar arguments – he claimed that except for a few cases, there are no monomorphemic telic verbs in MC. I argue that there are monomorphemic telic verbs in MC and they are the 'incremental-theme verbs'. When these verbs have quantified nominal complements, they are telic. They do not need an over resultative complement to express telicity. The addition of resultant predicates will be semantically redundant if we have a quantized VP modified by perfective viewpoint aspect (PVA). Although the addition of a resultant state does not affect the grammaticality, it merely specifies what the result is, and is irrelevant to affect the conditions for telicity. Consequently, the claim that the overt expression of resultant predicates is the only way to derive telicity in MC is too strong.

Contents

	Acknowledgement.....	ii
	Abstract.....	iii
1	Introductory.....	1
2	States, Processes and Events.....	14
2.1	A survey of situation classifications.....	15
2.1.1	From Aristotle to Vendler.....	15
2.1.2	Comrie.....	20
2.1.3	Mourelatos.....	23
2.1.4	Parsons.....	27
2.1.5	Moens and Steedman.....	28
2.1.6	Herweg.....	31
2.1.7	Smith.....	36
2.1.8	A short conclusion.....	38
2.2	Applying processes.....	43
2.2.1	Processes are not absent in achievements.....	43
2.2.2	Reanalyzing Dowty's Imperfective Paradox.....	46
3	Applying telicity to Mandarin Chinese.....	51
3.1	Krifka: thematic relations as links between nominal reference and temporal constitution.....	52
3.2	The compositionality of telicity.....	58
3.3	Reanalyzing telicity in Mandarin Chinese.....	66
4	Conclusion.....	86

Chapter 1 Introductory

Verkuyl (1993: 40) points out that Vendler's (1957) categorization of verbs (in terms of states, activities¹, achievements and accomplishments is influential in the subsequent development of aspectology. He explains the widespread influence of Vendler's categories from the view that myriad human experiences in the real world can be classified by linguistic criteria and the resulting categories can show insights of how human beings perceive the world from the prism of linguistic rules (p. 39). Some situations² last a long time, some last a short time; some become different situations at the end, some remain unchanged; some need time to develop, some happen in an instant. In language, we have different devices to express them, for example, progressives serve to indicate that a situation is happening; perfectives to indicate that a dynamic situation³ takes place completely; resultatives to indicate that a situation changes and becomes a new situation, and so on. Now we can correlate situations in the real world and their linguistic expressions (that is, verbs and verb-related issues) on the one hand, and correlate the linguistic expressions and the linguistic devices exemplified above, on the other. Since in the latter both are in the same realm, it is possible to compare verbs according to various linguistic criteria (*ibid.*). Vendler (1957)⁴, for instance, uses progressives (or continuous tense in his term) to distinguish between verbs that admit it and those that don't. This is how Vendler's first two primary categories are born⁵. Verbs that admit progressives are activities and

¹ Please note that activities and processes are interchangeable in this dissertation.

² This term in this dissertation serves to be the umbrella term for Vendler's four categories. In this context, it refers to the real world situations from which Vendler's categories are reflected.

³ This term refers to events, that is, non-static situations. This will become clear at the latter stage.

⁴ Vendler's paper was originally published in *The Philosophical Review* (1957: 143 – 160). The version used here is extracted from Schopf (ed.) (1974).

⁵ Vendler did not spell out what these two primary categories are. Verkuyl and Binnick note that Vendler's classification has its origins in Aristotle's *Metaphysics*, so there must be some connections between these two primary categories and Aristotle's *energia* and *kinesis*. I thus assume that Vendler's states and achievements are connected with *energia*, and his activities and accomplishments with

accomplishments; those that do not are states and achievements. From here, Vendler subdivides the former in terms of STP (set terminal point, or climax 1974: 219), so we have activities (without a STP) and accomplishments (with a STP). As Vendler's subdivides the latter in terms of duration, we have states and achievements. States last a long time while achievements are momentary (p. 221).

Linguists following Vendler apply his verbal categorization in their own specific language, and as Verkuyl observes, 'even though the specific linguistic criteria may vary across different languages, every language can produce congenial criteria so as to give the Vendler-quadrupartition a solid grounding' (1989: 39). I found one general direction in the subsequent works extending from Vendler (1957): linguists first redefine what linguistic criteria necessarily are and then test the supposed criteria in a specific language. In the course of categorical refinement, new terminology develops for the purpose of distinguishing from Vendler's own; and if these are inadequate, more categories are added. Vendler's quadrupartition seems to be the source of inspiration, and this is evident in Mourelatos (1981), Moens and Steedman (1988), Smith (1991), Krifka (1992)⁶ and Parsons (1994). Whether they agree or disagree with Vendler's categorization, Vendler's quadrupartition or its equivalent is consistently applied. Tai (1984) was the first Chinese linguist to apply Vendler's quadrupartition to Mandarin Chinese (MC), but surprisingly, his findings show that accomplishments and achievements are lacking in MC. Twenty years later, Lin (2004)⁷ points out that Tai's MC data merely suggest that the so-called accomplishments and achievements are actually 'verbal compounds or unbounded activities that do not encode explicit end points or end states' (2004: 55). Lin

kinesis.

⁶ Please see # 2 in Internet Bibliography.

⁷ Please see # 4 in Internet Bibliography.

considers Tai's findings not explicit, so he takes a step further by formalizing Tai's findings and summarizes it in (1):

- (1) (a) For the most part, activity and state are the only two primitive verbal types in Mandarin Chinese. As a general rule, change of state predicates (accomplishments and achievements) are derived syntactically.
- (b) With very few exceptions, no monomorphemic verbs in Mandarin are telic – no monomorphemic verb encodes a result, a natural end point, an end state, or the attainment of a goal.
- (c) The particle *le* signals inchoativity.
- (Lin 2004: 53)

A good example of Lin's is the contrast between activity verb *look for* 找 zhǎo and achievement verb *find* 找 zhǎo 到 dào (Lin 2004: 61). The English *find* is what Lin refers to as 'monomorphemic telic verb' and, according to Lin's (1b), its equivalent is absent in MC. 找 zhǎo *look for* consists of only one morpheme, whereas 找 zhǎo 到 consists of two morphemes. We can easily note that both have an identical, underlying character 找 zhǎo. Lin's claim in (1b) says that this monomorphemic character 找 zhǎo is not telic and if it has to be, it must be derived from the combination with 到 dào *arrive*. The second character 到 dào *arrive* specifies the successful attainment of the goal⁸. Lin (2004: 61 – 62) notes that this morpheme 到 dào *arrive* is productive, so he attempts to explain it from the syntactic derivations of resultatives in his dissertation. Not only Lin, but also Shi (1988: 59) cited in Lin (2004: 55) similarly argues that in

⁸ I think *arrive* has a meaning of 'reaching the desired destination' and this is why it is connected in this context. The use of *arrive* in MC could be connected to the discussion of endpoints in the literature (cf. Smith 1991). In MC 到 dào could be the lexicalized, overt expression of endpoints; hence it is associated with telicity.

languages states and activities are the ‘only’ two primitive verbal categories, while accomplishments and achievements are complex categories.

Lin’s claim in (1a) is built from Shi. As we can see from Tai (1984; 2003), Shi (1988) and Lin (2004), there seems to be a tradition in Chinese linguistics that challenges Vendler’s quadripartition. If we follow them and apply (1) to 蓋 *gài* *build*, 寫 *xiě* *write*, and 畫 *huà* *paint* – the Chinese equivalents of Vendler’s canonical accomplishment verbs – we might agree that unless we add a resultative complement like 完 *wán* *finish* to denote the termination, there are no sources provided for deriving telicity. These authors consider these single character verbs to be inherently atelic. The verbs are thus not accomplishments but activities, and from here, we could question the universality of Vendler’s categories and suggest that Vendler’s categories are language specific (e.g. English and its family). This is why almost two decades later, Tai (2003)⁹ advances linguistic relativism by arguing that ‘English speakers tend to attend relatively more to the process of an event, but, in contrast, Chinese relatively more to the result’ (2003: 311). One of my aims in this dissertation is to show that Lin’s claim (1b) is too strong to capture the complex aspectual interactions between the mass-count properties of nouns and telic-atelic properties of verbs. What these properties refer to will become clearer when I discuss the aspectual compositionality, especially in connection with Mourelatos (1981), Verkuyl (1989) and Krifka (1992).

A different approach to Vendler is Verkuyl (1972, 1989, 1993). Unlike the above-mentioned Chinese linguists, who tested Vendler’s categories in MC and found that his accomplishments and achievements do not fit well, Verkuyl seems to indicate

⁹ Please see # 6 in Internet Bibliography.

Vendler's quadripartition is unnecessary. 'I proposed that aspect be "taken away" from the verb and be assigned to higher levels of sentential structure' (Verkuyl 1989: 40). Verkuyl's strategy is to compose aspect at the sentential level: aspect is the result of the sentential components (i.e. verbs, internal and external arguments, adjuncts...etc.). Because of this, a predefined category according to some fixed linguistic criteria does not help here: a predefined verbal category will be dissolved eventually when all components are taken into aspectual calculation. Verkuyl's suggestion reduces the necessity of categorizing lexical items at the verb level. Following Verkuyl, one could say that categorization at the verb level becomes meaningless as the overall aspectual composition overwrites the categorization at any level below the sentential level. It is thus not necessary to classify verbs into different categories by formulating criteria, but it is necessary to capture the compositional conditions or properties that co-determine the overall aspectual interpretation. For Verkuyl, formulating aspectual compositionality and establishing Vendler's quadripartition of verbs are not compatible. 'In my view, these two things cannot be married as they are incompatible: if aspect formation is a process at a structural level it is hard to see how a lexical division can be maintained' (*ibid.*).

A short history of the studies in aspect is outlined in Tenny and Pustejovsky (2000: 4 – 7). Tenny and Pustejovsky rightly comment that verb meanings have aspectual and temporal structure and this can be traced back to Aristotle's *Metaphysics*¹⁰ (p. 4). Ryle (1949) and Kenny (1963) discussed the ontological distinctions between Aristotle's *energia* (states) and *kinesis* (events) first in philosophy and 'from there they found their way into the linguistic literature' (p. 5). Vendler's temporal schemata (1974: 223 – 224) is the attempt to categorize verbs in terms of different temporal

¹⁰ In particular, the passage in *Metaphysics* 1048b. 18 – 36 (Aristotle 1933: 449).

structures. Following Tenny and Pustejovsky's interpretation of Vendler's temporal schemata, verbs that have 'temporal duration' (*ibid.*) are activities and accomplishments, and those that lack it are states and achievements. Activities and accomplishments are distinguished further in terms of 'temporal termination' (*ibid.*). Activities such as *walk* do not have temporal termination, so they are ongoing situations. Accomplishments such as *build* have temporal termination, so they will reach an endpoint. States differ from achievements in terms of 'internal change' (*ibid.*): states such as *be happy* remain unchanged while achievements such as *reach the summit* undergo changes within the time span. Classifying verbs in terms of temporal duration, temporal termination and internal change within the time span reflects that Vendler considers time to be an inherent property of verbs and weighs temporal factors higher than any non-temporal factors. According to Tenny and Pustejovsky, in the subsequent development of aspectology, temporal structure gives way to non-temporal structure:

It is also now generally accepted that we must talk about the aspectual properties of the verb phrase or the clause, rather than simply the aspectual properties of the verb, since many factors including adverbial modification and the nature of the object noun phrase interact with whatever aspectual properties the verb starts out with. (Tenny and Pustejovsky 2000: 6)

Linguists have been gradually aware of the fact that the aspectual properties of verbs alone are not sufficient to determine the aspectual properties of VPs or the entire sentence. Factors such as adverbial modification (e.g. Dowty's in- α -time *versus* for- α -time test cited in Tenny (1994: 5 – 6)), the property of the internal argument (e.g. mass or count, definite or indefinite, and Accusative *versus* Partitive Case) should be

taken into account for telicity. This is evident in Verkuyl (1972, 1989, 1993).

Verkuyl's compositional aspectual theory (1989: 79) captures the interactions between the verbal properties [\pm ADD TO], the nominal properties [\pm SQA]¹¹ and their results [\pm T] (Termination). Verkuyl (1989: 79 – 81) shows that only [+ADD TO] and [+SQA] result in [+T], otherwise [-T]. [+T] refers to terminative and [-T] refers to durative in Verkuyl's terminology (*ibid.*). Verkuyl identifies his [+ADD TO] as Vendler's [+Process], and he uses Vendler's definition of processes 'successive phases following one another' (Vendler 1974: 219) for [+ADD TO] (p. 81). This means that verbs that possess [+ADD TO] have successive phases following one another, and [+ADD TO] is the property due to which we can divide and add up the internal phases of a situation described by such verbs. Verkuyl's example *walk* (p. 81), for instance, possess [+ADD TO], because one's walk can be divided to several successive phases (e.g. walk to the bookshop, then walk to the grocery...etc.) and every distance can be added up. On the other hand, the nominal property [+SQA] stands for 'Specified Quantity of A' (*ibid.*). The property [+SQA] pertains to all quantized DPs. Verkuyl's example *four tables* (p. 82), for instance, possess [+SQA]. Mass nouns or bare plurals lack [+SQA]. It is thus certain that Verkuyl's terminative and durative correspond to telicity and atelicity respectively, the more widespread terms discussed in the literature.

Verkuyl is not alone in advocating for aspectual composition. Krifka (1992, 1998) similarly argues that telicity and atelicity are the result of the interactions between the nominal reference (nominal domain) and temporal constitution (verbal domain). Still,

¹¹ Please note that SQA stands for 'Specified Quantity of A', and A is the 'interpretation of the Noun Phrase' (Verkuyl 1989: 81).

Krifka (1992) makes use of Vendler's quadripartition when discussing the temporal constitution of the verbal domain. Unlike Verkuyl, Krifka explains telicity from the perspective of mappings between events and objects. Two results can be derived from the mappings. After mappings, predicates can be cumulative or quantized. Only quantized predicates are telic. Garey (1957), Platzack (1979) as cited in Krifka (1998), Mourelatos (1981), Smith (1991), Tenny (1994), Van Hout (2000) and Thompson (2006) and many others work on the same direction of aspectual compositionality. As the trend of aspectual compositionality becomes more influential nowadays, one could question whether the aspectual composition of any kind should supersede Vendler's quadripartition.

Although Vendler orientated his classification of verbs on temporal schemata, some of his non-temporal factors cannot be neglected. I find that his 'set terminal point' (STP) or 'climax' (1974: 219) has significant linkage to Comrie's definition of telicity (1976), Moens and Steedman's culmination (1988), Smith's endpoint approach (1991) and Krifka's mappings between events and objects (1992). All authors above, except for Comrie, make use of Vendler's quadripartition in their work, though they extend the usage of the quadripartition not only to denote single verbs but also the entire VPs. From my understanding of the works of these authors, STP can be considered as an abstract endpoint where the successive internal processes of a situation eventually lead to an outcome, a new change of state. In the proposed event structure of Moens and Steedman (1988: 18), situations that possess a STP culminate, after which a consequent state is present to ensure the successful happening of the culminated situation. In Smith's endpoint approach (1991), telic situations have a natural endpoint

(or an inherent STP), while atelic situations have an ‘arbitrary endpoint’¹² (p. 29). Comrie describes Vendler’s STP as ‘a well-defined terminal point’ (1976: 45), and according to which, it is a criterion for telic situations. These connections are not accidental. Therefore, I would suggest that, while advancing aspectual compositionality on the one hand, it is not harmful to retain Vendler’s quadripartition to generalize verbs and characterize VPs. Perhaps it is more important to analyze the properties pertaining to each category than to merely label verbs and VPs in terms of Vendler’s quadripartition.

Besides STP, another of Vendler’s non-temporal factors is ‘homogeneity’ (1974: 220), which appears frequently in the literature. Mourelatos (1981) shows that the mass-count properties are inherently not only in nouns but also in verbs, and the correlation between nouns and verbs in terms of mass-count properties suggests that states are like mass nouns, e.g. *water*, intrinsically homogeneous, processes are like quantified mass nouns, e.g. *a cup of water*, which are homogeneous but individualizable, while events are like count nouns, e.g. *an apple*, which are heterogeneous and individualizable (p. 209 – 210). Herweg (1991) distinguishes between global states and global events wholly in terms of homogeneity and heterogeneity. Krifka’s explanations for cumulativity and quantization (1992: 33) are also related to Vendler’s homogeneity.

From the perspective of the authors above, properties distinguishing between categories are homogeneity, dynamicity, durativity and telicity. What these terms exactly mean will become clearer as the dissertation unfolds. Among these terms, I

¹² In Smith (1991: 29), her original terminology is natural final point and arbitrary final point respectively for telic and atelic situation types. I will use natural/inherent endpoint and arbitrary endpoint for the same purpose in this dissertation.

will highlight telicity and apply Krifka's mappings between events and objects to MC. Recall that earlier I have mentioned Tai's (1984, 2003) and Lin's (2004) challenges to Vendler's accomplishments and achievements. From my application of Krifka's quantization and cumulativity to MC, I will suggest that Tai's and Lin's claims are too strong to capture the aspectual interaction between incremental theme verbs, specified QPs and the perfective morpheme *le*. The term 'incremental-theme verbs' (Dowty 1991, Tenny 1994: 15 – 16) refers to verbs that have a Theme argument and the Theme argument undergoes changes incrementally, and such incremental changes 'correspond to the temporal progress of the event' (Tenny 1994: 15). Tenny's incremental-theme verbs are verbs of creation and consumption (*ibid.*); they are the canonical Vendlerian accomplishment verbs, so I could sense that incremental theme verbs typically bear Verkuyl's [+ADD TO] property. My specified QPs are quantized nouns and thus have Verkuyl's [+SQA] property. I will develop my arguments against Tai's and Lin's strong claims in chapter 3. At this stage, it is necessary to summarize where I agree and disagree with them.

- (2) My agreements with Tai (1984, 2003) and Lin (2004)
 - (a) States and processes are the two primitive categories in MC.
 - (b) Telic predicates such as accomplishments and achievements can be derived by resultative compounds.

- (3) My disagreements with Tai (1984, 2003) and Lin (2004)
 - (a) Monomorphemic incremental theme verbs exist in MC and they are inherently telic, without exceptions.
 - (b) Though (2b) is true, resultative compounds are not the only way to derive telicity in MC.

I will start chapter 2 with a survey of situation classifications. Tenny and Pustejovsky (2000: 5) note that various authors categorize Vendler's fourfold categories in different subgroups and the most basic distinction is 'between statives on the one hand and non-statives (events) on the other'. This most basic distinction is binary – situations are classified either as global states or as global events. It has been suggested that these two global categories are already fundamental in the contrast between *energia* and *kinesis* in Aristotle's *Metaphysics* (Binnick 1991). However, disputes occur in the literature over the ambivalent status of Vendler's activity class. Particularly, Herweg (1991) classifies activities under global states. Another group of authors, exemplified by Smith (1999), classifies activities under global events. From Herweg (1991) and Smith (1999), one can see that Vendler's activity class is a fuzzy area and I find it necessary to clarify this issue before advancing to aspectual compositionality of telicity.

Instead of arguing for the 'correct' status of activity class, I want to establish processes as an independent, primitive global category. To be honest, this idea partially comes from the passage (4) from Shi (1988: 59) cited in Lin (2004: 55) and partially from Pustejovsky's event structure of transition (1991). This idea also echoes Lin's claim in (1a), but our orientations are different. Whereas Lin's claim in (1a) applies to MC specifically, I want to suggest that that is also possible in languages.

(4) Shi's generalization

Achievements are basically states, but they differ from states in that they describe new states, i.e., change of state. Accomplishments are basically activities, but they differ from activities in that they encode causative activities.

(Shi 1988: 59) cited in Lin (2004: 55)

The term 'change of state' in Shi's passage above is linked to telicity in the literature. In Pustejovsky (1991: 56), telic situations (or Transition in his terminology) always have a change of state as the result of the developmental process. In Dowty (1991: 572), 'change of state' is one of the contributing properties for his PATIENT Proto-Role: PATIENT argument undergoes change of state, and what causes the PATIENT argument to undergo change of state is AGENT argument (*ibid.*). From here, we see that telicity is also relevant to argument structure.

This dissertation centres on telicity. Telicity is a central area in the studies of aspect, and from this central field several important topics extend, for example verbal classifications (Vendler 1957, Kenny 1963), aspectual compositionality (Verkuyl 1972, 1989, 1993), boundness (Jackendoff 1991, 1996; Depraetere 1995; Thompson 2006), endpoints (Smith 1991), culmination (Moens and Steedman 1988; Parsons 1994), mappings between objects and events (Krifka 1992, 1998) and perfectivity under event realization (Bohnenmeyer and Swift 2004). Actually, many of the above-mentioned topics overlap and form a complex web of interrelations. I will not provide a comprehensive review of all the related topics here, so I will have to narrow the scope of my research. Since stative predicates are inherently atelic, they are not very relevant to the discussions about telicity. I will delimit my scope by applying Krifka's cumulativity and quantization to contrast the different aspectual

compositionality between activity verbs and incremental theme verbs in MC. My aim is to show that Tai's (1984, 2003) and Lin's (2004) accounts for telicity in MC are too strong. To do this, I need to explain (i) in which circumstances resultatives are obligatory to express telicity and why, (ii) in which circumstances resultatives are not obligatory and why. Some puzzling problems occur, though they are not really related to the main contents of this dissertation (but they are related to argument structure and aspect). Nevertheless, I will point out the problems encountered during my research and give hints for future research in the conclusion.

Chapter 2 States, Processes and Events¹³

My focus in this chapter is not to establish linguistic criteria and classify verbs accordingly, but to explore the ambivalent status of Vendler's activities from various authors' classifications of predicates. Classifying verbs into different categories was popular and fruitful in 1970s and 1980s. Why research in this area again? I found it necessary to clarify the fuzzy status of Vendler's activities between states and events. Herweg's and Smith's opposite approaches to the classification of processes show that ambivalent status of processes is a major area of disagreement among linguists. To do this, I will make a survey of various authors' situation classifications first, compare their differences, and then conclude that processes should be classified neither under global states nor under global events. At the end of this chapter, I will attempt to connect progressives and processes, arguing that they share similar properties. My motivation for doing this is to solve Dowty's Imperfective Paradox (1977, 1979).

¹³ Please note that states refer to Vendler's states, processes to his activities and events here refer to accomplishments and achievements.

2.1 A survey of situation classifications

2.1.1 From Aristotle to Vendler

Verkuyl (1989: 39) notes that Vendler (1957) and Kenny (1963) ‘both go back to Aristotle for their inspiration’, and all the subsequent works on situation classifications have their root in Aristotle’s contrast between *energia* and *kinesis*. Let’s see Aristotle’s passage below:

For it is not the same thing which at the same time is walking and has walked, or is building and has built, or is becoming and has become, or is being moved and has been moved, but two different things; and that which is causing motion is different from that which has caused motion. But the same thing at the same time is seeing and has seen, is thinking and has thought. The latter kind of process, then, is what I mean by actualization, and the former what I mean by motion¹⁴.

(Metaphysics 1048b. 18 – 36 (Aristotle 1933: 449), cited in Binnick (1991: 143))

Aristotle’s examples of ‘see’ and ‘think’ can be linked to Vendler’s states: they are the same thing at the same time. ‘Build’ is Vendler’s accomplishment verb, as what is being built and what has been built is not the same thing. What is being built is an unfinished object, while what has been built is a concrete one. However, one can reject that Aristotle’s ‘is walking’ and ‘has walked’ are different things. According to Dowty’s homogeneity criteria (1979: 59) cited in Verkuyl (1989: 53), if V is an activity verb, then *x V-ed for y time* entails that at any time *x V-ed* was true. The

¹⁴ The term ‘actualization’ refers to *energia*, and motion to *kinesis*. In this thesis, the term *energia* refers to states, and *kinesis* to non-states (events).

entailment is true because the V is homogeneous in structure. If we follow Dowty's homogeneous criterion, *John was walking for one hour* entails that *John walked for one hour*, which also entails that *John has walked for one hour*. So, although modern situation classifications have their roots in Aristotle, modern scholars seem to differ from Aristotle in that activity class is 'homogeneous' in their treatment (*ibid.*). As we will see in my survey, modern linguists no longer talk about the differentiation between 'what is causing motion' and 'what has caused motion', but between culminated situations and non-culminated situations. The term 'culmination' (Moens and Steedman 1988: 16) is an inherent verbal property pertaining to verbs that have a natural STP. Now, we can move to Vendler's quadripartition.

Vendler's fourfold classifications of verbs are exemplified in (5) and his linguistic criteria can be summarized in (6) (1974: 218 – 224).

- (5) (a) States: *know, love, believe*
(b) Activities: *run, write, push (a cart)*
(c) Accomplishments: *run a mile, draw a circle, write a letter*
(d) Achievements: *recognize, reach the summit, find*

(Vendler 1974: 218 – 224 *passim.*)

(6) A summary of Vendler's methods (*ibid.*)

	STA	ACH	ACT	ACC
(a) What are you doing?	×	×	✓	✓
(b) What do you do?	×	×	✓	✓
(c) At what time did x V?	×	✓	×	×
(d) For how long did x V?	✓	×	✓	×
(e) How long did it take x to V?	×	×	×	✓

(STA: states; ACH: achievements; ACT: activities; ACC: accomplishments;

✓: appropriate; ×: not appropriate)

As (6a) shows, the admission of continuous tenses is the primary criterion for distinguishing states and achievements from activities and accomplishments. Following Vendler's explanation, activities and accomplishments have 'successive phases following one another in time' (1974: 219), while states and achievements lack this property. If a situation has this property, it makes sense to ask questions like (6b). Because of the successive phases following one another in time, we can decompose one's running, in Vendler's example, into several movements (lifting up right leg, dropping it and so forth), but we cannot decompose one's knowing something into several movements. This is how Vendler's global categories are born. Due to this criterion, states and achievements form one genus, while activities and accomplishments form the other.

Accomplishments and activities can be further distinguished in the sense of (6d) and (6e). There is an inherent STP (*ibid.*) in accomplishments, but this is not so in activities. The answer for (6e) reflects that the temporal length exactly delimits the STP. On the other hand, the answer for (6d) reflects that the temporal length is given but does not delimit the STP: the situation described can continue without being

interrupted. The contrast between situations with and without inherent STP is important. Following Vendler (1974: 219 – 220), if John ran for 30 minutes and then ran for another 15 minutes, the statement that John ran is true. If John drew a circle in 2 seconds, the length, 2seconds, delimits the STP: John's drawing finished at the STP and did not continue, unless he drew another circle (but this new event is not the same as the previous one).

(6d) tests whether a situation is homogeneous, and homogeneity is defined as 'any part of the process is of the same nature as the whole' (Vendler 1974: 220). Activities and states are homogeneous; accomplishments and achievements are not. Following Vendler's explanation (*ibid.*), if John wrote a letter in an hour, it is not true that John wrote the letter in the first quarter of that hour. Conversely, if John wrote for an hour, it is true that John wrote/ was writing in the first quarter of that hour. The predicate 'write a letter' is thus not homogeneous; hence accomplishments. Homogeneity applies to states as well. If it is true that John loved Mary for the last ten years, it is also true that, theoretically, at any point within the last ten years, John loves Mary.

The answer for (6c) reflects punctual situations, and Vendler distinguishes states and achievements in terms of duration. Achievements are punctual, whereas states can last for a period of time (p. 221). Because of this, in Vendler's system, achievements lack successive internal processes; they happen instantaneously and (6d) does not apply. As for Vendler's example 'reach the top at noon sharp' (*ibid.*), it is false that one reached the top at any time before noon sharp.

We can see that Vendler uses three criteria: (i) continuous tense criterion for distinguishing states and non-states, (ii) STP and homogeneity criteria for distinguishing activities from accomplishments in non-states, and (iii) punctuality criterion for distinguishing states from achievements in states. This can be seen in (7).

(7) Vendler's categorization

Situations			
global states		global events	
– continuous tense		+ continuous tense	
+ duration	– duration	+ STP	– STP
states	achievements	accomplishments	activities

What (7) fails to capture is the homogeneity criterion. As noted, homogeneity as a verbal property pertains to states and activities. Vendler could have classified states and activities under the same genus, but why not? If Vendler did that, I think, he would contradict himself by setting up the continuous tense criterion. This is the first problem I found, by which I am motivated to find out more about the discussions on states, processes and events in the literature. Herweg (1991), for instance, classifies states and activities under global states, due to the homogeneity criterion. Another instance, Mourelatos (1981) diverges from Vendler's by classifying activities, accomplishments and achievements under global events. So, although linguists in aspectology generally accept Vendler's terminology, not all linguists agree with Vendler's paradigm. Disputes occur, especially concerning the 'correct' status of activities. In the following subsections, I will focus on various linguists' distinctions between global states and events, and the struggle to classify activities.

2.1.2 Comrie

Comrie (1976: 41 – 51) distinguishes between the following: punctual and durative situations, telic and atelic situations, and state and dynamic situations. Concerning the punctual and durative distinctions, Comrie is explicit in that ‘punctual situations do not have any duration, not even duration of a very short period’ and ‘thus a punctual situation...has no internal structure’ (1976: 42). Comrie’s punctual situations are not very different from Vendler’s achievements, except that Comrie coins a new category, called ‘semelfactives’ (*ibid.*), for punctual and atelic situations. Comrie’s example ‘cough’ is a semelfactive in that its happening is punctual yet does not result from any change of state (atelic).

Concerning the telic and atelic distinctions, telic situations have a ‘process that leads up to a well-defined terminal point, beyond which the process cannot continue’ (p. 45), while atelic situations do not have such a property. Comrie’s ‘well-defined terminal point’, I think, is identical to Vendler’s STP and Smith’s ‘natural final point’ (1991: 29). Comrie (1976: 45 – 46) already indicates that telic situations are compositional: ‘situations are not described by verbs alone, but rather by the verb together with its arguments’ (p. 45). His contrast between *John is singing* (atelic) and *John is singing a song* (telic) shows that the presence of a verb’s argument will affect its telicity. In this case, the argument ‘a song’ provides a well-defined terminal point, so at the last note of the song, John’s singing will stop and not continue. The most interesting perspective in Comrie’s discussion of telic-atelic distinctions is the statement that, from his Russian examples, ‘a perfective form referring to a telic situation implies attainment of the terminal point of that situation’ (p. 46). In other words, if a telic predicate is modified by perfective viewpoint aspect (PVA), for instance, *wrote a*

poem, it means that the poem is not an unfinished object (i.e. it has been written up). Comrie's result from combining telicity and PVA generally accords with Bohnemeyer and Swift's default aspect (2004). Bohnemeyer and Swift's cross-linguistic data show that by default, telic predicates select PVA and atelic predicates select IVA in language.

Comrie's third distinction, state-dynamic situations, can be distinguished in terms of dynamicity. A situation is dynamic, i.e., will continue 'if it is continually subject to a new input of energy' (p. 49), while a situation is static if, 'unless something happens to change that state, then the state will continue' (*ibid.*). Comrie seems to indicate that states remain unchanged unless an external force changes them, and dynamic situations will not cease if there is an input of energy from the Agent argument. Comrie's states correspond to Vendler's states, his dynamic situations to Vendler's accomplishments and achievements (or global events in our terminology), but he differs from Vendler in the nature of processes. Comrie classifies activities such as *run* under dynamic situations, but he differentiates processes and events from the point that 'process means a dynamic situation viewed imperfectly, and the term 'event' means a dynamic situation viewed perfectly' (1976: 51). It thus seems to me that Comrie's processes and events differ only in terms of viewpoint aspect. We need to reconsider whether distinguishing processes and events in this way is appropriate.

Prior to his discussion of the triple distinctions in his book, Comrie discriminated between perfective and imperfective (1976: 16 – 40). Since dynamic situations consist of 'successive phases following one another' in Vendler's sense (1974: 219), these phases are what Comrie terms as 'internal temporal constituency' (1976: 3). A

situation can have a beginning, middle and an end stage in its temporal development. Comrie is precise in defining perfective as ‘without reference to its [a situation’s] internal temporal constituency: the whole of the situation is presented as a single unanalysable whole’ (*ibid.*). Conversely, following Comrie, imperfective can be defined with reference to a situation’s internal constituency, such that only a stage of a situation is highlighted. Comrie’s definition of perfective and imperfective are is not problematic. Nevertheless, according to his definition of events and processes above, I found it problematic that events and processes are both dynamic but only viewed differently. This sound like processes and events refer to the same situation, and when the entire situation is viewed, it is an event; otherwise, it is a process. *Swim*, for instance, behaves differently under PVA and IVA. Under PVA, as in *John swam to the shore*, following Comrie, John’s swimming is telic due to the well-defined STP (the shore). Under IVA, as in *John swam in the sea*, John’s swimming is atelic due to the lack of the STP. John could swim in the sea for as many hours as he wants to. Also, when viewed as IVA, it could mean ‘John was swimming in the sea’ as well. Would the former *swim* in PVA and the latter in IVA refer to the same dynamic situation?

We have seen that activities and accomplishments are distinguished according to Vendler’s STP criterion. In our ‘swim’ example above, the former is telic and can be considered as an accomplishment, while the latter is atelic and can be considered as an activity. Judging from Vendler’s STP criterion, it is not appropriate to classify activities and accomplishments under the same group. This is why I found Comrie’s connections between processes and events problematic. Smith (1991: 5) distinguishes between lexical aspect from viewpoint aspect: whereas situation types (i.e. Vendler’s quadripartition) formed by non-temporal factors such as verbs and their argument structure fall into the domain of lexical aspect, PVA and IVA realized by aspectual

morphemes are relevant to time and fall into the domain of viewpoint aspect. According to Smith, although situation type and viewpoint co-occur, ‘the two types of information are independent’ (*ibid.*). One could follow Smith and argue that viewpoint aspect alone cannot determine situation types. On the other hand, even though it is true that processes and events are both dynamic, it is not true that they are necessarily the same dynamic situation.

I summarize Comrie’s categorization in (8).

(8) Comrie’s categorization

situations		
static states	dynamic	
	imperfective processes	perfective events

2.1.3 Mourelatos

Mourelatos’s situations (1981: 201) comprise states and occurrences, occurrences comprise processes and events, and events comprise developments and punctual occurrences. Mourelatos’s states and occurrences are our global states and global events. Mourelatos classifies processes (activities) and events (accomplishments and achievements) under the global events. Mourelatos thus resembles Comrie in that he treats processes and events under global events (though they differ in details) and differs from Vendler in that he does not classify states and achievements under global states. Mourelatos’ categorization is represented in (9). The term, ‘performances’, in this table originates from from Kenny (1963). Kenny (1963: 174 –

179; 182 – 186) cited in Mourelatos (1981: 194) argues for triple partition – states, processes and performances. Mourelatos seems to follow Kenny’s system and adopt the view that accomplishments always contain achievements as their outcome. ‘What argues strongly for the integration of accomplishments and achievements is that both are actions that involve a product, upshot, or outcome’ (Mourelatos 1981: 193). This view holds that accomplishments and achievements have outcome in their own structure.¹⁵ In other words, accomplishments and achievements are intrinsically telic. Here we see the first example of how telicity is applied in situation classifications.

(9) Mourelatos’ categorization

Situations			
States	occurrences (actions)		
	Processes	Events (performances)	
		developments	punctual occurrences

Another interesting perspective in Mourelatos (1981) is the established correlation between the mass-count properties in the nominal domain and the states-events distinctions in the verbal domain. Mourelatos coined two terms, ‘mass-quantified’ and ‘count-quantified’ (1981: 202) to describe the correlation. States and mass nouns are mass-quantified, and events resemble count nouns.

To test whether a predicate is count-quantified or mass-quantified, Mourelatos nominalizes verbal predicates (p. 204). This strategy is useful, I think. We cannot directly compare the properties of nouns and verbs, as they are two different domains. By applying Mourelatos’ strategy, the gap is shortened, as now the nominal

¹⁵ This view is echoed in Moens and Steedman’s event nucleus (1988: 15), where achievements can be considered as punctual outcomes and accomplishments as a developmental processes followed by a punctual outcome (p. 15 – 18).

equivalents of verbs can be directly compared with nouns in the same domain. The nominalization equivalents either refer to the gerundive form (e.g. wash – washing) or the derivative form (e.g. develop – development). The following instances are Mourelatos's original examples:

(10) (a) states: John hates liars.

*There is *a hating* by John of liars. (p. 208)

(b) processes: John pushed the cart for hours.

(OK) For hours there was (a) pushing of the cart by John. (p. 206)?

(c) events: Mary capsized the boat.

(OK) There was a capsizing of the boat by Mary. (p. 204)

Examples in (10) show that different grammatical constraints apply to different types of nominalized predicates. The nominalization in (10a) admits neither the indefinite article nor the gerundive form. In (10b), only the gerundive form but not the indefinite article is admissible. In (10c), both the indefinite article and the gerundive form are allowed. States fail the first circumstance and thus resemble mass nouns in their grammatical constraints. The admission of an indefinite article is not grammatical before a Mass noun. Events pass the third circumstance and resemble count nouns in that the admission of an indefinite article shows that they are count. Processes, however, is a difficult case to determine. Processes satisfy the second circumstance, so they can undergo gerundive nominalization but do not admit the indefinite article. This would need a special explanation.

Following Mourelatos's explanations (p. 204 – 210), processes resemble states in

terms of homogeneity, but they can be distinguished in terms of individualizability. Mass nouns, for instance, *water* and *paper*, are homogeneous in their part-whole structure: if X is gold, then all parts of X are gold (p. 210). States in verbal domain are like this, and they cannot be qualified by count adverbials (p. 205). For instance, the count adverbial ‘two times’ is not appropriate in *John hates liars two times*. Likewise, according to Mourelatos, *John pushed the cart three times* sounds odd but if more contexts are added, for instance, *John pushed the cart over the hill three times*, it is acceptable (p. 207). As for (10c), *Mary capsized the boat two times* is fairly acceptable. So, processes differ from states in that they could be quantified (given the appropriate context), but events are intrinsically quantified. From my understanding of Mourelatos’s mass-quantified and count-quantified predicates, Mourelatos indicates that states are like mass nouns, processes are like quantized mass nouns (e.g. a cup of water; two pieces of paper), while events are like count nouns.

Nevertheless, Mourelatos’s inclusion of processes and events under the same global category is problematic. As Mourelatos also makes use of the homogeneity criterion, he could have classified processes and states under the same global category, and why not? Though processes are countable mass-quantified predicates, homogeneity criterion is still applicable here and sufficient to distinguish states from non-states. Our discussions from Vendler to Mourelatos show one thing: to which global category processes belong is a hard case to determine, especially concerning the dilemma between homogeneity criterion (processes as states), telicity criterion (processes as states), countability criterion (processes as events) and dynamicity criterion (processes as events).

2.1.4 Parsons

Like all the previous authors, Parsons maintained the importance of distinguishing states and events. ‘For many purposes the distinctions among eventualities [situations] will not be important’, Parsons maintains, ‘but for a few purposes certain differences will be crucial – that between events and states being most important’ (1994: 20). The most important purpose for such distinctions is that states hold and events culminate. Parsons’s notation ‘Cul (e, t)’ means that an event e culminates at time t , while his notation of ‘Hold (e, t)’ means that an event e holds at time t .

Somewhat contradictorily, from my reading, Parsons (1994) seems to say that not all events necessarily culminate. This is evident from the following quote: ‘I do not suppose that every event has a culmination’ (p. 24), and Parsons explains further by hypothesizing a circumstance as follows, ‘If Mary begins building a bookcase but is struck by lightning when she has finished three-quarters of the work, then there is an event that is a *building*, that has her for a subject, that has a bookcase (an unfinished one) as object, and that never culminates’ (*ibid.*).

Following Parsons’ analogy, if something unexpectedly happens to the Agent and interrupts the action, the action is not completely done; therefore a non-culminated situation. Even though ‘build’ is a canonical accomplishment verb and has a STP in Vendler’s sense, the situation (in this case, building a bookcase) does not necessarily culminate. Parsons emphasizes on this point and says that it is important to understand his solutions to Dowty’s Imperfective Paradox (1977; 1979). We will see how he has solved the Paradox later. At this stage, it is sufficient to note that Parsons correlates processes and the progressive (1994: 182 – 185) and that Parsons’ processes

are defined as events – not the maximal events but actually ‘a series or amalgam of events’ (1994: 184). His own example ‘walk’, for instance, ‘is a bunch of overlapping walking events – small ones, large ones, and so on’ (*ibid.*) and she treats ‘process verbs as a special kind of event verb’ (*ibid.*). Therefore, in this paradigm, processes and event verbs culminate, while only state verbs hold.

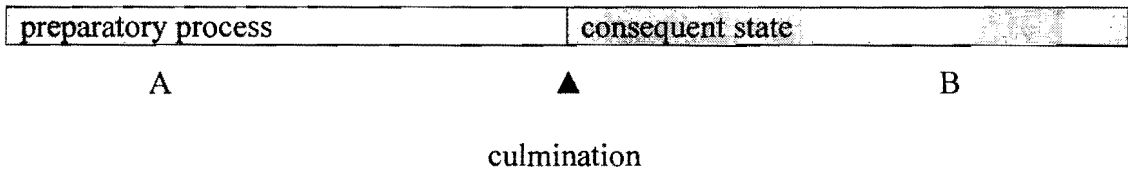
Could Parsons’s implication that processes are events but just a special kind of event verbs be true? Following his definition of processes as an amalgam of events, concerning his example ‘walk’, there must a total walking event that consists of many movements, and these movements are conceptualized as processes. Leading from this, processes and events in Parsons’ paradigm seem to have a part-whole structure, but crucially, this does not serve as a salient, powerful property that can theoretically distinguish processes and events. Moreover, I can’t agree with his opinion that processes also culminate. I will continue to discuss the problem concerning Parsons’ culminated processes when turning to solve Dowty’s Imperfective Paradox.

2.1.5 Moens and Steedman

Like Parsons, Moens and Steedman (1988: 16) use the term ‘culmination’ in their event nucleus, but unlike Parsons, they do not distinguish predicates that culminate and those that hold. Parsons’ ‘Cul (e, t)’ and ‘Hold (e, t)’ are sentence operators. His ‘Cul (e, t)’ means that the entire event described by an exemplified sentence, say, ‘Mary built a bookcase’, culminates at time t , if there are no unfinished objects left at that time t . As for the event described by ‘Mary was building a bookcase’, at time t when this is true, it is not true that the bookcase gets built at that time t (p. 24; 171). In this case, Parsons uses the operator Hold (e, t). In Moens and Steedman’s paradigm,

they use ‘event nucleus’ to represent a culminated situation (1988: 18), as in (11). Moens and Steedman define this event nucleus as ‘as an association of a goal event, or “culmination”, with a “preparatory process” by which it is accomplished, and a “consequent state”, which ensures’ (1988: 15). Their goal event is equivalent to our telic event, or global events in this dissertation.

(11) Moens and Steedman’s event nucleus (1988: 18)



Something overlaps between Parsons’ account for accomplishments and Moens and Steedman’s event nucleus of a goal event: the preparatory process. As also identified by Parsons, ‘an event often has both a developmental portion and a culmination’ (1994: 23 – 24). But Parsons does not include the consequent state phrase in his analysis of culminated events. For Moens and Steedman, the consequent state phrase is always present if a process culminates.

According to Moens and Steedman’s categorization (1988: 15 – 17), events that have a consequent state are called ‘culminated process’, which is equivalent to Vendler’s accomplishments. Events that culminate and ‘last’ instantaneously are called ‘culmination’, which is equivalent to Vendler’s achievements. Situations that have preparatory process only are process, which is equivalent to Vendler’s activities. Besides, situations that have culmination, but do not have a consequent state, are called ‘points’, which is equivalent to Comrie’s punctual, dynamic situations or ‘semelfactives’ (1981: 42). Semelfactives are punctual situations, e.g. *cough*, that

can take place once or repeatedly. In Smith (1991), they are treated as dynamic, punctual and atelic (p. 30), so semelfactives are different from processes only in terms of duration.

Moens and Steedman talk about how the use of progressive shifts the aspectual interpretation by coercion (1988: 18 – 19). ‘If a progressive combines with a culminated process, as in “Roger was running a mile”, then the latter must also first be coerced to become a process’ (1988: 18). When coercion happens, only the preparatory process is retained; culmination is ‘stripped off’ (*ibid.*). ‘It is no longer asserted that the culminations in question ever in fact occurred, but only that the associated preparatory processes did’ (Moens and Steedman 1988: 19). In other words, by the use of progressive, a telic accomplishment can be coerced to an atelic process, and an atelic process never culminates. The consequence of this is that a telic event modified by progressive does not produce any consequent state that ensures its successful happening. Their examples:

- (12) (a) Harry was running a mile, but he gave up after two laps.
(b) Harry was reaching the top when he slipped and fell to the bottom.
(1988: 19)

Putting these two examples in Moens and Steedman’s event nucleus, the culmination and part B are stripped off and only part A is retained. We can explain why coercion occurs by the usage of PVA and IVA (cf. Comrie 1976). The VP ‘run a mile’ is an accomplishment, and ‘reach the top’ is an achievement. Since a situation modified by PVA is viewed as a complete entirety (Comrie 1976), accomplishments and achievements modified by PVA must culminate and produce a resultant state (i.e. a

mile is run, and the top is reached). On the other hand, situations described by IVA (e.g. progressive) do not culminate, so Harry never finished running a mile in (9a) and did not reach the top in (9b). Moens and Steedman's aspectual coercion could be a solution to Dowty's Imperfective Paradox, so I will postpone the discussion until 2.2.2.

In the next two subsections, we will see two opposing approaches to the proper categorization of processes. Herweg argues that only discrete situations are events, whereas Smith argues that only dynamic situations are events. Discrete situations are quantized situations, and dynamic situations refer to situations that take time to develop. According to Herweg, processes are non-discrete situations; hence homogeneous and a subcategory of states. On the other hand, according to Smith, processes are dynamic as they take time to develop; hence a subcategory of events. After introducing Herweg and Smith in 2.1.6 and 2.1.7 respectively, I will make a short conclusion in 2.1.8.

2.1.6 Herweg

Herweg (1991) is a mereological approach to the distinctions between global states and events on the one hand, and those between imperfectives and perfectives, on the other. The term 'mereological approach' can be defined as 'the theory of parthood relations: of the relations of part to whole and the relations of part to part within a whole' (Stanford Encyclopedia of Philosophy)¹⁶. Since mereological approach deals with part-whole relations, the properties held between parts and whole of a situation

¹⁶ This is from Stanford's online resources. Path: <http://plato.stanford.edu/entries/mereology/>

are thus the most important criterion of Herweg. Here is my summary of Herweg's distinctions between global states and events (1991).

Firstly, similarly to Mourelatos, Herweg (1991: 969 – 970) notes that events are countable as they can be modified by count temporal adverbials (e.g. twice, three times...etc.). As his example (13a) shows, Herweg uses frequency adverbials and Mourelatos uses cardinal count adverbials¹⁷ to prove this. Similarly to Dowty's 'in α time' test, Herweg's example in (13c), but not (12b), passes the test. Predicates that admit frequency adverbials are countable and those that admit frame temporal adverbials (Dowty's in- α -time test) have a 'definite time of occurrence', borrowing from Vendler (1967) cited in Herweg (1991: 970). Events possess these properties. Since events are countable, they can be considered as 'abstract individuals from a logical point of view' (*ibid.*). According to Herweg (1991: 971), the part-whole relations held in events are this: 'only the entity as a whole, but none of its parts, satisfies the predicate which is responsible for its logical status'. This means that events are themselves individuals that cannot be further decomposed to discrete subparts that are also the same individuals. Herweg's example in (13c) is an event. Following Herweg's characterization above, during the time period (this morning, say between 6am to 12am), if Peter rode his bike to the seaside twice during any segment of the entire period (say between 6am to 8am as one segment; 9am to 11am as another), Peter rode his bike to the seaside four times that morning, not twice. This results in contradictions to the truth-value of (13a). Therefore, it is clear that the part-whole relations of events, from this example, show that events are heterogeneous. Herweg also extend his part-whole analysis of events to that of count nouns. Events

¹⁷ Please note that Herweg's frequency adverbials are equivalent to Mourelatos' cardinal count adverbials (twice, three times...etc.), whereas Mourelatos' frequency adverbials (often, always...etc.) are not identical to Herweg's.

and count nouns, from the mereological perspectives, are structurally heterogeneous. The heterogeneity property of events can also explain Dowty's in- α -time admission: events are 'temporally bounded' (*ibid.*).

- (13) (a) Peter rode his bike to the seaside twice this morning. (ex. 1a)
(b) * Peter stood on the beach twice this morning¹⁸. (ex. 2a)
(c) Peter rode his bike to the seaside in two hours this morning. (ex. 1c)
(d) * Peter stood on the beach in two hours this morning. (ex. 2c)
(e) Peter stood on the beach for two hours this morning. (ex. 2b)

(Herweg 1991: 970)

The part-whole relations of states, on the other hand, are homogeneous, for they satisfy two principles: distributivity and cumulativity. Their definition is restated below:

- (14) Distributivity means that the application of the predicate is passed on from an entity to its parts, that is, the predicate is closed with respect to the part-of relation between the entities in its extension: if such a predicate applies to an entity, it applies to its parts as well. (p. 971)
- (15) Cumulativity means that the application of the predicate is passed on from the parts to the whole: if two entities satisfy a cumulative predicate, they may be combined into a more complex entity which again satisfies the predicate.
(*ibid.*)

¹⁸ Note that Herweg later modifies this sentence with an addition of a temporal duration, and his 'Peter stood on the beach for two hours twice this morning' becomes acceptable (1991: 976). Herweg explains this by the principle of quantization. 'This morning' describes a vague period of time, but 'two hours' does not. Herweg says that the usage of 'two hours' in relation to 'this morning' is like a time phase (or stretch). I understand this as we compare the mass noun *water* and its countable counterpart *a cup of water* in the nominal domain. The relationship between 'two hours' and 'this morning' in the verbal domain is identical to that between 'a cup of water' and 'water' in the nominal domain.

Applying Herweg's distributivity and cumulativity: *John ran from 3pm to 5pm this afternoon* is a state. This sentence meets Herweg's criteria of distributivity in that we can have segments of John's running, say, between 3pm to 3:30pm and 4pm to 5pm. If *John ran from 3pm to 5pm* is true, then *John ran from 3pm to 3:30pm* and *John ran from 4pm to 5pm* are also true¹⁹ [but with different implications]. Here we see that the part-whole relations are identical: if the relation held between x and y is z , the relation held between x and y 's subparts $y_1, y_2, y_3...$ etc. are also z . Any temporal subinterval within the period between 3pm and 5pm is identical to John's running throughout the entire time stretch. On the other hand, between John's running from 2:30pm to 5pm and John's running from 3:30pm to 5pm, there is an overlapping period, that is, between 2:30pm and 3:30pm, which is, again, not different from any temporal segment and from the entirety of John's running. The period between 2:30 and 3:30 and its neighbouring periods constitute the same kind of running, which meets Herweg's criterion of cumulativity. In short, states are homogeneous predicates due to the distributive and cumulative relationships between the internal structure and the entirety. As a consequence of this, states can be discriminated from events, from the perspectives of their homogeneous/heterogeneous part-whole relations. This is the main claim Herweg holds, crucially important to his classifying states from events.

Secondly, states are temporally unbounded, while events are temporally bounded (Herweg 1991: 970 – 971). 'states are considered to be temporally unbounded, that is, the existence of temporal bounds – if there are any – is out of focus; this prevents states from being located within a time span' (p. 970). Earlier we have seen that

¹⁹ My examples here are two temporal segments, two subevents of John's running from 3pm to 5pm. If it is true that John did run from 3pm to 5pm, John did run from 3pm to 3:30pm (as one segment) and from 4pm to 5pm (as another segment). What I want to clarify here is that the internal structure of these two segments is homogeneous to that of the whole.

events are countable, possess a definite temporal occurrence, and are temporally bounded. States are defined conversely: mass, an indefinite temporal occurrence and temporally unbounded. All these properties can be associated with the choice of viewpoint aspect. From Comrie (1976), we see that PVA is defined as ‘all parts of the situation are presented as a single whole’ (p. 18), while IVA as ‘explicit reference to the internal temporal structure of a situation’ (p. 24). States and IVA are connected due to the temporal unboundness of states and IVA focus on the homogeneous internal structure. Events and PVA are connected, due to the temporal boundness of events and PVA focus on the heterogeneous internal structure as an entirety.

Coming back to the categorization of processes: one striking fact is that Herweg does not distinguish processes from states. States and processes are ‘instances of the global conceptual category of states’ (1991: 984). Similarly to states, processes meet the criteria of cumulativity and distributivity. However, as Herweg also notes, the challenge of this view comes from Dowty (1986: 42) cited in Herweg (1991: 984). Dowty’s example ‘waltz’ requires the dancer to dance in a fixed manner in order to start waltzing. Dowty points out that in his ‘waltz’ example, the first steps cannot be called ‘waltz’; therefore the initial stage and the rest of the internal structure are not homogeneous. Processes, in Dowty’s analogy of waltz, are homogeneous ‘down to a certain limit in size’ (1986: 42). This is sharply different from states, whose homogeneity is down to any point. Herweg ignores the initial heterogeneity of processes of any kind, because ‘on the assumption that the semantic theory of the aspects has to deal with conceptual categorizations of situations rather than properties of factual situations’ (Herweg 1991: 985). Fine, but I would argue that Herweg could have challenged Dowty on two points. The first point holds that either down to points or down to parts, however trivial, homogeneity is the same property pertaining to

states and processes. The second point comes from my reading of Kiparsky (1998). Kiparsky is right that we can put the so-called minimum part problem aside, because we cannot divide a process homogeneously *ad infinitum* (Kiparsky 1998)²⁰. From these two points, Herweg is right that processes can be classified as a subcategory of states in terms of their mass property, homogeneity and compatibility with IVA.

We have seen Vendler (1974), Comrie (1976), Mourelatos (1981), Parsons (1994), Moens and Steedman (1988). It follows that none of these authors would support that processes should be classified as a subcategory of global states. Herweg's decision from the mereological perspectives, in my opinion, is unique. In the next subsection, we will see Smith's defence for classifying processes as a subcategory of events.

2.1.7 Smith

Smith (1991: 29) defined events as 'dynamic, involving agency, activity and change', and states as 'a period of undifferentiated moments, without endpoints' (p. 28). Taylor (1977: 206) cited in Smith (1991) points out that 'states are in time but they do not take time' (1977: 206). In contrast, events need to take time to develop. The property [+stages] is crucial in Smith's paradigm (1991: 30). If a situation has the property [+stages], it takes time to develop; otherwise, the situation has [-stages]. Among Smith's five categories²¹, only states have the property [-stages]. This is where global states and events are differentiated. Due to [+stages], if a dynamic situation need to reach the last stage, it requires 'input of energy' (Comrie 1976: 49) to carry on. This is

²⁰ Kiparsky's paper is originally published in Miriam Butt and Wilhelm Geuder (eds.) (1998). The version I have is downloaded from Stanford's website, footnote 13. See # 1 in Internet Bibliography.

²¹ Smith's five categories are states, activity, accomplishment, semelfactive and achievement (1991: 30).

states and processes. The second point comes from my reading of Kiparsky (1998). Kiparsky is right that we can put the so-called minimum part problem aside, because we cannot divide a process homogeneously *ad infinitum* (Kiparsky 1998)²⁰. From these two points, Herweg is right that processes can be classified as a subcategory of states in terms of their mass property, homogeneity and compatibility with IVA.

We have seen Vendler (1974), Comrie (1976), Mourelatos (1981), Parsons (1994), Moens and Steedman (1988). It follows that none of these authors would support that processes should be classified as a subcategory of global states. Herweg's decision from the mereological perspectives, in my opinion, is unique. In the next subsection, we will see Smith's defence for classifying processes as a subcategory of events.

2.1.7 Smith

Smith (1991: 29) defined events as 'dynamic, involving agency, activity and change', and states as 'a period of undifferentiated moments, without endpoints' (p. 28). Taylor (1977: 206) cited in Smith (1991) points out that 'states are in time but they do not take time' (1977: 206). In contrast, events need to take time to develop. The property [+stages] is crucial in Smith's paradigm (1991: 30). If a situation has the property [+stages], it takes time to develop; otherwise, the situation has [-stages]. Among Smith's five categories²¹, only states have the property [-stages]. This is where global states and events are differentiated. Due to [+stages], if a dynamic situation need to reach the last stage, it requires 'input of energy' (Comrie 1976: 49) to carry on. This is

²⁰ Kiparsky's paper is originally published in Miriam Butt and Wilhelm Geuder (eds.) (1998). The version I have is downloaded from Stanford's website, footnote 13. See # 1 in Internet Bibliography.

²¹ Smith's five categories are states, activity, accomplishment, semelfactive and achievement (1991: 30).

clear from her paper (1999), where Smith advances to guard that processes are events, by following Comrie's definition of dynamic situations: 'events are continually subject to a new input of energy' (Comrie 1976: 49) cited in Smith (1999: 486).

Smith comments on Herweg's mereological approach in the last subsection as a 'strong mereological view' (1999: 485) and she obviously disagrees with Herweg's in that she sees processes as situations 'with explicit temporal bounds', being 'discrete, with non-uniform part structures' (1999: 484). This is interesting. Smith seems to follow Depraetere (1995) and argue that telicity and boundness are two separate issues: 'while telic events have intrinsic bounds, temporally bounded situations have bounds which are explicit and independent' (Heinämäki 1984; Depraetere 1995) cited in (Smith 1999: 485). In this approach, processes and events are all bounded, but with different conditions. Whereas events are intrinsically bounded, processes are temporally bounded. What temporal bounds mean is reflected by the use of duration adverbials in Smith's examples: *Mary worked for 2 hours* and *Mary slept from 2 to 4 this afternoon* (p. 484). Smith indicates that these two examples are activities and they 'pattern syntactically and semantically with telic sentences' (*ibid.*). At the footnote 7 on the same page, Smith explains this further by admitting the bounded adverbials 'in a time': *Mary played her violin for an hour in 3 hours* and *It took Mary 3 hours to play her violin for an hour* (*ibid.*). Smith's argument is this: if the standard test for telicity 'in a time' is compatible with a process like 'x V-ed for y hours', the process verb and telic events behaves alike: they are dynamic and bounded, with heterogeneous part-whole structures (p. 485). The question concerns us here is thus whether processes are temporally bounded, and even if so, whether a temporally bounded situation and an intrinsically telic bounded situation can be equivalent. Boundness is relevant to the compositionality of telicity, so I will postpone the

question till 3.2., where I will discuss Depraetere (1995) particularly.

At this stage, it is sufficient to note that Smith differs from Herweg in terms of temporal dynamism. Now the problem concerning the classification of processes becomes clear. On the one hand, as Herweg notes, structural distributivity and cumulativity are an overlapping property that both states and processes obtain. On the other hand, as Smith notes, temporal dynamism is an overlapping property both processes and events share. If one does not want to argue for one or the other, what would one do? I will provide a simple solution in the next subsection.

2.1.8 A short conclusion

The different categorizations of above-mentioned authors can be summarized as in (16) below. In this table, I exclude semelfactives, because I want to concentrate on the contrast between Vendler's original fourfold categories. As noted, semelfactives are punctual processes, so they should be categorized under processes. For example, if we want to categorize semelfactives under Mourelatos' paradigm, we can categorize them as a subcategory of processes and use [\pm duration] to distinguish them. Since Mourelatos classifies processes under the global events, so are the semelfactives.

(16) A summary of categorization

	Global states		Global events		
Vendler	– continuous tense		+ continuous tense		
	+ durative	– durative	– climax	+ climax	
	states	achievements	activities	accomplishments	
Comrie	– dynamic		+ dynamic		
	states		– telic	+ telic	
				viewed as IVA	viewed as PVA
		processes	events		
Mourelatos	mass-quantified		count-quantified		
	+ homogeneous		– homogeneous		
	– individualizable		+ individualizable		
	states	processes	accomplishments	achievements	
Parsons	– culminate	? culminate ²²	+ culminate		
	– durative	+ durative	+ durative	– durative	
	states	processes	accomplishments	achievements	
Moens & Steedman	– defined beginnings and ends		+ defined beginnings and ends		
	states		+ durative		– durative
				– conseq.	+ conseq.
		processes	accomplishments	achievements	
Herweg	+ homogeneous		– homogeneous		
	– countable		+ countable		
	compatible with IVA		compatible with PVA		
	states and processes not distinguished		accomplishments and achievements not distinguished		
Smith	– dynamic		+ dynamic		
	– telic		+ telic		
	– durative		+ durative	+ durative	– durative
	states		activities	accomplishments	achievements

(conseq.: consequent state)

(17) The ambiguous position of processes in the categorization

+ homogeneous		– homogeneous	
states	processes ?	events	
– dynamic	+ dynamic		

²² ‘? culminate’ means that it is not certain that a process would culminate. This is Parsons’ view.

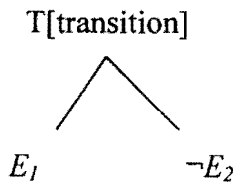
The classification of processes is tricky. On the one hand, from Comrie and Vendler processes are atelic yet dynamic. On the other hand, from Mourelatos, processes are indivisible yet homogeneous. These conflicts are shown in (17)²³. Classifying processes as a subpart of states (*energia*) will leave the question of dynamicity unsolved. Classifying processes as a subpart of events (*kinesis*) will leave the problem of telicity unanswered. Nonetheless, the status of processes must be clarified in order to distinguish further between aspectual classifications. Linguists who classify processes as a subcategory of events generally recognize the similarity that both processes and events are dynamic but ignore the fact that processes are atelic and events are telic. To avoid these, I simply establish processes as a global category, on the same footing of states. I am inspired by Pustejovsky's event structure of transition (1991).

The goal of Pustejovsky (1991) is to provide a lexical representation of event structure, which includes (i) the primitive event type of the lexical item, (ii) the rules of event composition and (iii) the mapping rules of lexical structure (1991: 55). Pustejovsky's basic event types are states, processes and transitions (1991: 56). Pustejovsky defines states as 'a single event, which is evaluated relative to no other event', process as 'a sequence of events identifying the same semantic expression', and events as 'an event identifying a semantic expression, which is evaluated relative to its opposition' (*ibid.*). Pustejovsky's use of events is equivalent to our situations, which could refer to any of Vendler's quadripartition. What inspires me is his level of representation of transition, as in (18). Grimshaw (1990:26) adopts this and makes it

²³ Readers may note that this diagram is similar to Verkuyl's (1989: 42; 91). In Verkuyl (1989: 42), he focuses on the aspectual properties such as [\pm ADD TO] and [\pm SQA]. He found that processes have [+ADD TO] and [-SQA]. I have a different intention: I merely want to point out the dilemma of classifying processes as either of the global categories.

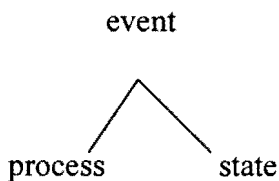
clearer in (19).

(18) Pustejovsky's transition (1991: 56)



(19) Grimshaw's adoption of Pustejovsky's structure of transition

(Grimshaw 1990: 26)



In (18) and (19), transitions (or our global events) can be decomposed to states and processes. Similarly to Moens and Steedman's event nucleus (1988: 18), an event consists of a developmental process and a state. Pustejovsky's state, however, is not really identical to Moens and Steedman's. His state is always the state opposite to the original state before the developmental process takes place. What Pustejovsky's transition means is clear: the transition of a situation's original state to its consequent state via a developmental process. For instance, in *John built a house*, the transition takes place from the original state (the house is not built) to the consequent state (the house is built), via the developmental process (John's building).

Pustejovsky does not discuss the polar distinctions between states and non-states; this is not his aim. My goal is to suggest that, by showing Pustejovsky's event structure of transition and Moens & Steedman's event nucleus, processes are not only the developmental processes in events but can be an independent global category. I establish processes as an independent category, distinguish them from states in terms of dynamicity and then distinguish them from events in terms of telicity. Processes are dynamic; temporal dynamism is involved in the course of processes. Processes are atelic: unless other linguistic devices that can express telicity are provided²⁴, processes are always atelic, ongoing in time. I have two motivations for this decision. The first motivation is to generalize progressives as processes: dynamic and atelic. The second motivation is to account for the amassing amount of VPs that consists bare plurals in MC. As we will see that the mass properties of the object arguments affect telicity in 3.1 and 3.2, the resulting predicates have the characteristics of our processes. Good evidence in MC supports that processes are neither a subcategory of states nor of events, but an independent global category. Events in MC are derived by either (i) the mass nouns (bare plurals) become quantified by admitting a quantifier and a classifier or (ii) the addition of a resultative complement to indicate culmination in Moens and Steedman's sense. I will explain this in 3.3. Now, concerning the first motivation, it is necessary to apply processes and correlate progressives as processes first.

²⁴ The linguistic devices that compose telicity will become clear in 3.2.

2.2. Applying processes

2.2.1 Processes are not absent in achievements

A topic related to processes in the discussion of events is the question whether we should include processes in the event structure of achievements. Smith (1991) refuses to include processes in the event structure of achievements. ‘Although an Achievement may allow or even require an associated process’, Smith argues, ‘the process is not taken as part of the event’ (1991: 31). On the other hand, Tenny (1994) considers the issue of duration problematic. ‘The line between an achievement and an accomplishment reading of a verbal expression is blurred’, Tenny notes, ‘whereas the distinction between a delimited and non-delimited reading is not’ (1994: 16). I support Tenny and will give reasons in the following paragraphs.

From Tenny (1994), we can generalize that authors who exclude processes from achievements hold a common view that achievements are punctual – their occurrence is too short to include the developmental process. Vendler (1974) and Smith (1991) hold the view that the [\pm duration] feature is a criterion to discriminate momentary and durative situations. For them, situations that have developmental processes are durative, and those which do not allow them are instantaneous. Their convincing point is that durative situation types can accord with the progressives, while the punctual ones can’t. Also, it makes sense to ask how long a durative situation lasts, but it doesn’t make sense to ask how long a punctual situation lasts. See the examples of these salient features overleaf.

- (20) (a) * It took John five minutes to *win*. (achievement)
- (b) It took John five minutes to *beat the opponent*. (accomplishment)
- (c) * *Mary is winning*. (achievement)
- (d) *Mary is beating the opponent*. (accomplishment)

The reason why situations that have developmental processes are durative is that progressives require a middle stage that can be highlighted on (cf. Comrie 1976). The middle stage is the developmental process in Moens and Steedman's event nucleus, or in Pustejovsky's event structure of transition. Vendler's view (1974: 221) holds that the incompatibility with the progressive in (20c) shows that achievements are just 'a single moment' (*ibid.*). I would argue that (20c) is not ungrammatical. (20c) means that Mary is about to win but has not won yet. For instance in a racing game, (20c) does make sense if Mary is at the last lap while all the opponents are lagging far behind. So, there is nothing wrong in combining a progressive and an achievement verb. Actually doing so strengthens the presence of a developmental process: the usage of the progressives is evident for the presence of processes; otherwise, where could the progressive highlight on? Achievements, therefore, are not just 'a single moment'. If Mary is about to win at her last lap, the last lap is a part of the developmental process. The developmental process must exist to satisfy the truth-value of (20c) in semantics. From here, we can see that the use of PVA and IVA shifts the highlight. If an achievement is modified by PVA (*Mary won*), it is a completed and culminated event. PVA highlights on the consequent state (*Mary has won*). If it is modified by IVA as in (20c), the progressive highlights on the developmental process and the resultant phase is thus out of focus. Following the train of this thought, the modification of the progressives does not weaken, but strengthens, the inclusion of a developmental process in achievements.

Tenny is correct that both accomplishments and achievements are ‘delimited events’ (1994: 17), because they are both telic and culminate. Duration is a matter of time, and it does not affect whether an achievement is telic or not. How short a process must be in order not to be existent is hard to determine. Since accomplishments and achievements must all culminate, despite the duration, they should be treated conceptually alike. On the other hand, I think one cannot also say that the developmental process is omitted in achievements. Following Hale & Keyser (1994) and Chomsky (1995), I assume that accomplishments and achievements have an identical syntactical representation. Despite the length of their duration and the consequent sensitivity to the adverbial modification of time, accomplishments do not differ from achievements in structure. They can be represented by VP shells. Canonical accomplishments such as *break* and *build* are two-place predicates with the external AGENT argument originating within the outer vp (Spec, vp) shell while the internal THEME argument originates within the inner VP (Spec, VP). The external AGENT argument initiates the developmental process and the internal THEME argument is subsequently affected by the process. Following Hay and Keyser (1993: 83 – 93), the outer vp shell is causative and the inner VP is inchoative. The outer representation is actually a process, and the inner representation is a state. Accomplishments and achievements have both outer and inner representations, while speakers can choose between viewpoint aspects to either focus on the developmental process (progressives), or on the resultant phase (perfect), or both the process and the resultant stage (perfective).

2.2.2 Reanalyzing Dowty's Imperfective Paradox

Recall Parsons' discussion on processes in 2.1.5. In her paradigm, a process is 'actually a series or amalgam of events' (1994: 184). Because of this, Parsons' example of processes, *Mary ran*, also culminates²⁵. But its progressive form, *Mary was running*, does not culminate but 'hold' (*ibid.*). When a progressive holds, it does not culminate and produce a result. Parsons uses this to avoid the imperfective paradox (p. 185). What is the imperfective paradox?

Dowty's imperfective paradox (1977) emerges when the following examples are contrasted:

- (21) (a) John was drawing a circle.
(b) John drew a circle.

- (22) (a) John was pushing a cart.
(b) John pushed a cart.

(original examples from Dowty (1977: 45) ex. 1 – 4)

Dowty is correct that 'drew a circle' in (21) is an accomplishment; 'pushed a cart' in (22) is a process. This is one of the readings of an ambiguous sentence. When (21b) and (22b) are modified by progressives, we respectively obtain (21a) and (22a), but with different entailments. Whereas (22a) entails (22b), (21a) does not entail (21b). (22) shows that as long as John started pushing a cart, he pushed the cart. By contrast,

²⁵ $(\exists t)[t < \text{now} \ \& \ (\exists e)[\text{running}(e) \ \& \ \text{Subject}(e, \text{Mary}) \ \& \ \text{Cul}(e, t)]]$ (Parsons 1994: 184)
Running is an event, whose subject is Mary and it culminates before the present moment.

(21b) entails that the whole circle must now exist, while (21a) asserts that only a part of the circle exists. The serious question is whether the whole circle in (21a) will eventually exist.

Dowty's answer is *yes* – not in the actual world – but in the possible worlds known as 'inertia worlds' (1979). 'Inertia worlds are to be thought of as worlds which are exactly like the given world up to the time in question and in which the future course of events after this time develops in ways most compatible with the past course of events' (1979: 208). Parsons comments that this idea is that 'the progressive sentence is true just in case the nonprogressive version would have been true in any situation like this one that proceeded *normally*' (1994: 169). Accordingly, that 'John drew a circle' is true in the actual world entails that 'John was drawing a circle' is true in the inertia worlds, where John's circle must come to existence eventually (*ibid.*).

A major motivation for Dowty's insistence that unfinished objects in progressive sentences must all eventually exist in the inertia worlds, I think, is to satisfy the definition of his accomplishments: $[\varphi \text{ CAUSE } [\text{BECOME } \psi]]^{26}$ (1977: 47). Dowty (1977: 47) defines it as follows: 'here φ and ψ are sentences. CAUSE is a two-place sentential connective, and BECOME a one-place tense operator'. Take 'John drew a circle' for example again. *John draws a circle* is φ and *the circle exists* is ψ . φ causes ψ to change. Next, Dowty shows that 'John was drawing a circle' as [PROG [φ CAUSE [BECOME ψ]]]. In this case, the object 'circle' must theoretically exist in order to satisfy [BECOME ψ], since this proposition must have its participant 'circle' in order to be true. However, in the actual world, the participant 'circle' in the

²⁶ For instance, following Dowty's analysis here for *John draws a circle*, φ is *John draws a circle* and ψ is *the circle is drawn*. φ represents a developmental process and ψ the resultant phase.

progressives only partially exists: it is an unfinished object. Where can it be fitted into? Dowty's inertia worlds thus help him avoid the problematic issue of unfinished objects in the actual world²⁷.

Linguists who analyze accomplishments in progressives from the standpoint that accomplishments are telic events face unfinished objects as a puzzling problem. On the one hand, they have to maintain that accomplishments are culminating events, therefore arguing that the unfinished objects will *possibly* exist at the end as long as the event in question carries on (as expressed by the progressive construction). Åqvist (1977: 38) cited in Parsons (1994: 177), for instance, in the case of *Mary is drawing a circle*, maintains that 'Mary is drawing something (an arc) in such a manner that it is becoming more and more the case that that thing is a circle' (1994: 178). On the other hand, they acknowledge that the outcome of the progressives in the case of accomplishments cannot be asserted. As Dowty (1977: 47) notes (22a), 'one should be able to conclude that some activity of drawing took place and that the existence of a circle was a possible but perhaps not actual outcome of this activity'. Nonetheless, if the problem of the progressives in the case of accomplishments is similar to the issue of probability in Mathematics, we can better employ a Mathematical formula – or cast a die to test the possibility – to solve the issue than to establish the inertia worlds. If the existence of an unfinished object in the case of progressive accomplishments cannot be asserted in the actual world, let me ask, why do these linguists still maintain examples such as (21a) are accomplishments, or telic events?

²⁷ S. Bowerman pointed out that the unfinished objects are only problematic in the IVA and in its perfective counterpart 'John drew a circle', the circle should exist. I agree with S. Bowerman.

This is because they have to theoretically distinguish accomplishments from processes; this is why Dowty analyzed the contrast between (21) and (22). The imperfective paradox is a consequential product arising from such a theoretical contrast between processes and accomplishments in progressives. Very differently, I maintain that when the contrast dissolves, the paradox does not originally exist. There is one possible way to dissolve this contrast; that is, treating all progressives as processes²⁸. (21a) and (22a) are both processes, possessing the same underlying structure.

Some works, for instance Moens and Steedman (1988), explain (20a) in terms of the aspectual coercion. Recall that their event nucleus comprises a preparatory process, a culmination and a consequent state. Accomplishments typically represent the entire event nucleus. The event nucleus of (21a) comprises only an associated preparatory process. As they also note, ‘if a progressive combines with a culminated process [accomplishments], ...then the latter must also first be coerced to become a process’ (1988: 19) and ‘the most obvious way to do this is to strip off the culmination and leave the preparatory process behind’ (*ibid.*). This is a common strategy in answering the paradox: authors first point out that accomplishments are different from processes in the non-progressive forms (cf. the contrast between (21b) and (22b)). Then they show that in the progressive forms accomplishments undergo aspectual shift or coercion; as a result, an accomplishment is shifted to a process in the progressive. Third, they explain why telicity is cancelled or why the culmination is stripped off (cf. Moens and Steedman).

²⁸ S. Bowerman questioned whether sentences like ‘John was filling a bucket with water’ could also suit in my paradigm. As the mass noun ‘water’ is cumulative, it seems strange to treat ‘water’ as an unfinished object. The verb ‘fill’ is an incremental-theme verb (see Chapter Three), which culminates. When the bucket is no longer empty, it culminates. Here, we won’t face the problem of unfinished objects, but, because of the modification by IVA, the bucket is not full as the culmination point has not yet been reached. This example still fits in my paradigm.

In the present framework, I straightforwardly define that all progressives are neither states nor events but processes²⁹, so the progressive form of activities and accomplishments all behave alike. I don't have to, as the above-mentioned authors do, explain the differences between progressives of activities and accomplishments. Following Smith's defining characteristics of IVA; all progressives are imperfective on the account of both the initial and end points being excluded. Also, due to the fact that the endpoint is out of focus, all progressives are atelic. Moreover, progressives cannot be static. Progressives are dynamic in the sense of Comrie: they need time to develop. Progressives cannot be eventual either, since they lack a well-defined culmination. These are the uniform characteristics progressives commonly share. Therefore, I do not need to first claim that there are different kinds of progressives, regarding to different aspectual classifications. I don't need to discriminate between them. Classifying all progressives as processes saves me from the trap of the imperfective paradox by avoiding unnecessary explanations such as the assumption of the inertia worlds, the elimination of culmination, the aspectual shift from telicity to atelicity, the uncertain realization of the unfinished objects, etc.

To summarize, processes in the present framework are atelic and do not culminate. Progressives resemble processes due to the fact that (i) they are atelic and (ii) they do not culminate.

²⁹ Vlach (1981), among many authors is particularly influential in establishing progressives as states. Mittwoch (1988), too, holds a similar view that progressives are static. Herweg, as mentioned above, holds that the progressive is a special means in imperfectives by which events are converted to states. On the other hand, Bertinetto (1994) rejects treating progressives as states. A good discussion is represented in Bertinetto (1994: 396 – 406). Nevertheless, since my aim in this thesis is not to fight for one or the other in this issue, I will leave the comparison to the readers. As noted, I propose that all progressives are processes.

Chapter 3 Reanalyzing telicity in Mandarin Chinese

Telicity is an inspiring field of research, for it sharpens our understanding of transitivity (Hopper and Thompson 1980), culmination (Moens and Steedman 1988; Parsons 1994), delimitedness and measure-out constraints (Tenny 1994), boundness (Jackendoff 1991; 1996), endpoints (Smith 1991; Depraetere 1995), predicate compositionality (Verkuyl 1972, 1989, 1993), incrementality (Dowty 1991) and quantized-cumulative properties (Krifka 1998)³⁰. More recently, Bohnemeyer and Swift correlate telicity with perfectivity under ‘event realization’ (2004: 263). Besides, Kratzer (2004) links telicity as a semantic component to the syntax of accusative case. Following Jackendoff (1991), Thompson (2006)³¹ recently correlates boundness and telicity in her syntactic representation of events. Though there seem to be many different approaches to telicity, I would say that many of them overlap and their similarities interestingly show that telicity is an old concept redefined in the new terminology – just like old wine in a new bottle. Vendler’s climax or STP (1974: 219) is important to the subsequent development of the endpoint approach. Boundness in Jackendoff (1991) and Thompson (2006) is also connected to STP from the perspectives of spatial and temporal boundness. STP also appears in Krifka’s discussions about mass-count properties of nouns (Krifka 1992: 30). Count nouns have ‘precise limits’ (*ibid.*) and Krifka correlates count nouns and events by showing that they have precise limits. I would like to start with Krifka’s approach to telicity based on the homomorphism mapping between events and objects.

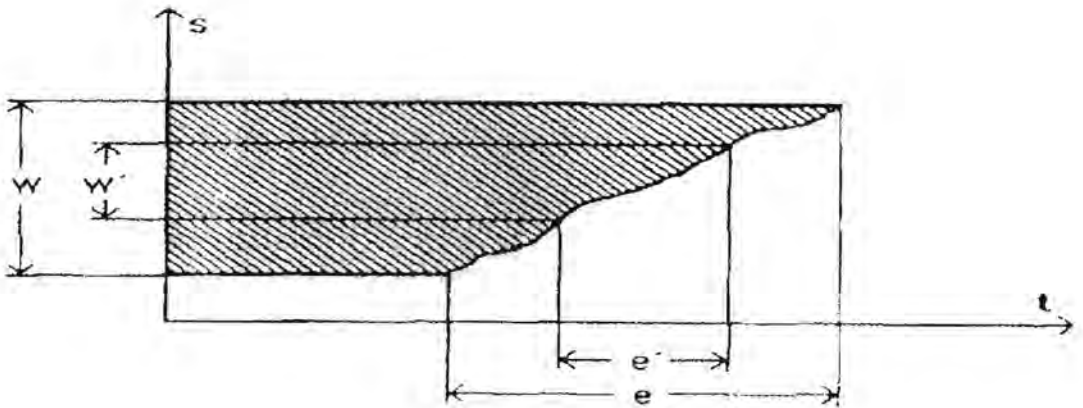
³⁰ See # 3 in Internet Bibliography.

³¹ Thompson’s terminology of ‘events’ is an umbrella term for states, processes and events, which is equivalent to ‘situations’ used in this dissertation.

3.1 Krifka: thematic relations as links between nominal reference and temporal constitution

One important contribution of Krifka (1992) to aspectology is that he links events and objects by postulating thematic relations. Since there are established relations between events and objects, certain characteristics must be found as the common denominators for both events and objects. Two important properties can be characterised. One is cumulativity, and quantization is the other. The concept of Krifka's cumulativity and quantization can be understood from the following space-time diagram below.

(23)



(Krifka 1992: 38)

In this diagram, the axis s represents space and the axis t represents time. Krifka's represented relationship between objects and events is homomorphism, and the mapping between them is a gradual and incremental. As time moves forwards, an event fully develops until every part of its 'object' is used up; hence the consumption of the object is incremental to the creation of its event. Let us take 'John ate an apple'

for example. John's eating of the apple corresponds to the amount of the apple being eaten. John's every bite forms a subevent and every bit of the apple that has been eaten forms a subpart of the object. John's last bite of the apple is the STP of the event. At this STP, the mapping between subevents and subparts naturally terminates; consequently, a change of state has occurred— the apple has been eaten.

Verbs that have the incremental mapping relationship with their objects are known as 'incremental-theme verbs', and can be typically referred to verbs of creation and consumption (Dowty 1991: 567; Tenny 1994: 15). Incremental-theme verbs possess Verkuyl's [+ADD TO] property in the verbal domain, so they are inherently telic. Because events develop in terms of the quantity of objects, the property of objects is transferred to the events and, consequently, affects the overall aspectual interpretation of VPs. 'The basic idea, Krifka explains, is that 'with certain thematic relations, the reference properties of the syntactic arguments carry over to the reference properties of the complex construction' (1992: 38). Reference properties refer to the mass (cumulative) and count (quantised) properties of objects from the nominal domain. These properties will be transferred to VPs because of the established thematic relation held between VPs and arguments. This is how Krifka correlates an object to its event and explains how the property of an event is transferred to its event.

Following Kiparsky (1998), I assume that cumulative entities possess 'divisive reference', that is, if we divide an object to parts, every part is identical to its sum³². In (23), the symbol w represents an object *wine* on the space axis and e represents its event *drink wine*³³ on the time axis. The object *wine* has the property of cumulativity,

³² Kiparsky's divisive reference for cumulativity is similar to Herweg's principle of distributivity. Both require that the properties of the parts be identical to those of the sum.

³³ Please note that the contrasted examples 'drink wine' and 'drink a glass of wine' are Krifka's

because if we divide a quantity of wine to glasses of wine, every glass of wine is also wine. Every part of w , for instance w' , is qualitatively identical to w . This cumulative property from the nominal domain is transferred to its drinking event, so e can have homogeneous subevents, for instance, e' . The relationship between w and e is the same to the relationship between w' and e' . Cumulativity applies where if e' and e'' both fall into e , the sum of e' and e'' will also be e .

Quantization is different. Let w be *a glass of wine* and e be its event *drink a glass of wine*. The object w cannot have w' that is also the same glass of wine. This means that a quantized object does not have a homogeneous subpart that can be mapped to the corresponding subevent of *drink a glass of wine*. So, in order for *drink a glass of wine* to be true, every drop of wine in the glass must be drunk, which means that every subpart of the object is mapped to every subevent in the sense of (23c) and (23d). Because of this, the mapping between a quantized object and its event is unique in the sense of (24a) and (24b).

Krifka's next step is to establish thematic relations (R) that are held between objects and events. These relations are defined more clearly in Kiparsky (1998)³⁴, so I will follow Kiparsky's definitions, stated in (24).

original examples (1992: 38 – 39) when he explains the diagram.

³⁴ As noted, Kiparsky's article is downloaded online. I could not obtain the actual page number for the proper reference. His explicit explanations of Krifka's thematic relations (1992) in (24) are quoted from page 11 to 12 on the downloaded article.

- (24) (a) Uniqueness of objects: there can be no two distinct objects which bear 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.

(24a) and (24b) are concomitant. (24c) and (24d) are complementary. (24a) means that if we have two distinct objects x and y , we will have two distinct events e_1 and e_2 that each bears a patient relation to its own object (x and e_1 ; y and e_2). Likewise, (24b) means that if we have two distinct events e_1 and e_2 , there must be two distinct objects x and y . (24c) means that if there is an event, for instance *eat an apple*, every bit of the eating event has a corresponding bit of the apple and they have the same thematic relation (in this case, a PATIENT relation) throughout the mapping. (24d) can be explained in the converse way of (24c): if there is an event that bears a PATIENT relation to its object, then every subpart of the object also bears the same PATIENT relation to its own subevent.

Now we can correlate cumulativity and quantization to atelicity and telicity respectively. As for cumulativity, the mapping between w' and e' forms the same event as the mapping between w and e does in (23). So, it is not necessary for all w to be mapped to e in order to develop the complete e event: any subevent represents the total event. But for quantisation, the mapping between w' and e' is not the same as that between w and e , so it is necessary for every subpart of w to be mapped to every subevent of e , in order for the complete e to exist. When every part of w has been successfully mapped, e reaches an inherent endpoint. Krifka calls this inherent

endpoint ‘a set terminal point’ (1992: 30), which is similar to Vendler’s STP.

Sometimes, predicates are ambiguous in that they can have telic and atelic interpretations. Krifka’s solution is that if an iterative reading or a partitive reading is included, a predicate is atelic; otherwise, telic (1992: 40 – 41). Uniqueness of objects in (24a) ensures that the same object is ‘not done twice’ (cf. Kiparsky 1998), so the iterative reading is avoided. Mapping to objects in (23c) ensures that every subpart of an object and every subevent of an event are mapped under the same thematic relation in order to be quantized, and because of this, the partitive reading is avoided. A partitive reading occurs where only some, but not all, parts of an object are mapped to some subevents. For instance, (25a) can have an atelic reading in (25b) and a telic reading in (25c). (25d) can only have an atelic reading.

- (25) (a) John read the letter.
(b) John read the letter for an hour.
(c) John read the letter in an hour.
(d) John read for an hour/ *in an hour.

(25b) acquires the atelic reading from the iterative or partitive interpretation. The iterative reading suggests that John read the letter repeatedly and that repetition carried on for an hour. The partitive reading suggests that it took an hour for John to read only some parts, but not the entirety, of the letter. By excluding the iterative and partitive readings, (24c) is telic and it implies that John finished reading the entire letter in an hour and it did not repeat. In (24c), the direct object *the letter* is unique because a PATIENT relation correlates John’s reading event with nothing else but that particular letter. Conditions (23a) and (23c) thus apply in (24c) to satisfy quantisation

and derive telicity. (24d) is atelic, due to the absence of a direct object argument. As the direct object is absent in (24d), there is no mapping between John's reading and what John read.

Mollá-Aliod (1997)³⁵ explains Krifka's mapping between events and objects a bit more clearly: since a count noun and a telic verb have the same property of quantization (QUA), and a mass noun and an atelic verb have the same property of cumulativity (CUM), 'it is possible for the NP to transfer its properties to the VP', and 'this transference will be possible thanks to the thematic relations' (1997: 67). A quantized DP 'an/the apple' can transfer the QUA property to an eating event, resulting in an overall QUA predicate 'eat a/the apple'. On the other hand, a cumulative DP 'apples' transfers the CUM property to an eating event, resulting in an overall CUM predicate 'eat apples'. Also, a quantized DP 'a/the apple' cannot transfer its QUA property to a verb with CUM property, due to different thematic relations. From Krifka's mapping to events and mapping to objects, we can infer that a VP has QUA if there is a thematic relation between AGENT and THEME and the THEME argument is quantized. The THEME argument plays an important role here. Tenny (1994), for instance, made a strong emphasis on the necessity of a direct object in measuring out an event.

In the next section, I will examine the compositional conditions of telicity, paying attention to the concept 'boundness'.

³⁵ Please see # 5 in Internet Bibliography.

3.2 The compositional conditions of telicity

Boundness is a widespread concept in the discussion of telicity in literature. It can be captured by Thompson (2006: 215) below. I formulate a table that includes an exclusive range of aspectual interactions from Thompson's (26) in (27). Typical examples of (27) are given in (28).

(26) (a) [bounded] verb, [bounded] Aspect, [bounded] direct object

(b) [bounded] verb, [bounded] Aspect, [bounded] PP (2006: 215)

(27) An exclusive range of possible aspectual interactions within a VP

V	N	PP	ASP	VP	EX
+ culminate	+ count	+ bounded	PVA	telic	a
			IVA	atelic	b
		- bounded	PVA	atelic	c
			IVA	atelic	d
- culminate	- count	+ bounded	PVA	atelic	e
			IVA	atelic	f
		- bounded	PVA	atelic	g
			IVA	atelic	h
- culminate	+ count	+ bounded	PVA	telic/atelic	i
			IVA	atelic	j
		- bounded	PVA	atelic	k
			IVA	atelic	l
+ culminate	- count	+ bounded	PVA	atelic	m
			IVA	atelic	n
		- bounded	PVA	atelic	o
			IVA	atelic	p

- (28) (a) John built a house in three months.
- (b) John was building a house *in three months.
- (c) John built a house *for three months.
- (d) John was building a house for three months.
- (e) John watched TV in two hours.
- (f) John was watching TV *in two hours.
- (g) John watched TV for two hours.
- (h) John was watching TV for two hours.
- (i) John read two books in three days.
- (j) John was reading two books in three days.
- (k) John read two books for three days.
- (l) John was reading two books for three days.
- (m) John built houses *in three years.
- (n) John was building houses in three years.
- (o) John built houses for three years.
- (p) John was building houses for three years.

In addition to Krifka, we have explored the ideas of various authors in 2.1. Thompson's (bounded) verbs refer to Vendler's accomplishments and achievements, which have a STP and culminate. The mass-count nominal properties also affect the overall aspectual interpretation of a VP. If a VP is constituted by a count noun and a verb with an inherent culmination, the VP is quantized; hence telic. If a VP is constituted by a mass noun and a verb with an inherent culmination, the VP is cumulative; hence atelic. If a VP is constituted by a count noun and a verb without inherent culmination, the VP can either have an atelic or telic interpretation, depending on its adverbial modification, as shown by Krifka's examples in (25). This

is the result of aspectual interactions without considering PP and ASP. I use Dowty's 'in α time' for the feature [+bounded] PP and 'for α time' for [- bounded] PP. The contrast between PVA and IVA in (28) is the contrast between English simple past tense and the progressive construction. After adding PP and ASP, Thompson's formulation in (26) is confirmed, except for the example (28i). (28i) has two readings. The telic reading is that John finished reading those two books in three days. The atelic reading is a partitive one: John read parts of the two books in three days and did not finish reading either or both of them. The iterative reading is excluded, as the repetition reading of this event does not likely to happen in the actual world.

The partitive reading is not allowed in (28c). When the accomplishment verb 'build' is modified by PVA and has a count NP for complement, Krifka's mapping to events and mapping to objects apply. Since the accomplishment verb has a STP and the use of PVA ensures that the mapping between all subevents and subparts of the objects must completely reach the STP, the house must be existent at the STP and the building event must have a definite, delimited period. This is why an unbounded PP does not work here. Likewise, the culminated reading is not allowed in (28b). Although the accomplishment verb has a STP, the mappings between all subevents and subparts of the object do not necessarily reach the STP due to IVA. So, a bounded PP does not work in (28b). (28f) is problematic: *watching TV* is an atelic process which does not have an inherent STP and is modified by IVA, so a bounded PP is semantically incompatible with it. (28m) is problematic because of the unspecified DP. Chomsky (1999, fn. 10)³⁶ cited in Radford (2004: 144) points out that 'nonspecifics, quantified and predicate nominals' are not true DPs, so following Chomsky, our example *houses*

³⁶ Chomsky's version, from Kenstowicz (ed.) (2001: 1 – 52). The footnote 10 is from Kenstowicz (2001: 43)

in (27m) should be a QP headed by a null partitive quantifier and, consequently, the mappings between subevents of building and subparts of a partitive object are also partial. In a sharp contrast to (28a), where all mappings between subevents and subparts are successful, (28m) is not so. The bounded PP could modify *built houses*, but listeners may wonder how many houses were exactly built. (28m) is semantically vague rather than ungrammatical³⁷.

The verbs of motion are left out in (28). They don't fit in because they don't have a DP complement, but a PP. We have seen that PPs are temporally bounded in (27). A PP can be also spatially bounded. This is particularly relevant to motion verbs. Motion verbs without a spatially bounded PP are atelic, and those with a spatially bounded PP are telic. See examples in (29).

- (29) (a) John drove/ walked/ ran to Cape Town. (telic)
(b) John drove/ walked/ ran towards Cape Town. (atelic)
(c) John drove/ walked/ ran in Cape Town. (atelic)
(d) John drove/ walked/ ran. (atelic)

(29a) is telic because the bounded PP provides a STP and the use of PVA ensures that the action must completely reach the STP. Although the PPs in (29b) and (29c) specify destination and location, they do not provide a STP for the action. (29d) is atelic due to the lack of a bounded PP.

³⁷ S. Bowerman comments on this example, indicating that this example could mean that John has built several houses, each taking three years. What I want to emphasize here is that we don't know how many houses exactly are built in three years. The vagueness of this sentence could be clarified by specifying the exact quantity of houses.

Now, we have seen that telicity is composed of one or more of these four factors: V, N, PP and ASP. Boundness is indispensable in each factor. V is bounded if it has a STP. N is bounded because a count noun has 'precise limits', to borrow from Krifka (1992: 30). PP can be temporally or spatially bounded. ASP is bounded if it is PVA.

Among authors of the endpoint approach to telicity, Depraetere (1995) draws my attention because, very differently, she distinguishes boundness from telicity. Recall Smith's argument for classifying activities as a subcategory of events in 2.1.7. There are connections between Smith (1999) and Depraetere (1995), concerning the correlation between the intrinsically telic boundness and temporally boundness. My argument here is that if a situation is bounded by telicity, it can also be temporally bounded in the sense of Dowty's in- α -time, but not in the sense of his for- α -time modification. Boundness by telicity always correlates to temporal boundness. Duration is not temporally bounded: it is a temporal length that a situation lasts in time. Smith seems to confuse between temporal boundness and temporal duration. Activities can be modified by temporal duration. Recall Smith's example *Mary played her violin for an hour in 3 hours* (1999: 484). One could argue that if the expression *for an hour* is taken off, Mary's playing violin acquires a partitive reading and one is not sure whether she would finish playing her violin in those 3 hours. On the other hand, if the expression in *3 hours* is taken off, it is sure that Mary's playing her violin at least lasts for an hour, but crucially, whether she finishes playing violin or she continues after that one hour is an open-end question. As noted, telicity concerns an event's culmination at the endpoint. If one is not sure whether Mary's play finishes or continues at the endpoint, one can doubt whether the situation described is essentially telic or not. Concerning Smith's example above, I would say that even though Dowty's in- α -time test applies, it is still an open-end question whether *Mary finishes*

playing her violin is true.

From my understanding of Depraetere's article (1995), Depraetere separates telicity from boundness in terms of their temporal boundary: whereas a telic situation must have a natural endpoint, a bounded situation does not have to. '(A)telicity has to do with whether or not a situation is described as having an inherent or intended endpoint', Depraetere argues, '(un)boundness relates to whether or not a situation is described as having reached a temporal boundary' (1995: 2 – 3). My aim in this subsection is to refute this argument. A bounded situation is telic; a telic situation must have an inherent endpoint; and therefore, telicity is associated with the temporal boundary. It is thus not necessary to separate boundness and telicity.

Examples (30a) and (30c) below, from Depraetere (1995), show that a bounded situation is not necessarily telic, and examples (30c) and (30d) show that a telic situation is not necessarily bounded. Moreover, examples (30c) and (30d) show that the use of the progressive significantly affects whether a situation is bounded but does not affect the telicity of a situation.

(30) (a) Judith played in the garden for an hour. [atelic, bounded]

(Depraetere's original example 2b, p.3)

(b) John read books. [atelic, unbounded]

(Original example 8b, p. 5)

(c) John opened the parcel. [telic, bounded]

(Original example 5a, p. 5)

(d) John was opening the parcel. [telic, unbounded]

(Original example 5b, p. 5)

Depraetere also shows that the use of the progressive form does not necessarily cause a situation to be unbounded. The use of the perfect can overrule the unbound reading because the use of the perfect entails a bounded situation, as the example (31) shows. Examples in (32) (Depraetere 1995: 5) show that if a situation is habitual or iterative, it is definitely atelic and unbounded.

(31) (a) A: Why are your hands so dirty?

B: I've been playing in the mud. [bounded by the perfect]

(Depraetere 1995: 5; ex. 11a)

(32) (a) John left at eight o'clock. [telic, bounded] (1995: 5; ex. 7a)

(b) John leaves at eight o'clock. [atelic, unbounded] (1995: 5; ex. 7b)

(c) John eats an apple every day. [atelic, unbounded] (1995: 5; ex. 9c)

What is surprising is that Depraetere does not explain why telicity and boundness must be discriminated. Though she observed that boundness appears less frequently than telicity in the literature, this can not be a convincing explanation why boundness should be necessarily separated from telicity. Why is it not convincing enough? Because temporal boundary and the natural endpoint of a telic situation always overlap. It is hard to conceive that a telic situation that has reached its natural endpoint does not reach its temporal boundary at the same time. Moreover, there is room for dispute over whether the use of the progressive, as Depraetere maintains, does not affect telicity at all. It should not be surprising that the unbound situation represented in (31d) is still telic, since Depraetere defines telicity from the pure endpoint approach without considering the necessary involvement of time for a

situation to arrive at the endpoint. True, (31d) is unbounded; therefore, it cannot be telic. Under the present framework, all progressives are treated as processes and processes are by default atelic.

To summarize this section, I use Van Hout's (2000) account to capture the agreements reached in the literature:

- (33) (a) If there is no direct object, as in unergative or conative verb frames, there is no telicity.
- (b) If there is an object in a transitive frame, but it is not quantized, as with mass terms and bare plurals, there is no telicity either.
- (c) If there is a quantized object in a transitive frame, but the verb does not have a telic event type and does not have the lexical property of incrementality (for example, verbs of the *push*-class and stative verbs), there is also no telicity.
- (Van Hout 2000: 254)

I rewrite Van Hout's three ifs as three musts in (34):

- (34) (a) There must be a direct object.
- (b) The direct object must be a count or quantized nominal.
- (c) The verbal predicate must possess incrementality³⁸ as a crucial criterion.

³⁸ Following Krifka (1992), an incremental verb has stages in its mapping to objects. Canonical accomplishment verbs have stages, where the mappings between events and objects take place incrementally, stage by stage, until reaching the STP. Verbs of *push* class are processes because they don't possess stages – the action of pushing, for instance, is homogeneous in the sense that every subevent of pushing is also pushing and more importantly, we can't find subparts of the objects that are pushed. If John pushes a cart, not parts of the cart but the cart itself is being pushed. This is why verbs of push class do not have incremental mappings between events and objects and why they fail to have culmination.

Now I will apply these compositional conditions to MC.

3.3 Reanalyzing telicity in Mandarin Chinese

MC is well-known for being a salient example of an isolating language. Every character is monosyllabic, so traditionally every character is treated as a morpheme. The language is marked for having a large number of free morphemes; morphological affixations and inflections do not frequently take place. Nouns are not inflected for number, gender, case and definiteness. Verbs are not inflected for person, number and tense, though free morphemes for IVA and PVA do occur.

Since morphological inflections and affixations do not frequently occur in MC, plurality is not overtly expressed by morphology in MC, as it is in English. An immediate question arises: if this is so, how do the native Chinese semantically discriminate between singularity and plurality? Let me start with some examples.

(35) (a) 書 shū ‘book(s)’

(b) 兩 liǎng 本 běn 書 shū

two CL(volume) book

‘two books’

(c) 這 zhè 本 běn 書 shū

this CL book

‘this book’

(d) 這 zhè 兩 liǎng 本 běn 書 shū

this two CL book

‘these two books’

No morphology in the character (35a) indicates number, gender, case and definiteness. As number and definiteness are not specified, (35a) thus has a range of interpretations: a book, the book, books, and the books. Number is specified in (35b), so it denotes ‘two books’. Definiteness is specified in (35c), so it denotes ‘this book’. Number and definiteness are both present in (35d), so it denotes ‘these two books’. As observed, the classifier precedes the noun, number precedes the classifier and the demonstrative precedes the number. The same classifier is found in (35b), (35c) and (35d). Without the classifier *ben* these examples are ungrammatical.

The question concerns us here is why the classifier *ben* is necessary for grammaticality in (35b) – (35d). One plausible explanation for this is that the noun *shu* is a mass noun. Mass nouns cannot be quantified without measurement units. For example, the mass noun ‘water’ in English cannot be quantified without a classifier like ‘cup’. Generalizing from this, since MC nouns always need a classifier when quantified, MC nouns are by default mass. This is also held by Chiercha (1998). Therefore, plurality in MC is generated from number and a quantified NP must have a classifier. Nouns in MC cannot be the direct complement of number and demonstratives.

I follow Chomsky cited in Radford (2004: 144) and assume that all bare nouns in MC are QPs headed by a null partitive quantifier. If the partitive quantifier is null, the noun has a mass, unspecified, partitive quantity. If the partitive quantifier is specified, the noun has a count, specified, non-partitive quantity. My example (35a) represents a bare plural bearing a null partitive quantifier, whereas (35b) – (35d) represents a count NP with a specified quantifier.

There must be a grammatical agreement between nouns and classifiers in MC, but what kind of nature pertaining to the agreement is questionable. Classifiers are noun-sensitive. For instance, the noun *shu* 'book' selects *ben* 'volume' as its classifier, but not *zhang* 'piece'. There must be some rules that constrain the selection between a noun and its classifier, but what are they? There are more than a hundred of classifiers and thousands of nouns. The pairing between them must be many; some of them are not even one-to-one, but one-to-many. Is the agreement between a noun and its selected classifier in MC similar to the agreement between present tense and the third person singular in English? Many classifiers in MC seem to be universal, for instance, a 'cup' of water and a 'piece' of paper. Their usage is identical as in English. But some MC classifiers are language specific. It is thus difficult to determine whether classifiers in MC belong to lexical categories or functional categories. They could belong to lexical categories, because they 'have lexical/descriptive content' (Radford 1997: 38). The classifier 'cup' in the phrase 'a cup of water', for instance, has lexical content as an ordinary noun does. However, they could also belong to functional categories, because they 'have an essentially grammatical function' (*ibid.*). Classifiers are grammatically necessary for linking quantifiers and nouns. Chomsky's minimalist program (Chomsky 1995) does not include this kind of agreement, and it would be better if this kind of agreement could be accounted for in Chomsky's Minimalist Syntax. These are the questions in my mind when describing the quantification of the MC NPs. My next step is to show the interactions between accomplishment verbs and NPs in MC.

Since nouns without a specified Q and a classifier are mass, and mass nouns can occupy an argument position, following Krifka's mapping to events and mapping to objects, the resulting VP is cumulative. For instance,

(36) Translating typical accomplishment verbs in English to MC

(a) 吃 chī 蘋 píng 果 guǒ

eat apples

'eat apples'

(b) 寫 xiě 信 xìn

write letter

'write (to someone)'

(c) 蓋 gài 大 dà 學 xué

build universities

'build universities'

(d) 畫 huà 圓 yuán 圈 quān

draw circles

'draw circles'

Like English, 吃 chī 寫 xiě 蓋 gài 畫 huà are incremental in that they can have internal stages that lead to the STP. Unlike English, the nominal complement in each case is headed by a null partitive quantifier, so it is mass. The direct object in each case cannot have discrete subparts that can be mapped to events, so the resulting VP is cumulative and can be treated as process. The MC examples in (36) are not accomplishments but processes. This said, are there no accomplishments in MC? This is an interesting question that I want to put forward.

Two previous authors, Tai (1984, 2003) and Lin (2004), independently argued that in MC accomplishments and achievements resemble resultative predicates and they should have a result complement. Tai is the first Chinese linguist to examine Vendler's classifications in MC, and in his paper (1984), he implied that the classic Vendlerian accomplishment verbs, i.e., *paint*, *build* and *write*, in their single character form are activities, thus not telic. If this is correct, Tai means that 吃 *chī* 寫 *xiě* 蓋 *gài* 畫 *huà* in our example (36) are processes: they don't have incremental, internal stages and a STP. Almost two decades later, Tai (2003) advances his original arguments from 1984 and argues for linguistic relativism, hypothesizing that 'English speakers tend to attend relatively more to the process of an event, but, in contrast, Chinese relatively more to the result' (2003: 311). In Tai's words,

...in contrast with the four semantic categories which Vendler (1967) has proposed for English, Chinese has only states, activities, and result, lacking accomplishment and achievement categories. The later two categories are expressed mostly in action-result verb compounds (V_1 - V_2). (Tai 2003: 306)

The other work supporting Tai (1984) is Shi (1988) cited in Lin (2004: 55), who classified achievements and states alike, and activities and accomplishments alike. Shi implied that accomplishments are derived from activities, and achievements from states. In other words, states and activities are the two prime categories in MC, echoing Tai's statement above.

Achievements are basically states, but they differ from states in that they describe new states, i.e., change of state. Accomplishments are basically activities, but they differ from activities in that they encode causative activities. (Shi 1988: 59)

A good example to demonstrate the relationship between Shi's states and change of states is the state 'thick' and the change of state 'thickened'. It is clear that morphological processes take place from 'thick' to 'thicken' and from 'thicken' to 'thickened'. The morpheme [en] encodes causativity: something is caused to become thick. Verbs that have causative morphemes such as [en] are inherently telic. The verb 'thicken' describes the process that something is caused to become thick, but unless the change of state is produced (in English it is realized by the past participle -ed), something has not become thickened. So, Shi's argument makes sense here.

In 2004, Lin moved a step further by formalizing Tai's arguments, and his claim in (37a) and 37b) echoes Tai's (2003: 306) and Shi's (1988: 59) passages above.

(37) (a) For the most part, activity and state are the only two primitive verbal types in Mandarin Chinese. As a general rule, change of state predicates (accomplishments and achievements) are derived syntactically.

(b) With very few exceptions, no monomorphemic verbs in Mandarin are telic – no monomorphemic verb encodes a result, a natural end point, an end state, or the attainment of a goal.

(c) The particle *le* signals inchoativity. (Lin 2004: 53)

Would MC differ from English concerning the structure of accomplishments and achievements? Is Lin's claim in (37a) applicable? Let us first analyze how processes and accomplishments are formed in MC and how PVA and IVA constrain them. If we add number and classifier to the nominal complement in (36), forming a specified QP, we can shift the atelic processes to telic accomplishments, as follows:

(38) Deriving accomplishments

(a) 吃 chī 一 yī 顆 kē 蘋 píng 果 guǒ

eat one CL apple

'eat one apple'

(b) 寫 xiě 兩 liǎng 封 fēng 信 xìn

write two CL letter

'write two letters'

(c) 蓋 gài 三 sān 所 suǒ 大 dà 學 xué

build three CL universities

'build three universities'

(d) 畫 huà 四 sì 個 ge 圓 yuán 圈 quān

draw four CL circles

'draw four circles'

After adding a specified quantifier and a classifier, the nominal complements in (38) 'become' count nouns, so they can have discrete subparts. Unlike those examples in (36), the mapping between subevents and subparts in (38) is possible. This means that when all the mappings reach the STP, all subparts are mapped and the complete event exists. This is clearer if we add the post-verbal PVA marker 了 le.

(39) PVA Modification

(a) 吃 chī 了 le 一 yī 顆 kē 蘋 píng 果 guǒ

eat PVA one CL apple

‘ate one apple’

(b) 寫 xiě 了 le 兩 liǎng 封 fēng 信 xìn

write PVA two CL letter

‘wrote two letters’

(c) 蓋 gài 了 le 三 sān 所 suǒ 大 dà 學 xué

build PVA three CL universities

‘built three universities’

(d) 畫 huà 了 le 四 sì 個 ge 圓 yuán 圈 quān

draw PVA four CL circles

‘drew four circles’

Readers may note that I used past tense in the English translation in (39). Why past tense? In the last paragraph, I have explained that the mappings between subevents and subparts are possible, and now in (39) due to the PVA modification; the events they encode must have been completed. The use of PVA ensures that the time interval during which a telic situation occurs must precede the utterance time on the temporal linear analogy; otherwise, if the time interval overlaps with the utterance time, IVA is used. The time interval of a telic situation’s occurrence must be located before the utterance time, in order to ensure that the truth-value of the telic situation is true. For instance, if we have an AGENT argument *John* in (39b) and we have *Mary* to report *John*’s writing event, the time interval of *John*’s writing event must precede the

utterance time of Mary's report, so John's writing event is true.

The partitive reading is not possible in (39), as the null partitive quantifier is replaced by the numeral. One could argue that (39a) has an extra reading – the indefinite reading. Since MC lacks definite and indefinite articles, the numeral 'one' in MC plays a role similar to the English indefinite article *a*. True, (39a) can have the indefinite reading and be thus distinguished from the rest, but (39a) does not become atelic because of the indefinite reading. If *John ate an apple* (in MC and English) is true, the entire apple, not a half of the apple, must be eaten up, irrespective of the apple being definite or not. Having introduced PVA modification, let us see how IVA modification affects (38).

(40) IVA Modification

(a) 在 zài 吃 chī 一 yī 顆 kē 蘋 píng 果 guǒ

IVA eat one CL apple

'be eating one apple'

(b) 在 zài 寫 xiě 兩 liǎng 封 fēng 信 xìn

IVA write two CL letter

'be writing two letters'

(c) 在 zài 蓋 gài 三 sān 所 suǒ 大 dà 學 xué

IVA build three CL universities

'be building three universities'

(d) 在 zài 畫 huà 四 sì 個 ge 圓 yuán 圈 quān

IVA draw four CL circles

'be drawing four circles'

One may wonder how a man could *write two letters/ build three universities/ draw four circles* at the same time. Perhaps, a very capable man can manage that. But situations like *John was drinking three cups of wine* in real life are unlikely to happen, as logically only one cup at each time was drunk³⁹. So, the use of IVA can contradict to the number of events described by a situation. MC is not an exception. What I would like to point out is that IVA in MC requires the object position to be filled, as (41) demonstrates.

(41) IVA Modification

(a) 在 zài 吃 chī 蘋 píng 果 guǒ

IVA eat apples

'be eating (some) apples'

(b) 在 zài 寫 xiě 信 xìn

IVA write letter

'be writing (some) letters'

(c) 在 zài 蓋 gài 大 dà 學 xué

IVA build universities

'be building (some) universities'

(d) 在 zài 畫 huà 圓 yuán 圈 quān

IVA draw circles

'be drawing (some) circles'

³⁹ S. Bowerman comments on this, indicating that in the realm of possibility, it is not impossible that a builder can easily have three projects on the go at once, even if he is not physically doing the building. Whether situations described by language and the real life exactly correspond, I think, depend on our pragmatic knowledge of the world. It is unlikely that when a speaker says 'I am drinking two cups of water' at the same time when he is drinking one cup each time only.

(e) *在 zài 吃 chī

IVA eat

'be eating'

(f) *在 zài 寫 xiě

IVA write

'be writing'

(g) *在 zài 蓋 gài

IVA build

'be building'

(h) *在 zài 畫 huà

IVA draw

'be drawing'

As noted above, the nominal complements in (41a – 41d) are mass, so the entire VP can be considered as process. The modification of IVA does not result in semantic contradiction, since number is not specified. Now, the problem is that we cannot leave out the direct object. In English, the unspecified NPs can be left unexpressed but this is not allowed in MC. This is known as 'Unspecified NP Deletion' (Tenny 1994: 44). To express (41e – 41h) grammatically, we need to fill up the direct object position, as (42) shows.

(42) The correction for (41e – h)

(a) 在 zài 吃 chī 飯 fàn

IVA eat cooked rice/ meal

'be eating'

(b) 在 zài 寫 xiě 字 zì

IVA write characters

‘be writing’

(c) 在 zài 蓋 gài 房 fáng 子 zǐ

IVA build houses

‘be building’

(d) 在 zài 畫 huà 畫 huà⁴⁰

IVA draw pictures

‘be drawing’

From (36), (38), (39), (40), (41) and (42), I would conclude that verbs that have incremental property (thus culminate at the endpoint of mappings between subevents and subparts of the object) in MC should have the following features:

(43) The syntactic properties of VPs containing an incremental verb

(a) VPs consist of a V and a QP⁴¹. QP cannot be omitted, and the Q is either \emptyset (null, unspecified) or specified (not \emptyset and also including the numeral ‘one’).

(b) The Q in QP can be unspecified or specified. If unspecified, the VP will be cumulative and atelic. If specified, the VP will be quantized and telic.

(c) In the case of an unspecified QP, an alternative way to shift from atelicity to telicity is to add a resultant state.

⁴⁰ Thanks to S. Bowerman. He is right that we have an example of zero derivation here. The verb ‘paint; draw’ and the noun ‘paint; picture’ in this case are morphologically and phonologically identical.

⁴¹ Please note that the idea of specified/unspecified QPs come from Chomsky cited in Radford (2004: 144).

- (d) In the case of a specified QP, the addition of a resultant state clarifies what the result is but does not affect the telic reading.
- (e) Since PVA indicates completeness, if PVA exists with a specified QP and an incremental verb, telicity is derived without a resultant state. It is not ungrammatical to add a resultant state to a quantized VP modified by PVA, it is just semantically redundant.

Now we can come back to Tai's and Lin's arguments. The central argument of Tai is that the resultant complement is indispensable in forming telic predicates, as (42) shows. Tai thus concludes that the overt expression of a resultant state guarantees telicity. Lin similarly argues that since there are no monomorphemic telic verbs in MC (except for a few exceptions), the result complement is necessary. I would argue that as far as the correlation between resultant state and telicity is concerned, Tai and Lin are correct, but telicity is not derived from the resultant state only. As we have seen Krifka (1992) and Thompson (2006), telicity is composed of the interactions between nominal and verbal properties. We should reconsider whether Lin's argument for the lacking of monomorphemic telic verbs is applicable or not.

(44) (a) 卡 kǎ 車 chē 碾 niǎn 死 sǐ 了 le 約 yuē 翰 hàn 。 (ex. 14)

truck grind-die-ASP⁴² John

'The truck killed John by running him over.'

(b) 他 tā 敲 qiāo 死 sǐ 了 le 約 yuē 翰 hàn 。 (ex. 15)

he knock-die-ASP John

'He killed John by hitting him with a hammer (stone, stick, etc.).'

⁴² Please note that Tai's ASP here refers to my PVA.

(c) 他 tā 打 dǎ 死 sǐ 了 le 約 yuē 翰 hàn 。 (ex. 16)

he hit-die-ASP John

‘He killed John by hitting him (with or without an instrument).’

(d) 他 tā 們 men 毒 dú 死 sǐ 了 le 約 yuē 翰 hàn 。 (ex. 21)

they poison-die-ASP John

‘They killed John with poison.’

(Tai 2003: 307 – 308 *passim*.)

(45) (a) 他 tā 打 dǎ 了 le 約 yuē 翰 hàn 。 (compare 43c)

3rd(s.) hit PVA John

‘He hit John.’

(b) *卡 kǎ 車 chē 碾 niǎn 了 le 約 yuē 翰 hàn 。 (compare 43a)

truck grind PVA John

‘The truck ran over John.’

(c) *他 tā 毒 dú 了 le 約 yuē 翰 hàn 。 (compare 43d)

3rd(s.) poison PVA John

‘He poisoned John.’

Firstly, Tai’s evidence, reproduced in (44) suggests that a resultant complement must be present, or (45b) and (45c) will be ungrammatical. The presence/absence of a resultant complement affects the grammaticality in (45). According to Tai, (45a) merely says that someone hit John without any consequence but in (44c) the presence of the resultant complement *si* ‘die’, together with PVA, ensures that the PATIENT is dead. Tai maintained that the first element in the resultative compound is the means by which the result is achieved, as we can see the *by*-phrase from Tai’s English translation. From here Tai maintains that the resultant complement is the head of the

resultative predicate. Secondly, Tai uses these examples to demonstrate that ‘result’ is a prime semantic category in MC. If the result head is not expressed, English accomplishment and achievement verbs are activities in MC. This can be seen from Tai’s (2003: 306) more radical examples in (46), where Tai shows that English sentence like (46a) is not grammatical. ‘Kill’ in English is inherently telic. If ‘John killed Mary’ is true, ‘Mary is dead’ is also true. However, that is not always true in MC, and this all depends on whether the result is overtly expressed (*ibid.*). In (46b) the equivalent of ‘kill’ in MC is the monomorphemic 殺 shā, while in (46c) the equivalent of ‘kill’ is 殺 shā 死 sǐ (V_{kill}-V_{die}). According to Tai, shā in (46b) is not telic, so it can’t be the true equivalent of English ‘kill’. For Tai, the PATIENT John did not die in (46b), as the monomorphemic verb 殺 shā merely describes the attempt of killing and does not necessarily guarantee the death of John, even though it is modified by PVA. To ensure that John’s death is certain, we need an overt resultative 死 sǐ, as in (46c). Once the death of John is ensured (as in the first clause of 46c), one cannot claim John didn’t die (as in the second clause of 46c); otherwise the truth-value of these two clauses will be contradictory. (46c) is ungrammatical because the speaker cannot claim John is not dead in the disjunction clause while claiming that John is dead in the first clause.

(46) (a) *I killed John, but he didn’t die.

(b) 我 wǒ 殺 shā 了 le 約 yuē 翰 hàn 兩 liǎng 次 cì , 他 tā 都 dōu 沒 méi 死 sǐ 。

I kill-ASP John two CL he all not die

‘I performed the action of attempting to kill John twice, but he didn’t die.’

(c) *我 wǒ 殺 shā 死 sǐ 了 le 約 yuē 翰 hàn 兩 liǎng 次 cì , 他 tā 都 dōu

I kill-die-ASP John two CL he all

沒 méi 死 sǐ .

not die

* 'I killed John twice, but he didn't die.'

(Tai 2003: 306; example (11), (12) and (13) respectively.)

Though (46b) sounds acceptable to Tai's ear, it is not so to mine for semantic reasons. The question that concerns us here is whether the verb *sha* 'kill' contains Parsons' culmination, identical to its English counterpart. For Tai, the feature, culmination, should be contained in the resultant component. 'In fact,' Tai argues, 'I would argue that the verb 'to kill' doesn't really exist in Chinese. On the other hand, many Chinese action-result verb compounds involving *si* 'to die' can be translated into to 'to kill' in English' (2003: 306 – 307). This is why John's death is not definite in (46b).

But this is misleading. 殺 *shā* 'to kill' in both MC and English is a typical two-place, transitive-accusative predicate, while 死 *si* 'to die' is a typical one-place, unaccusative predicate. In the former, we expect to find a thematic relation between an AGENT and a PATIENT, while in the latter the argument bearing EXPERIENCER is moved to the syntactic subject position. Their difference is quite clear from their different argument structures, so I cannot agree with Tai's argument that the unaccusative verb 死 *sǐ* in MC is equivalent to English 'to kill' and 殺 *shā* is unlike English 'to kill'. For me, 殺 *shā* is equivalent to English 'kill', in that they both imply the death of the PATIENT. When they are modified by PVA, it is certain that the PATIENT must be dead.

Humans share similar experiences in the world, and we might expect that the experiences of birth, aging, illness, and death should be universal across different cultures and languages. Though different languages are not the same grammatically, they should be able to describe these experiences similarly. Concerning the grammaticality of (46b), I would say that the two disjunction clauses are contradictory in their truth-value. Not only this, the frequency adverb ‘two times’ results in a distributive reading, and it is this reading that the effect of the Agent’s killing of John is weakened. If the sentence ‘*A* killed *B* twice’ is true, we can only assume that *A*’s first attempt must have failed. Actually such a sentence is not possible in English, as ‘*A* killed *B*’ conveys that *A*’s killing has successfully caused *B*’s death. This is because ‘kill’ in English is inherently telic. Likewise, I would suggest that the same verb 殺 *shā* is also inherently telic in MC.

From the discussions above, now I can attempt to answer the question I raised in the introduction, concerning (i) in which circumstances resultatives are obligatory to express telicity, (ii) in which circumstances resultatives are not obligatory, and (iii) the reasons for (i) and (ii). The answer can be derived from my generalizations in (43): resultative predicates are obligatory to express telicity if there are unspecified QPs and resultative predicates are not obligatory if there are specified QPs and PVA *le* modifies the VP. Unspecified QPs in MC are like bare plurals in English and they are inherently mass. Specified QPs consist of a numeral and a classifier, the numeral specifies Q and requires the presence of a classifier to match the noun, and result in a quantified NP. Following Krifka’s quantisation and cumulativity (Krifka 1992), VPs that consist of an incremental theme verb and a quantified NP are quantized, hence telic; conversely, VPs that consist of an incremental theme verb and a non-quantified

NP are cumulative; hence atelic. If a VP is atelic in accordance with Krifka's definition of cumulativity, a resultant predicate is obligatory to construct telicity by specifying the result. According to Moens and Steedman's event nucleus (1988), the presence of a resultant state ensures culmination, so the specification of result is evident for telicity. On the other hand, if a VP is already telic in accordance with Krifka's definition of quantisation, a resultative is not obligatory. One could add the resultant predicate to specify the result, as Tai's examples in (44) show. Recall Tai's contrast between (44) and (45). From the ungrammaticality of (45b) and (45c), Tai concludes the necessity of resultant complements. I have some comments on this here. His examples 'V_{grind}', 'V_{knock}', and 'V_{poison}' in (44) and their nominal counterparts seem to have zero-derivations. This phenomenon is quite evident in MC as the language lacks overt derivational morphemes to derive nouns from verbs or *vice versa*. Syntactic constructions seem to apply since morphological derivations between nouns and verbs are not evident in MC. The proposal of 'light verb' and VP shells (Hale and Keyser 1993; Chomsky 1995) has linkage here. As a light verb is 'a null verb with much the same causative interpretation as a verb like *make*' (Radford 1997: 201), theoretically all transitive verbs can be analyzed in connections to light verb and VP shells. Light verb and VP shells provide good syntactic constructions to derive verbs from nouns and make them causative. Just as Radford's example V_{lunch} (as in *let's lunch*) shows (1997: 210), V_{lunch} is formed by merging the noun *lunch* with a null light verb. Similarly, Tai's Chinese examples 'V_{grind}', 'V_{knock}', and 'V_{poison}' are derived from merging of null light verb and their nominal counterpart. Consequently, the resultative could be the natural production of this kind of syntactic derivation, by which I would explain the necessity of the resultant predicates in (44). Nevertheless, the resultative is not necessary in the case of 吃 chī 'eat', 蓋 gài 'build', 寫 xiě 'write' and 畫 huà 'paint' in (39). The use of PVA 了 le, according to Comrie (1976),

is sufficient to indicate the completeness of a situation. In (39), PVA modification results in a completeness reading: the apple must have been eaten, the two letters must have been written...etc. The partitive readings, in my opinion, should be excluded. Tai could argue that there is nothing wrong in adding the resultant state (e.g. 完 *wán finish*) to examples in (39), in order to disambiguate partitive readings from completeness readings. He could argue that only by adding the resultant state could the partitive readings be disambiguated: the apple is eaten up, the two letters are written up...etc. I would say that the addition of a resultant complement in (39) is not ungrammatical; it merely specifies what the result is but it does not affect the status of telicity: telicity has been derived by the presence of an increment-theme verb, a specified QP and the PVA morpheme 了 *le* that ensures the completeness readings. Therefore, the addition of 完 *wán finish* is semantically redundant in (39). In a nutshell, to express telicity in connection with incremental-theme verbs, a result complement is obligatory if there is an unspecified QP; it is not obligatory if there is a specified QP. Following this train of thought, if those incremental-theme verbs in (36) are atelic (according to Tai and Lin), their atelicity is originated from the mass, unspecified QP, not from the inherent atelicity in the verbal domain. Following Verkuyl's aspectual compositionality (1989; 1993), one could also say that the atelicity in (36) originates from the [- SQA] property from the nominal domain, not from the [- ADD TO] property from the verbal domain. This can also be explained by Krifka's cumulativity and atelicity (1992): the mass nouns (our unspecified QPs) transfer the cumulative property to events in homomorphism. Since the sources of atelicity in (36) come from the nominal domain, we can doubt whether Lin's claim that MC in general lacks monomorphemic telic verbs is true.

If those incremental-theme verbs in (36) are atelic, how would the specified QPs affect the overall telicity in MC? If there are no monomorphemic telic verbs in MC, examples in our (38) and (39) must have [-ADD TO] and [+SQA] under Verkuyl's system but they do not produce [+T]. If we assume that they are inherently atelic, how would we account for telicity in (38) and (39)? Therefore, Lin's and Tai's claims concerning the lack of monomorphemic telic verbs are too strong and their inclusion of resultant complement as the only way to derive telicity in MC fails to embrace and account for the aspectual compositionality generally discussed and consistently applied in the recent literature. I align with Verkuyl (1989; 1993) and Krifka (1992; 1998), suggesting that there are monomorphemic telic verbs in MC and they are typically incremental-theme verbs, without exception.

Chapter 4 Conclusion

According to Verkuyl (1989: 40), aspectual compositionality and the establishment of predefined verbal categories are not compatible: ‘these two things cannot be married as they are incompatible: if aspect formation is a process at a structural level it is hard to see how a lexical division can be maintained’. In the previous chapters, we have seen that various authors still maintain Vendler’s quadripartition in their analysis of aspectual compositionality. The most important, aspectual property is telicity in the verbal domain. Some verbs are inherently telic, while some are not. Inherently telic verbs have Verkuyl’s [+ADD TO] property, while inherently atelic verbs have his [–ADD TO] property. The major difference is that Verkuyl did not spell out the name for the verbs that have [+ADD TO] and those without. Therefore, as far as telicity at the verbal level is concerned, distinctions between accomplishments (particularly the incremental-theme verbs) and processes are useful. If the telic-atelic distinctions at the verbal level are important to and necessary for the aspectual compositions of VPs and the overall sentence, it is not advantageous for them to divorce.

Processes as an independent global category play an important role in this dissertation. As noted in chapter 2, to establish processes as a subcategory of states leaves the problem of dynamicity unsolved, while to establish processes as a subcategory of events leaves the problem of telicity unanswered. Processes, however, should not be a grey area in aspectual classifications. To avoid these problems, it seems logical to establish processes as an independent category, and by doing so, I extend the analysis of processes to all progressives of any situation types. Progressives of activity and accomplishment verbs do not differ essentially, as progressives highlight the internal stage and do not focus on the culmination. Though in their non-progressive forms

activity and accomplishment verbs should be discriminated wholly from the perspective of telicity, their progressive forms are essentially identical. As processes are non-culminated in my treatment, whether the unfinished objects would eventually exist is not a big issue. By applying Krifka's mappings between events and objects to progressives, I would suggest that the mapping from unfinished objects to events could only result in unfinished/incomplete events. We could also treat unfinished objects as mass nouns because we do not know exactly how much unfinished parts are unmapped in the progressive. Treating all progressives as processes could, therefore, avoid Dowty's imperfective paradox.

Concerning the application of telic-atelic distinctions at the verbal level to MC, I have pointed out that Tai and Lin overlook the importance of aspectual compositionality. I have shown that in these predicates 吃 chī 飯 fàn (eat), 寫 xiě 字 zì (write), 蓋 gài 房 fáng 子 zǐ (build) and 畫 huà 畫 huà (paint) the origin of their overall atelicity comes from the mass noun property of the nominal domain, while maintaining that the head of these VPs is incremental-theme verb, which is inherently telic, without exceptions. I am not against Lin's and Tai's analyses of telicity based on the indispensability of resultant complements. As noted, a resultant complement is necessary if a VP has an unspecified QP. I am against the strong version of Lin's and Tai's analyses. The resultant complement can derive telicity in MC, but this is not the only way. If we have an incremental-theme verb and a specified QP, the aspectual interactions will result in a quantized predicate, which derives telicity, according to Krifka (1992; 1998). By applying Krifka's quantisation and cumulativity (1992; 1998), I think, we can link the aspectual analysis of MC to the current trends of aspectology.

The above-mentioned paragraphs serve as a quick summary of the contents of this dissertation, and the following paragraphs are devoted to the further extensions and suggestions for future research.

The contrast of Mandarin data in (41e – h) and (42) shows the following pattern: VP consists of a V and a QP, and if the QP is dropped as in (41e – h), V becomes ‘unsaturated’ in the sense of Frege (1960: 31). Since in Mandarin the internal argument should not be unsaturated, it is always occupied by a QP. Because of this, the unsaturated position occupied by a QP must be filled; this can also be speculated from the following examples of ergative-intransitive verbs as well. An example of transitive verbs is added in (47f).

(47) (a) 你 nǐ 在 zài 做 zuò 什 shé 麼 me ?

you IVA do what

What are you doing?

(b) 我 wǒ 在 zài 走 zǒu [路 lù]? / *走 zǒu .

I IVA walk-road/ *walk (without *lù*)

I am walking.

(c) 我 wǒ 在 zài 跑 pǎo [步 bù]? / *跑 pǎo .

I IVA run foot / *run (without *bù*)

I am running.

(d) 我 wǒ 在 zài 搬 bān 家 jiā / *搬 bān .

I IVA move home/ *move (without *jiā*)

I am moving.

(e) 我 wǒ 在 zài 眨 zhǎ 眼 yǎn 睛 jīng / *眨 zhǎ 。

I IVA blink eyes / *blink (without *yǎnjīng*)

I am blinking.

(f) 我 wǒ 在 zài 喝 hē 水 shuǐ / *喝 hē 。

I IVA drink water / *drink (without *shuǐ*)

I am drinking.

In spite of transitivity or intransitivity, why is the nominal element in (47 b – f) not allowed to be dropped? The reason why the nominal element cannot be dropped makes sense in (47f): the transitive verb ‘drink’ will otherwise be unsaturated. But why can’t it be dropped in (47b – e), since an intransitive verb does not need a complement? If the nominal element in (47b – e) is not the complement, what is it? Would it be an adjunct? According to Radford’s definition of ‘adjuncts’, they are the ‘optional constituent typically used to specify e.g. the time, place or manner in which an event takes place’ (Radford 2004: 433). The nominal element in (47 b – e) cannot be considered as an adjunct, I think, because they cannot be removed optionally (or the sentence will be ungrammatical). If the nominal complement cannot be either a complement or an adjunct, what is it?

One could follow Radford’s explanations to solve the problem: unergative predicates are transitive verbs, consisting of an abstract light verb and a caseless, incorporated object, following Baker 1988 (Radford 2004: 349). The presence of the light verb can account for the agentive subject of v’ (external argument) and the incorporated object merges with V to form a VP; forming a uniform VP-shell analysis of both transitive and intransitive predicates. One can treat the nominal element in (47 b – e) as an incorporated object, but why should the incorporated object be dropped in the

following circumstances?

(48) (a) 約 yuē 翰 hàn 走 zǒu 了 le 一 yì 公 gōng 里 lǐ 。

John walk PVA one km

John walked 1 km.

(b) 約 yuē 翰 hàn 跑 pǎo 了 le 兩 liǎng 公 gōng 里 lǐ 。

John run PVA two km

John ran 2 km.

(c) 約 yuē 翰 hàn 跑 pǎo 到 dào 開 kāi 普 pǔ 敦 dūn 。

John run arrive Cape Town

John ran to Cape Town (and I arrived in Cape Town).

S. Bowerman (personal communication) comments on (48). He found the nominal expressions in (48) could be considered as ‘oblique objects’. Unlike objects that undergo change of state (or affected objects (Anderson 1979 cited in Tenny (1994: 156)), the oblique object ‘Cape Town’ in (48c) expresses change of location. Although John’s running eventually leads him to Cape Town, Cape Town is not affected at all by John’s running. Therefore, an object that undergoes change of location does not necessarily undergo change of state. The nominal expression in (48a) and (48b) could be the result of John’s walking and running, and this result is the distance (1 km; 2km). Again, the distance as the result is not affected at all by John’s walking and running. Following S. Bowerman’s suggestion, one could also say that the nominal expressions in (47) are neither DP complements, nor incorporated objects, but oblique objects. The nominal 路 lù ‘road’ in 走 zǒu 路 lù ‘walk’ could refer to ‘unspecified distance’, so when the distance is specified as in (48a), the unspecified distance is replaced by a specified one. This could form a

uniform explanation to account for the substitutions of unspecified QPs by specified QPs (cf. examples in (36) and (38). However, the nominal 眼 yǎn 睛 jīng ‘eyes’ in (47e) cannot be analyzed in the same way. S. Bowerman comments on this, indicating that MC examples⁴³ like (47e) can be considered as special, idiomatic expressions.

One could say that (48c) is a kind of ‘serial verb constructions’ (Li and Thompson 1981: 594), that is, constructions where two or more separate events have the same underlying subject (*ibid.*). I translate (48c) as ‘John ran to Cape Town and arrived in Cape Town’, because 跑 pǎo ‘run’ and 到 dào ‘arrive’ form two separate events and these two events have the same subject ‘John’ and the same oblique object ‘Cape Town’. However, if one follows Li and Thompson (1981), one serious problem could occur: John is the AGENT argument of the unergative predicate⁴⁴ ‘run’ and is also the THEME argument of the unaccusative predicate⁴⁵ ‘arrive’. This violates Chomsky’s Theta-Criterion (1981: 36), which states that ‘each argument bears one and only one θ -role, and each θ -role is assigned to one and only one argument’. In (48c), the same argument, John, has two different θ -roles. Clearly, to analyze (48c) from the perspectives of serial verb constructions will result in theoretical contradictions to Chomsky’s Theta-Criterion.

⁴³ There are more examples of this kind, for instance, 拍 pāi ‘clap’ 手 shǒu ‘hands’ (clap), 皺 zhòu ‘frown’ 眉 méi 頭 tóu ‘forehead’ (frown), 傷 shāng ‘hurt’ 心 xīn ‘heart’ (sad). I found expressions like these have connections with body parts.

⁴⁴ Unergative predicates typically bear one argument, that is, AGENT argument as the syntactic subject (Radford 2004: 256).

⁴⁵ Unaccusative predicates typically bear one argument, that is, THEME argument as the syntactic subject. (Radford 2004: 256).

Instead of proposing serial verb constructions as a solution to (48c), S. Bowerman suggests that there is a null-case pronoun (PRO) in (48c): John_i ran PRO_i arrive (in) Cape Town. PRO is thus the required subject of the one-place predicate ‘arrive’, and John is the antecedent of PRO (controlled by John). Instead of treating (48c) as two conjunct clauses ‘John ran to Cape Town’ and ‘John arrived in Cape Town’, the ‘control clause’ (Radford 2004: 108) ‘arrive (in) Cape Town’ functions as the complement of ‘John ran’, implying ‘John ran in order to arrive in Cape Town’. According to Radford (*ibid.*), verbs that ‘allow an infinitive complement with a PRO subject are said to function as control verbs’, ‘run’ is unlikely to be a control verb. The problem centres on complement. I don’t think that verbs like ‘run’ can have a ‘control clause’ (*ibid.*). There is no such a way in MC to say ‘John ran Mary to arrive in Cape Town’ (cf. John wants Mary to run to Cape Town). This leads us back to the problem of complement and unergative verbs.

I found these problems when I was collecting MC examples to derive accomplishments from processes in the last section of chapter 3. Although these problems seem to be not really relevant to the aspectual compositionality and event classifications discussed in this dissertation, nevertheless, I think they are connected to aspect and argument structure (cf. Tenny 1994). I do not have solutions for these problems now, but they can serve as the direction for my future research.

Bibliography

- Anderson, S. (1977) Comments on the Paper by Wasow. In P. Culicover, T. Wasow, and A. Akmajian (eds.) *Formal Syntax*. New York: Academic Press, 361 – 378
- Åqvist, L. (1977) On the analysis of some accomplishment and activity verbs, in Rohrer, C. (ed.) *On the Logical Analysis of Tense and Aspect*. Tübingen: TBL Verlag Gunter Narr.
- Aristotle (1933) *The Metaphysics*, I-IX. Trans. Hugh Treddenick. London: Heinemann, and Cambridge, Mass.: Harvard University Press (Loeb Classical Library)
- Baker, M. (1988) *Incorporation*, Chicago: University of Chicago Press
- Bertinetto, P. M. (1994) Statives, progressives, and habituais: analogies and Differences. *Linguistics* 32, 391 – 423
- Binnick, R. I. (1991) *Time and the Verb: a guide to Tense and Aspect*. New York: Oxford University Press
- Bohnemeyer, J. and Swift, M. (2004) Event Realization and Default Aspect. *Linguistics and Philosophy* 27, 263 – 296
- Chappell, V. C. (1970 – 1971) Stuff and things. *Proceedings of the Aristotelian Society* 71, 61 – 76
- Chierchia, G. (1998) Plurality of Mass Nouns and the Notion of “Semantic Parameter”, in Rothstein, S. (ed.) *Events and Grammar*, Dordrecht: Kluwer Academic Publishers
- Chomsky, N. (1981) *Lecturs on Government and Binding*, Foris: Dordrecht
- (1995) *The Minimalist Program*, Cambridge, Mass.: MIT Press
- Comrie, B. (1976) *Aspect: an introduction to the study of verbal aspect and related problems*, Cambridge: New York Cambridge University Press

- Depraetere, I. (1995) On the necessity of distinguishing between (un)boundness and (a)telicity. *Linguistics and Philosophy* 18, 1 – 19
- Dowty, D. (1977) Toward a Semantic Analysis of Verb Aspect and the English ‘Imperfective’ Progressive. *Linguistics and Philosophy* 1, 45 – 77
- (1979) *Word Meaning and Montague Grammar*. Boston: D. Reidel
- (1986) The effects of aspectual class on the temporal structure of discourse: semantics or pragmatics? *Linguistics and Philosophy* 9, 37 – 61
- (1991) Thematic Proto-Roles and Argument Selection. *Language* 67, 547 – 619
- Frege, G. (1892) On sense and reference. In P. Geach and M. Black (eds.) *Translations from the Philosophical Writings of Gottlob Frege*, Oxford: Blackwell, 1960.
- Garey, H. B. (1957) Verbal aspects in French. *Language* 33, 91 – 110
- Grimshaw, J. (1990) *Argument Structure*. Cambridge, Mass.: MIT Press
- Hale, K. and Keyser, S. J. (1993) On Argument Structure and the Lexical Expression of Syntactic Relations, in Hale, K. and S. J. Keyser (eds.) *The View from Building 20*, Cambridge, Mass.: MIT Press
- Heinämäki, O. (1984) Aspect in Finnish, in C. deGroot and H. Tommalo (eds.) *Aspect Bound*, Foris: Dordrecht
- Herweg, M. (1991) Perfective and imperfective aspect and the theory of events and states. *Linguistics* 29, 969 – 1010
- Hopper, P. J. and Thompson, S. A. (1981) Transitivity in Grammar and Discourse. *Language* 56, 251 – 300
- Jackendoff, R. (1991) Parts and boundaries. *Cognition* 41, 9 – 45
- (1996) The Proper Treatment of Measuring out Telicity, and Perhaps

even Quantification in English. *Natural Language and Linguistic Theory* 14, 305 – 354

- Kenny, A. (1963) *Action, Emotion and Will*. New York: Humanities Press
- Kiparsky, P. (1998) Partitive Case and Aspect, in Butt, M. and W. Geuder (eds.) *The Projection of Arguments: lexical and Compositional Factors*. California: Stanford CSLI Publications, 265 – 307
- Kratzer, A. (2004) Telicity and the Meaning of Objective Case, in Guéron, J. and Lecarme, J. (eds.) *The Syntax of Time*. Cambridge, Mass.: MIT Press
- Krifka, M. (1992) Thematic relations as links between nominal reference and temporal constitution, in Sag, I. and Szabolcsi, A. (eds.) *Lexical Matters*. California: Stanford CSLI Publications, 29 – 53
- Krifka, M. (1998) The Origins of Telicity, in Rothstein, S. (ed.) *Events and Grammar*, Dordrecht: Kluwer Academic Publishers, 197 – 236
- Li, C. N. & S. A. Thompson (1981) *Mandarin Chinese: A Functional Reference Grammar*, California: University of California Press
- Lin, J. (2004) *Event Structure and the Encoding of Arguments: The Syntax of the Mandarin and English Verb Phrase*. Cambridge, Mass.: MIT Press. Unpublished Ph.D. Dissertation
- Lin, J. W. (2002) Selectional restrictions of tenses and temporal reference of Chinese bare sentences. *Lingua* 113, 271 – 302
- Mittwoch, A. (1988) Aspects of English aspect: on the interaction of perfect, progressive and durative phrases. *Linguistics and Philosophy* 11, 203 – 254
- Moens, M. & Steedman, M. (1988) Temporal Ontology and Temporal Reference. *Computational Linguistics* 14, 15 – 28
- Mollá-Alliod, D. (1997) *Aspectual Composition and Sentence Interpretation: A formal approach*. Glasgow: University of Edinburgh. Unpublished Ph.D. Dissertation

- Mourelatos, A. P. D. (1981) Events, Processes, and States, in Tedeschi, P. J. and A. Zaenen (eds.) *Tense and Aspect*. Syntax and Grammar 14, New York: Academic Press, 191 – 212
- Parsons, T. (1994) *Events in the Semantics of English: A study in Subatomic Semantics*. Cambridge, Mass.: MIT Press
- Pesetsky, D. (1996) *Zero Syntax: Experiencers and Cascades*. Cambridge, Mass.: MIT Press
- Platzack, C. (1979) *The semantic interpretation of aspect and aktionsarten. A study of internal time reference in Swedish*. Dordrecht: Foris
- Pustejovsky, J. (1991) The syntax of event structure. *Cognition* 41, 47 – 81
- Radford, A. (1997) *Syntax: A minimalist introduction*, Cambridge: Cambridge University Press
- (2004) *Minimalist Syntax: Exploring the Structure of English*. Cambridge: Cambridge University Press
- Shi, Z. (1988) *The present of past of the particle le in Mandarin Chinese*. Unpublished Ph. D. Dissertation. Pennsylvania University Press.
- Smith, C. S. (1991) *The Parameter of Aspect*. Dordrecht: Kluwer Academic Press
- (1999) Activities: States or Events? *Linguistics and Philosophy* 22, 479 – 508
- Tai, J. H-Y. (1984) Verbs and Times in Chinese: Vendler's four categories, in Testen, D., V. Mishra & Drogo, D. (eds.) *Papers from the parasession on lexical semantics*. Chicago, Illinois: Chicago Linguistics Society
- (2003) Cognitive Relativism: Resultative Construction in Chinese. *Languages and Linguistics* 4, 301 – 316
- Taylor, B. (1977) Tense and Continuity. *Linguistics and Philosophy* 1, 199 – 220

- Tenny, C. & Pustejovsky, J. (ed.) (2000) *Events as Grammatical Objects: The converging perspectives of lexical semantics and syntax*. California: Stanford CSLI Publications Press
- Tenny, C. (1994) *Aspectual Roles and The Syntax-Semantics Interface*. Dordrecht: Kluwer Academic Press
- Thompson, E. (2006) The Structure of Bounded Events. *Linguistic Inquiry* 37, 211 – 228
- Van Hout, A. (2000) Event Semantics in the Lexicon-Syntax Interface, in Tenny, C. and Pustejovsky, J. (eds.) *Events as Grammatical Objects: The converging perspectives of lexical semantics and syntax*. California: Stanford CSLI Publications Press
- Vendler, Z. (1957) Verbs and Times. *Philosophical Review* 66, 143 – 160. Revised in Vendler (1967) *Linguistics and Philosophy*. Cornell: Cornell University Press. Reprinted in Schopf, A. (1974) *Der Englische Aspekt*. Darmstadt: Wissenschaftliche Buchgesellschaft, 213 – 234
- Verkuyl, H. J. (1972) *On the Compositional Nature of the Aspects*. Dordrecht: Reidel
- (1989) Aspectual Classes and Aspectual Composition. *Linguistics and Philosophy* 12, 39 – 94
- (1993) *A Theory of Aspectuality: The interaction between temporal and atemporal structure*. Cambridge: Cambridge University Press
- Vlach, F. (1981) The semantics of the progressive, in Tedeschi, P. J. and A. Zaenen (eds.) *Tense and Aspect*. *Syntax and Grammar* 14, New York: Academic Press, 271 – 292

Internet Bibliography

1. Kiparsky, P. (1998) Partitive Case and Aspect
<http://www.stanford.edu/~kiparsky/Papers/wuppertal.pdf> (pdf MS)
2. Krifka, M. (1992) Thematic relations as links between nominal reference and temporal constitution.
<http://amor.rz.hu-berlin.de/~h2816i3x/Publications/Krifka%201992%20Thematic%20Relations.PDF>
(pdf MS)
3. Krifka, M. (1998) The Origins of Telicity
<http://amor.rz.hu-berlin.de/~h2816i3x/TELICITY.pdf>
(pdf MS)
4. Lin, J. (2004) Event Structure and the Encoding of Arguments: The Syntax of the Mandarin and English Verb Phrase
<http://www.umiacs.umd.edu/~jimmylin/publications/JLin-Mandarin-verb-syntax.pdf> (pdf MS)
5. Mollá-Alliod, D. (1997) Aspectual Composition and Sentence Interpretation: A formal approach
www.ics.mq.edu.au/~diego/publications/phd/thesis.pdf (pdf MS)
6. Tai, J. H-Y. (2003) Cognitive Relativism: Resultative Construction in Chinese
<http://www.ling.sinica.edu.tw/publish/LL4.2-05-Tai-paper.pdf> (pdf MS)