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The Syntax and Morphology of English *-ing*

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Abstract

This thesis discusses the syntax and morphology of English *-ing* forms and draws a categorial distinction between gerunds and present participles.

In English, the suffix *-ing* can attach to almost any verb, except modal verbs (**caning, musting, etc.*). This thesis attempts to find out whether all the words in the form of *V-ing* are instances of the same lexical element or whether some or all of them are distinct elements. The form *V-ing* can be realised as prototypical nouns, which denote entities (e.g. *a tall building, a long meeting*) and prototypical adjectives, which denote properties (e.g. *very boring, more interesting*), etc. There are also *V-ing* nouns that describe events, and they are called associated *V-ing* nominals in the thesis (e.g. *The building of the bridge took three years, The writing of a book is difficult*). Among words in the form of *V-ing*, it is hard to decide the categorial status of gerunds (e.g. *Writing a book is difficult, The kids discussed visiting their grandparents*) and present participles (e.g. *He is writing a book. The kids kept visiting their grandparents*), as well as to distinguish them from each other. In traditional grammar, gerunds and participles are both inflected verb forms but distinct from each other.

According to *The Cambridge Grammar of the English Language* (Huddleston & Pullum 2002), no verb shows any difference between gerunds and present participles. Huddleston & Pullum (2002) have just one inflectional form of the verb marked by the *-ing* suffix; the form is labelled with the term ‘gerund-participle’. Huddleston & Pullum (2002) also take the view that from the point of syntax (as opposed to inflection) the distinction between gerunds and participles is not viable. Their conclusion is that ‘there is no difference of form, function, or interpretation that correlates systematically with the traditional distinction between “gerund” and “present participle”’. The distinction introduces an unmotivated complication into the grammar: it is one of the features of traditional grammar that should be discarded’ (Huddleston, 2002a: 1222).

This thesis argues against Huddleston & Pullum’s (2002) claim that a distinction between gerunds and present participles cannot be sustained. This thesis will show that gerunds and present participles are different in distribution and thus belong to

separate categories. I analyse that gerunds belong to the category of nouns, and participles belong to the category of adjectives. The analysis involves the contrast of gerunds with associated *V-ing* nominals and the comparison of participles and prototypical adjectives. Both gerunds and associated *V-ing* nominals have the distribution of nouns and thus belong to the category of nouns. However, phrases headed by gerunds, unlike ordinary NPs, have the internal structure of VPs. I will show that gerunds are categorially nouns because they inherit the distribution from nouns, and they inherit theta-marking and adverb modification from relationals, which give rise to the phrase structure of VPs. Participles have the distribution of adjectives, though they are different from prototypical adjectives in certain ways. I will show that the differences are due to the fact that participles and prototypical adjective have different semantics. Thus the differences are not distributional, i.e. they do not distinguish categories.

From the perspective of morphology, in traditional grammar and Huddleston & Pullum (2002), both gerunds and present participles are inflected forms of verbs. However, I argue that gerunds are categorially nouns and participles are categorially adjectives. Therefore, they are derived from verbs via *-ing* suffixation, gerunds being derived nominals whereas participles being derived adjectives. In addition, the analysis of participles being adjectives is also supported by the morphology of prototypical adjectives that are in the form of participles. If participles were inflected verb forms, there would not be a plausible, single morphological explanation for *boring, interesting, tired, drunk, hurt* to arise in the system.

The thesis ends with a discussion of Verb-*ing*-Noun combination. There are two types of *V-ing-N* compounds: one type such as *drinking water, sleeping pill*, the other such as *hummingbird, sleeping partner*, etc. The two types differ in the categorial status of *V-ing* and the attribution relation. The combination can also be a noun phrase, e.g. *interesting story, sleeping baby*, etc. The difference in attribution relation and the compound-phrase distinction are closely related to the categorial status of the *V-ing*, because of which we need a theory of distinguishing different *-ing* forms; that is why I start the thesis. The patterns of Verb-*ing*-Noun combination, in turn, show that present participles and gerunds are distinct in the category.

Lay summary

This thesis discusses the syntax and morphology of English *-ing* forms and shows that gerunds and present participles are distinct from each other.

English *V-ing* has several realisations. *V-ing* can be a prototypical noun, (e.g. *a tall building*, *a long meeting*) or a prototypical adjective (e.g. *boring*, *interesting*), etc. Unlike a prototypical *V-ing* noun that denotes entities, there are also *V-ing* nouns that describe events (e.g. *The building of the bridge took three years*, *The writing of a book is difficult*); they are called associated *V-ing* nominals in the thesis. Among the words in *V-ing* form, gerunds (e.g. *Writing a book is difficult*, *The kids discussed visiting their grandparents*) and present participles (e.g. *He is writing a book*. *The kids kept visiting their grandparents*) are, in traditional grammar, regarded as inflected forms of verbs and are distinct from each other.

The Cambridge Grammar of the English Language (Huddleston & Pullum, 2002) claims that no verb shows any difference between gerunds and present participles, and there is just one inflectional form of the verb marked by the *-ing* suffix; the form is labelled with the term ‘gerund-participle’. Huddleston & Pullum (2002) also take the view that from the point of syntax the distinction between gerunds and participles is not viable.

This thesis argues against Huddleston & Pullum’s (2002) claim that a distinction between gerunds and present participles cannot be sustained. I will show that gerunds and present participles have different functions and thus are separate categories. I analyse that gerunds belong to the category of nouns, and participles belong to the category of adjectives.

For analysing the categorial status of gerunds and participles, I discuss the contrast of gerunds with associated *V-ing* nominals and the comparison of participles and prototypical adjectives. Phrases headed by both gerunds and associated *V-ing* nominals have the syntactic functions of NPs, however, phrases headed by gerunds, unlike ordinary NPs, have the internal structure of VPs. I will show that gerunds inherit distribution from nouns, which shows their categorial status, and they inherit some features from relationals. Participles have the distribution of adjectives, though there are certain differences between participles and prototypical adjectives. I will

show that the differences are due to the fact that participles and prototypical adjectives have different semantics. Thus the differences do not distinguish them as separate categories.

I will also discuss the morphology of V-*ing*: is *-ing* a derivational or inflectional suffix? In traditional grammar and Huddleston & Pullum (2002), both gerunds and present participles are inflected forms of verbs. However, I have analysed gerunds as nouns and participles as adjectives. Therefore, gerunds and present participles are derived from verbs via *-ing* suffixation, gerunds being derived nominals whereas participles being derived adjectives. In addition, the analysis of participles being adjectives is also supported by the morphology of prototypical adjectives that are in the form of adjectives. If participles were inflected verb forms, there would not be a plausible, single morphological explanation for *boring, interesting, tired, drunk, hurt*, etc. to arise in the system.

The thesis ends with a discussion of Verb-*ing*-Noun combination. There are V-*ing*-N compounds, and they can be grouped into two types because of the categorial difference of V-*ing*: *drinking water, washing machine, sleeping pill* or *hummingbird, mockingbird, sleeping partner*. The two types also differ in attribution relation. Besides, the Verb-*ing*-Noun combination can also be phrases, e.g. *interesting story, sleeping boy*, etc. The difference in attribution and the compound-phrase distinction are closely related to the categorial status of the V-*ing* form, for which we need a theory of distinguishing different *-ing* forms. The discussion of Verb-*ing*-Noun combination in turn also shows that present participles and gerunds are distinct in the category.

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Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where stated otherwise by reference or acknowledgement, the work presented is entirely my own.

Xin Sennrich

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List of Abbreviations

NP: noun phrase

VP: verb phrase

AdjP: adjective phrase

PP: prepositional phrase

V-ing-N: Verb-*ing*-Noun

V-N: verb-noun

Theta role: θ -role

Chapter 1. Introduction

This thesis discusses different types of *V-ing* (short for ‘words resulting from the attachment of *-ing* to verbs’). The discussion aims to decide on the categorial status of each type of *V-ing* by analysing their syntax, morphology and semantics. Gerunds and present participles are two realisations of the form *V-ing*, among many others. The categorial status of gerunds and participles is not clear, and the two are even mixed.

It has been argued in Huddleston & Pullum (2002) that there is no distinction between gerunds (e.g. *My hobby is playing the piano. The kids discussed visiting their grandparents*, etc.) and present participles (e.g. *My sister is playing the piano. The kids kept visiting their grandparents*, etc.). Huddleston & Pullum (2002) state that no verb shows any difference between gerunds and present participles, and reject an analysis that has gerund and participle as different forms syncretised throughout the class of verbs. The book, therefore, has just one inflectional form of the verb marked by the *-ing* suffix; the form is labelled with the term ‘gerund-participle’. Huddleston & Pullum (2002) also take the view that from the point of syntax (as opposed to inflection) the distinction between gerunds and participles is not viable. Their conclusion is ‘there is no difference of form, function, or interpretation that correlates systematically with the traditional distinction between “gerund” and “present participle”’. The distinction introduces an unmotivated complication into the grammar: it is one of the features of traditional grammar that should be discarded’ (Huddleston & Pullum 2002: 1222).

This thesis will argue against Huddleston & Pullum’s (2002) claim that a distinction between gerunds and present participles cannot be sustained. I will show that gerunds and present participles are different in syntactic distribution and thus belong to separate categories. Gerunds and present participles cannot and must not be conflated into a single category which is labelled ‘gerund-participle’.

I will first in chapter 2 introduce the theories of categorisation and prototypicality. In the following chapters, I will analyse what categories gerunds and participles belong to and how gerunds and participles are distinguished from other subcategories of that category, especially the prototypical subcategory.

Chapter 7 is the main discussion on distinguishing gerunds and present participles from each other. However, the whole thesis itself is an argument against a single category ‘gerund-participle’, as proposed by Huddleston & Pullum (2002). In chapter 3, the discussion of gerunds, gerunds are contrasted with associated *V-ing* nominals. Compare, for example, *Building the bridge took three years* and *The building of the bridge took three years*. Both gerunds and associated *V-ing* nominals are in the form of *V-ing* and have the distribution of nouns. However, unlike associated *V-ing* nominals or other common nouns, phrases headed by gerunds have the internal structure of verb phrases. Gerunds are a mixed category of nouns and relationals¹ (Malouf 1998, 2000). Gerunds inherit their distribution from nouns, and thus they are nouns categorially. In chapter 4, the discussion of participles, participles are compared with adjectives. I will show that participles have the distribution of adjectives and thus belong to the category of adjectives. However, there are differences between participles and the prototypical adjectives; these differences have an explanation not reliant on categorial status, discussed in chapter 6. From chapters 3 and 4, we can see that there is a clear distributional distinction between gerunds and present participles: gerunds have the distribution of nouns, whereas present participles have the distribution of adjectives. Chapter 5 focuses on the morphological analysis of gerunds and present participles among other different *-ing* forms.

Chapter 6 is a detailed analysis of the categorial status of participles. Participles belong to the category of adjectives. The differences between participles and prototypical adjectives will be explained without appealing to a difference in categorial status. An already known sub-class of adjectives – associative adjectives – has striking similarities with participles, which supports my argument that the differences between participles and prototypical adjectives are not distributional and thus do not conflict with the analysis of participles being adjectives. In addition, the morphology of prototypical adjectives that are identical in form to participles, discussed in chapter 5, also supports my analysis of participles as adjectives. I will show that if there were a categorial distinction between participles and adjectives,

¹ The category *relational* includes verbs, adjectives, and gerunds, etc., which are modified by adverbs and can theta-mark. In Malouf (2000), the category is changed into the category *verbal*.

then the morphology of adjectives that are in the form of participles would not be amenable to a single plausible account, whereas my analysis facilitates that account.

Chapter 8 discusses the attribution patterns of Verb-*ing*-Noun combination. For the explanation for the X-N patterns, we need a theory that distinguishes different V-*ing*. The difference in attribution relation and the compound-phrase distinction are closely related to the categorial status of the V-*ing* form, which in turn shows that there is a categorial distinction between present participles and gerunds.

I hope this thesis will deepen our understanding of gerunds and present participles. The distinction between them is observable in both syntax and morphology, therefore is not “an unmotivated complication into the grammar” (Huddleston & Pullum 2002: 1222).

1.1. Different types of V-*ing* forms

The suffix *-ing* in English can attach to almost any verb, except modal verbs.² We must find out the relationships of all the words in the form of V-*ing* and their categorial status. V-*ing* forms can be realised as nouns, adjectives, etc. Here are some examples containing V-*ing* forms.

(1)

- a. tall buildings, annual gatherings, oil paintings
- b. The building of the bridge took three years.
The gathering of his tools took longer than he expected.
His deft painting of the mountain is a delight to watch.
- c. Building the bridge took three years.
Gathering his tools took longer than he expected.
His painting the mountain deftly is a delight to watch.
- d. The kids kept visiting the grandparents.
He is painting the mountain deftly.
The boy suddenly stopped running.
The boy is charming the audience.
- e. The boy is charming.

² *can* – **caning*, *may* – **maying*, *shall* – **shalling*, *must* – **musting*

The movie is boring.

The book is interesting.

The category of the examples in (1a) and (1e) is clear: the *V-ing* forms in (1a) are lexical *V-ing* nouns, and they are entity-denoting; the *V-ing* forms in (1e) are *V-ing* adjectives, and they are prototypical adjectives, denoting properties. Property-denoting adjectives are called ascriptive adjectives³. In (1b), the *V-ing* forms are complex event nominals that are derived from verbs. They are fully compositional, i.e. they have a meaning that is directly derivative from the embedded verb. They are called associated *V-ing* nominals in this thesis. The categorial status of associated *V-ing* nominals is evident – they belong to the category of nouns because they have the distribution of nouns; they are common nouns, and the phrases headed by them have the internal structure of ordinary NPs⁴. In (1c), the *V-ing* forms are gerunds. Phrases headed by gerunds function as the subject of the sentences, like the associated *V-ing* nominals in (1b).

Phrases headed by gerunds have the same syntactic distribution as phrases headed by associated *V-ing* nominals, occurring in argument positions or other positions that allow noun phrases. Like associated *V-ing* nominals, gerunds also have a meaning that is directly derivative from the embedded verb. However, comparing the examples in (1b) and (1c), we can notice that gerunds are distinct from associated *V-ing* nominals. Gerunds do not take articles, whereas associated *V-ing* nominals do; gerunds are modified by adverbs, associated *V-ing* nominals by adjectives; gerunds take direct objects, whereas associated *V-ing* nominals take prepositional objects. The distinction illustrates that phrases headed by gerunds have the internal structure of VPs, rather than ordinary NPs.

The *V-ing* forms in (1d) are present participles. Present participles, like prototypical adjectives in (1e), can follow the verb *be*. However, the two combinations have different semantics. The combination of *be* and a present participle expresses the progressive aspect of an event that the present participle denotes, whereas a prototypical *V-ing* adjective denotes the property of the subject. The present

³ They ascribe properties in intersective attribution to the head noun (Ferris 1993: 24).

⁴ However, associated *V-ing* nominals denote an event, not an object; therefore, unlike the examples in (1a), they cannot pluralise.

participles in (1d), like gerunds, also take direct objects and are modified by adverbs, i.e. phrases headed by present participles also have the internal structure of VPs.

So far the category of some *V-ing* forms is decided: lexicalised *V-ing* nouns⁵ and associated *V-ing* nominals are common nouns, belonging to the category of nouns, although they are different in semantic denotation; ascriptive *V-ing* adjectives belong to the category of adjectives and they are adjectives with property-denoting semantics. The categorial status of gerunds and participles is to be decided. Firstly, we need to discuss the category of gerunds. Gerunds have the distribution of nouns, but phrases headed by gerunds have the structure of VPs. Do gerunds belong to the category of nouns, or the category of verbs? In order to find it out, gerunds should be compared with associated *V-ing* nominals, which belong to the category of nouns undoubtedly. Secondly, we compare gerunds with present participles. In terms of internal phrase structure, phrases headed by both gerunds and present participles have the internal structure of VPs. Semantically, both gerunds and present participles are event-denoting. However, in terms of syntactic distribution, phrases headed by participles have the same functions as adjective phrases, whereas phrases headed by gerunds have the same functions as noun phrases. Because of the syntactic distributional difference between them, gerunds and participles must be distinguished from each other. Participles have the distribution of adjectives, but participles are different from prototypical adjectives in certain ways. The relationship between participles and adjectives must be discussed. Are participles adjectives? If participles are adjectives, then how to explain the differences between them?

1.2. Distinguishing gerunds and present participles from each other

Gerunds (e.g. *Building the bridge took three years*) and present participles (e.g. *They are building a bridge*) are the two types of *V-ing* whose categorial status is not as clear as that of associated *V-ing* nominals (e.g. *The building of the bridge took three*

⁵ Lexicalised *V-ing* nouns such as *tall building*, *a long meeting*, *dental fillings*, *his complicated feelings*, etc. are not the focus of this thesis.

years) and prototypical V-*ing* adjectives (e.g. *This story is very boring*). Huddleston & Pullum (2002) argue against traditional grammar, stating that the distinction between gerunds and present participles cannot be sustained. Huddleston & Pullum (2002) state that with respect to inflection, no verb inflectionally distinguishes between gerunds and participles, thus the inflectional suffix *-ing* added to the verb stem is formally the same for gerunds and present participles. Huddleston & Pullum (2002), therefore conflate gerunds and participles into a single category of ‘gerund-participle’. However, I argue that gerunds are different in important ways from present participles. Chapter 7 focuses on how to distinguish gerunds and present participles from each other and why the distinction must be maintained.

Chapter 3 will show that gerunds have the distribution of nouns, and chapters 4 and 6 will show that present participles have the distribution of adjectives. Gerunds and present participles are different in distribution and thus belong to two separate categories – gerunds belong to the category of nouns, whereas present participles belong to the category of adjectives. Therefore, in terms of morphology, both gerunds and present participles are derived from verbs via *-ing* suffixation. Gerunds are derived nouns, whereas present participles are derived adjectives. The analysis of gerunds and participles being derived forms of verbs contradicts traditional grammar and Huddleston & Pullum (2002), whereby both gerunds and participles are inflected forms of verbs. However, if they were verbs, why do gerunds have the distribution of nouns and participles have the distribution of adjectives? The verb itself does not have distribution. Finite verbs function as a predicate; non-finite verbs (infinitives) occur after modals or *to*.

1.3. Historical background of gerunds and present participles

Originally gerunds and present participles constitute different categories, and they are also different in form. Gerunds have the suffix *-ung/ing* in Old English and present participles have the suffix *-ende* in Old English. Present participles and gerunds were merged to *-ing*, with this process allegedly originating in the South of England around 1200 (Lass 1992: 146 ff.) and accounting for the formal difference

between Modern High German *das tanz-ende Mädchen* and Present-Day English *the danc-ing girl*.

Before gerunds and present participles were merged to *V-ing*, they belonged to different categories not only because of different morphology and phonology but also because of different functions and characteristics.

The main characteristic trait of gerunds is their displaying both nominal and verbal syntactic features. “The English gerund, which began as a pure noun, has broadened its syntactic role beyond anything characteristic of its own past history or of the other Germanic languages” (Tajima 2005). While the gerund is substantival in its origin, “retain[ing] the capability of operating as a noun” (Visser 1984: 1097), its verbal behaviour is manifested in various grammatical properties, which are summarised by Einkenkel (1914: 48-49, cited in Zehentner 2012: 60) as follows “[U]m die wende des 12. jahrhunderts [...] [beginnt] die artikellosigkeit des verbalsubstantivs aufällig zu werden [...]. Etwa ein halbes jahrhundert später beginnen am verbal-substantiv umfängliche adverbelle erweiterungen und sogar akkusativs-objekt aufzufallen [...]”[‘around the turn of 12th century, a beginning absence of the article of the verbal substantive is noticeable [...]. About half a century later, considerable adverbial extensions of the verbal substantive as well as accusative objects begin to attract attention [...]]. A further approximation of gerunds to a completely verbal nature is represented by their acquisition of the ability to be distinguished in aspect and voice. While passive voice (e.g. Present Day English *being hunted*) starts to appear in the early 15th century, perfect aspect (e.g. Present Day English *having hunted*) can be found from the 16th century onwards (Jespersen 1978: 185; Kisbye 1971: 59; Mustanoja 1960: 573).

A major distinctive feature of present participles is their nature as being either verbal or adjectival (Callaway 1901: 141-142). Even though this proposed dichotomy in nature may be said to be inherent in participles (compare *the shining sun* (adj) and *the sun, shining through trees, lighted our path* (verbal) (Callaway 1901: 142)), a process of restriction can be generated by continual adjectival use of a form, resulting in the participle becoming an adjective proper (Callaway 1901: 142). This development can be seen in Older Scots *lufand* ‘lovingly, friendly’ or Older Scots *plesand* ‘pleasant, agreeable’, which are both listed as ‘(participial) adjective’ in

DOST/DSL (2004). In addition, Morgan Callaway's treatment of the appositive participles in Anglo-Saxon (Callaway 1901) and the absolute participles in Anglo-Saxon (Callaway 1889) are valuable and helpful in seeing that present participles are considered in their original state as being clearly separated from gerunds.

In Older Scots, there also exists a distinction between gerunds and present participles – gerunds end in *-ing*, whereas present participles end in *-and*. In the course of the Modern Scots period, this distinction in ending has been dying out. MacQueen concludes from her study of official records written in the first half of the eighteenth century that “the *-and* of the present participle was ... practically obsolete in 1700” (MacQueen 1957: 141). The loss of this distinction has been explained in *The Dialect of the Southern Counties of Scotland* (Murray 1873: 210) “In the sixteenth century, the dialect of Central Scotland, and the literary Middle Scotch founded upon it, lost the distinction between the participle and gerund, apparently on account of the final consonants becoming mute, and the vowels being then confounded, so that both forms were written *-ing*, *-in*”.

Interestingly, the distinction between gerunds, ending in *-ing*, and present participles, ending in *-and* in Older Scots is maintained in certain Modern Scots dialects, namely those of the south and Caithness (Grant & Dixon 1921; Murray 1873). Murray (1873: 211) claims that, in the Southern dialects, the two forms are still kept distinct, despite the final consonants being ‘mute’, by making the assertion “It is as absurd to a Southern Scots to hear *eating* used for both his *citing* and *eatand*, as it is to an Englishman to hear *will* used for both *will* and *shall*. When he is told that ‘John was *eating*’, he is strongly tempted to ask what kind of *eating* he proved to be”.

1.4. V-*ing*-N compounds and phrases

Once we know the category V-*ing*, we can analyse the combination V-*ing*-N. The combination V-*ing*-N is found in both compounds and phrases. Chapter 8 discusses this as a special type of attribute-head construction, in which the head noun is modified by V-*ing*. The complexity of the construction is: firstly, the attributive modifier of nouns can either be an adjective or a noun; secondly, V-*ing* can be an ascriptive V-*ing* adjective, a present participle, a gerund, or an associated V-*ing*

nominal. Furthermore, two topics must be taken into account. One topic is the attribution relations of the *V-ing-N* combination (table 1 shows the attribution relations of the *X-N* combination). In ascriptive attribution, the attribute denotes a property which is ascribed to the head noun. In associative attribution, the attribute denotes an entity, with which the head noun is in some way associated (Ferris 1993: 19 ff.; Giegerich 2005; Huddleston & Pullum 2002: 525 ff.). The second topic is the difference between English compound nouns and noun phrases since we need to figure out whether a combination *V-ing-N* is a compound or a phrase.

	Ascriptive attribution	Associative attribution
N-N	<i>toy fáctory</i> <i>boy actor</i>	<i>t óy factory</i> <i>watchmaker</i> <i>milk tooth</i> <i>hairnet</i> <i>keychain</i>
Adj-N	<i>mental h óspital</i> <i>dental fricative</i> <i>cute boy</i> <i>lovely boy</i> <i>beautiful picture</i> <i>tall mountain</i>	<i>m éntal hospital</i> <i>dental decay</i> <i>bovine tuberculosis</i>
V-ing-N	(V-ing adjectives) <i>driving instr úctor</i> <i>dancing t ácher</i> <i>sleeping baby</i> <i>sparkling water</i> <i>interesting books</i> <i>boring movies</i>	(V-ing nouns) <i>dr íving instructor</i> <i>d áncing teacher</i> <i>sleeping pill</i> <i>drinking water</i> <i>washing machine</i> <i>chewing gum</i>

Table 1. Patterns of X-N combination.

In ascriptive attribution, the attributes are typically adjectives, though ascriptive attribution can also be performed by nouns (Ferris 1993: 24). Associative attributes are typically nouns, though there are also associative adjectives (Giegerich 2015: 17-19). How the categorial status of *V-ing* and the attribution of *V-ing-N* are related to each other will be analysed.

I will discuss how the compound-phrase distinction is related to the attribution of *V-ing-N*. When is the attribution lexical, giving rise to *V-ing-N* compounds? When is it syntactic, creating phrases? There is a distinction between noun phrases and compound nouns, and there are differences between the two types of attribution. Therefore we can tell whether a *V-ing-N* is a compound or a phrase and what the attribution relation is, according to the categorial status of *V-ing*.

There are stress doublets, such as *dríving instructor* vs *driving instrúctor*. Such doublets show not only a stress contrast, but also different attribution relations, a compound-phrase distinction and a category difference in the *V-ing* form.

The attribute-head construction *V-ing-N* is found in both compounds and phrases, and the attribution relation can either be ascriptive or associative. The *V-ing* form can be an adjective – present participle or ascriptive *V-ing* adjective –, or a noun – associated *V-ing* nominal or gerund. Once the category of *V-ing* is known, the distinction between noun phrases and compound nouns, and the differences between the two types of attribution can decide whether a *V-ing-N* is a compound or a phrase and what the attribution relation is.

Chapter 2. Fundamental issues

2.1. The relationship between heads and their projections

In this thesis, one concern is the distinction of different *V-ing* forms. I argue that different *V-ing* forms belong to different word classes, which raises the question on which basis word classes are distinguished.

In the thesis, I follow previous work (e.g. Hudson 1990, 2003; Huddleston 1988; Pollard & Sag 1994) that bases word classes on the type of phrases which a word heads. For instance, let us consider nouns. Traditionally there are two main subclasses of nouns: common nouns and proper nouns, and phrases headed by them are noun phrases. Common nouns and proper nouns head phrases which have the same distribution and somewhat similar internal structures, though there are enough differences in the internal structures to justify a distinction. For example, the rules for combining determiners with common and proper nouns are different, and adjectives are hard to use as a modifier of proper nouns (Hudson 2003: 590). We need a more general analysis for nouns and noun phrases.

The function of phrases headed by a pronoun (e.g. *he, I, something*), is the same as that of phrases headed by common nouns (e.g. *water, dog*) or proper nouns (e.g. *George, Tokyo*), and the difference in internal structure of these phrases are not such as to justify a distinction of primary class (the category of nouns). All these words can be used as the head of a phrase with the same range of possible functions – as a subject, object, and so on. Noun phrases are defined by their distribution, and thus they must also include phrases headed by pronouns, and so pronouns must also be nouns (Huddleston 1988: 85; Hudson 1990: 268; Pollard & Sag 1994: 249). Thus (at least) three sub-classes of nouns are recognised: common nouns, proper nouns and pronouns – and the NP class will accordingly cover phrases headed by any of these three subclasses of nouns (Huddleston 1984: 96). Following this rationale for categorisation, I argue that gerunds also belong to the category of nouns, because phrases headed by gerunds have the same functions as NPs headed by other subclasses of nouns.

Because gerunds have the distribution of nouns, gerunds are nouns among other subcategories of nouns, i.e. pronouns, proper nouns and common nouns. This raises

the question: if gerunds are nouns, why do phrases headed by gerunds have the internal structure of verb phrases? As we know, gerunds are compatible with direct objects and predicative complements, with non-possessive subjects, with adverb modification rather than adjective modification, and with *not* negation, expressive progressive aspect or passive voice. Phrases headed by gerunds are in many ways different from ordinary NPs (phrases headed by common nouns). Other work, such as traditional grammar (e.g. Quirk et al. 1985) and Huddleston & Pullum (2002), groups gerunds as verb forms because of the internal phrase structure.

In a dependency analysis, the distribution of the whole phrase is (and must be) that of its head, so an NP is simply a noun plus any dependents that it may have. The phrase itself, however, has no theoretical status since it is totally determined by the word class and dependencies (Hudson 2003: 590). The main point is that the underlined examples below are all nouns, and it is this classification that explains why they all have the same overall distributional possibilities.

(1)

- a. Dogs are cute. (common noun – plural count noun)
- b. Water is important. (common noun – mass noun)
- c. Tom is nice. (proper noun)
- d. He is nice. (pronoun)
- e. Skiing is hard. (gerund)

The aforementioned problem disappears as soon as we notice that there is nothing which has ‘the internal structure of a noun phrase’. The only thing that all noun-headed phrases have in common is their external syntactic distribution – the fact that they can all be used freely as a subject, object, the complement of a preposition, and so on. Beyond this, the phrase’s structure depends on whether its head is a pronoun, a common noun, or a proper noun.

The syntactic part of grammar allows different types of head nouns to take different types of dependents, so the phrases that they head have different possible structures. Moreover, there do not seem to be any dependents which are possible for all nouns and only for nouns (Hudson 2003: 596-597). That is to say, distinctions between different subcategories can be made based on the internal phrase structure, but the difference in the internal phrase structure does not separate a subcategory from the

supercategory. For the same reason, I argue that gerunds differ from other subclasses of nouns in the internal phrase structure, but the difference does not separate gerunds from the category of nouns. The grammar of nouns says nothing about their dependents, so there are no dependant-facts to be inherited by gerunds. The classification of gerunds as nouns has important consequences for how they are themselves used as dependents, but none for their own dependents – in other words, phrases headed by gerunds have the distribution of noun phrases but not their internal structure.

The analysis of participles is the same. Phrases headed by participles have the same syntactic functions as adjective phrases. Thus, participles have the distribution of adjectives. The internal structure of phrases headed by participles says nothing about the distribution of participles.

In summary, the distribution of a super-category (here nouns or adjectives) that distinguishes it from others is the syntactic distribution, i.e. whether these words can be used as the head of a phrase with the same range of possible functions. Different internal phrase structures do not separate a subcategory from that super-category; they can, however, distinguish the subcategories from each other, as we have already noticed.

2.2. Categorisation

In this thesis, I will follow Malouf (1998, 2000) and Hudson (2003)'s mixed category analysis of gerunds to analyse the categorial status of gerunds. Malouf (1998) has shown that the hybrid properties of phrases headed by gerunds follow from the lexical properties of their heads just as any other endocentric phrase. What makes gerund phrases (phrases headed by gerunds) different from 'normal' NPs (NPs headed by common nouns) and VPs (finite VPs, infinitive VPs) is that gerund phrases are headed by words that belong to a mixed-category (a category which is a subcategory of two supercategories) and have the lexical properties of both of the supercategories.

According to Malouf (1998), categorial information, projected from the lexical head following the convention of standard X' theory, determines the distribution of a

phrase. Selectional information, projected from the lexical head's valence features, determines what kind of other phrases can occur in construction with that head. The account in Hudson's (2003) *Word Grammar* bears similarities to Malouf's analysis.

What is unusual about gerunds is their combination of noun-like categorial properties with verb-like selectional properties. Therefore, Malouf introduces a new lexical category which happens to share some properties of nouns and verbs. Within Head-phrase Driven Structure Grammar (Pollard & Sag 1987, 1994), the categorial (i.e. distributional) properties of gerunds are determined by their lexically specified HEAD value. Types of HEAD values can be arranged into a multiple inheritance typed hierarchy expressing the generalisations across categories. The feature of gerunds can be accounted for by the (partial) hierarchy of HEAD value in figure 1 (Malouf 1998: 88).

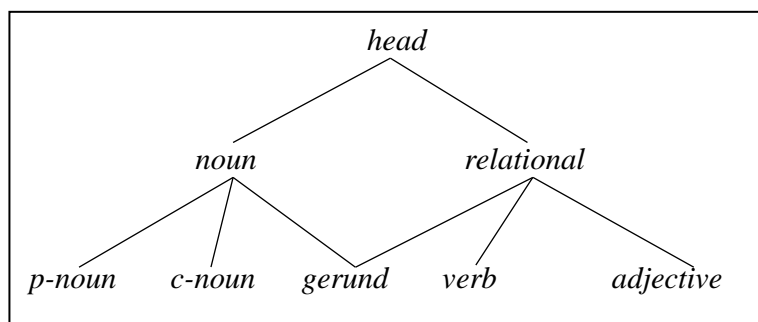


Figure 1. The hierarchy of HEAD value. (Malouf 1998: 88)

Malouf's analysis shows that in default inheritance, gerunds belong to two categories: *noun* and *relational*. A phrase headed by a gerund is able to occur anywhere an NP is selected for, i.e. gerunds have the distribution of nouns. Gerunds are a subclass of nouns along with proper nouns and common nouns (including associated *V-ing* nominals and lexical *V-ing* nouns). Common nouns, unlike gerunds, are modified by adjectives not adverbs. Adverbs potentially modify objects of the category of relationals, which includes verbs, adjectives and gerunds, among other things.

I will, in this thesis, further discuss the categorial status of gerunds. Chapter 3 will show that gerunds belong to the category of nouns because they inherit the syntactic distribution from nouns; and gerunds are different from other subcategories of nouns, just like the other subcategories of nouns are different from each other. The internal structure of phrases headed by gerunds is due to the inheritance of selectional features from the category of relationals.

I will also elaborate on the categorisation by discussing the category of adjectives, which is a subcategory of relationals. Adjectives can further be subcategorised. Figure 2 shows the expanded hierarchy.

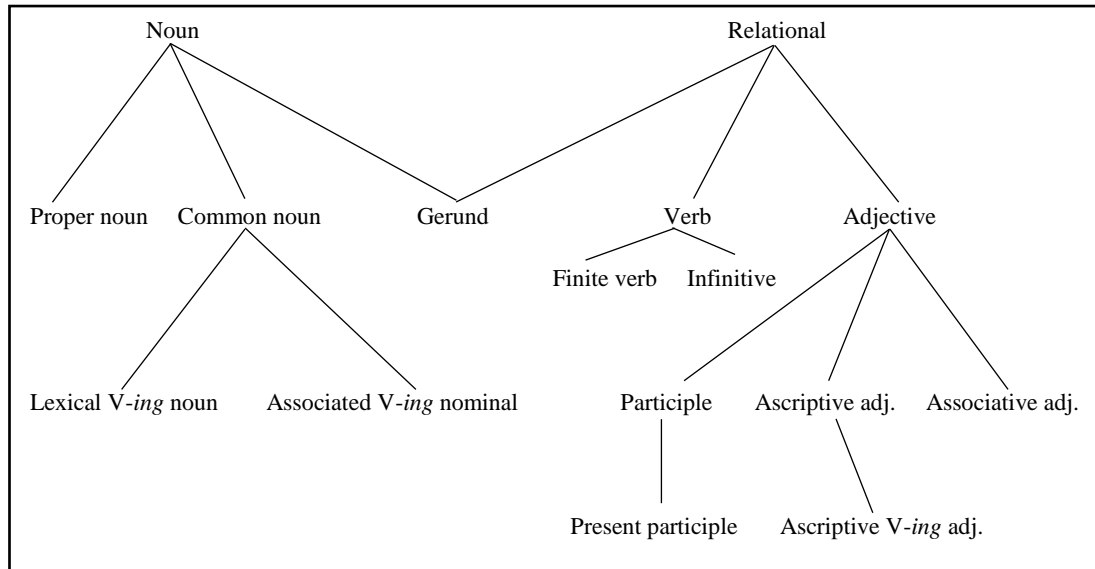


Figure 2. The expanded hierarchy of nouns and relationals.

In this thesis, the subcategorisation of adjectives is based on the semantics of the adjectives. We must keep mind that some features are not distributional, i.e. differences in some features do not distinguish (super-)categories. For example, gradability is one such feature, as discussed in Maling (1983: 259-262). Adjectives are usually gradable, whereas prepositions are typically not. However, there are non-gradable adjectives, e.g. **more dead*, **very main*, **very dental*, etc., and there are a few gradable prepositional phrases, e.g. *On a map, Rowley does not look very far from Boston*, *They seemed so in love*, *Lee is even more out of shape than I thought*. Gradability is not a criterion for distinguishing adjectives from prepositions, nor a criterion for identifying adjectives. Gradability is one of the features that have their origin in semantics. Semantics does not have to be shown in syntax, and thus, differences in semantics are not distributional and do not distinguish (super-)categories. Prototypical adjectives have property-denoting semantics. There is an already-known subclass of adjectives that do not denote properties but denote entities, namely associative adjective (Giegerich 2005, 2015). Similarly, I will argue that participles belong to the category of adjectives, though they are different from prototypical adjectives and are event-denoting rather than property-denoting. Chapter 6 is devoted to this analysis.

2.3. Prototypicality

Because gerunds have both nominal and verbal features at the same time, and participles have both adjectival and verbal features at the same time, these are cases that involve two categories. Aarts (2007) introduces a type of gradience, namely Intersective Gradience (IG). “IG involves two categories α and β , and obtains where there exists a set γ of elements characterised by a subset of α -like properties and a subset of β -like properties. [...] The intersection is between γ and the full set of α -like properties, and between γ and the full set of β -like properties” (Aarts, 2007: 79). Aarts (2007: 138-145, 210-215) analyses gerunds as a case of IG between verbs and nouns, and participles as a case of IG between verbs and adjectives.

Aarts analyses the IG between verbs and nouns by discussing three examples in (2). He analyses the nominal properties and the verbal properties of each *painting* and then decides the status of *painting* in the gradience between verbs and nouns.

(2)

- a. *Brown's deft painting of his daughter* is a delight to watch.
- b. *Brown's deftly painting his daughter* is a delight to watch.
- c. I dislike *Brown painting his daughter*.

In (2a), *painting* has five nominal properties: 1) the presence of a genitival determiner; 2) modification by an adjective; 3) the string which *painting* heads is in a typical nominal position; 4) *painting* takes a PP complement; and 5) *painting* can be followed by a restrictive relative clause. There is one verbal property for *painting*, namely the *-ing* ending. The five nominal properties outweigh the verbal ones. Aarts consequently says that (2a) represents a case of strong convergence such that *painting* is a noun converging on the verb class (2007: 210-211).

In (2b), *painting* has two nominal properties: the genitival determinative and the typical NP position. There are six verbal properties for *painting*: 1) it takes a verbal ending and 2) an NP object; 3) it is modified by an adverb, an element which can modify a verbal unit; 4) it can take negative particle *not*; 5) the italicised string can be passivised and 6) combined with a perfective auxiliary. Aarts analyses this as another case of strong convergence but classifies *painting* in (2b) as a verb approximating the noun class and the italicised string in (2b) as a clause (2007: 211).

In (2c), *painting* is more to the verbal end of the scale than (2b), by virtue of having fewer nominal properties and more verbal properties, i.e. *painting* has a (non-genitival) subject, and if *Brown* is replaced by a pronoun, it must carry accusative case (Aarts 2007: 211).

Similarly, Aarts (2007: 214-215) analyses participles as a case of IG between verbs and adjectives. Aarts looks at the string in *She is a working mother*, where *working* has verbal as well as adjectival properties. It is verbal because 1) it has an *-ing* ending and because 2) it can be modified by an adverb. It has one adjectival property in occurring attributively. *Working* is not fully verbal in that it does not take negation or aspectual marker (**not working mother*, **a having worked mother*), and elements occurring in this position cannot take an internal complement. *Working* is also not fully adjectival: it does not engage intensification (**very working mother*), or comparison (**more working mother*), and *working* cannot appear in predicative position (*this mother is working* does not count because here *working* heads a present progressive verb phrase). Aarts, therefore, considers the word *working* to be rather more verbal than adjectival.

In this thesis, I will discuss how different *V-ing* forms retain verbal features to different extents. As to the word class categorisation, I will base it purely on the syntactic distribution, as outlined in section 2.1.

The features (properties) analysed in Aarts (2007) are not all distributional features, i.e. they do not separate gerunds from the category of nouns, and they do not separate participles from the category of adjectives. Some features of nouns, such as modification by an adjective, followed by a restrictive relative clause, taking a PP complement, are actually features of a subclass of nouns, specifically, common nouns. Nouns without the features of commons are still categorially nouns, e.g. pronouns (Hudson 2003: 592-597). Some features of adjectives, such as intensification and comparison, are actually features of a subclass of adjectives, specifically, prototypical adjectives. Adjectives without the features of prototypical adjectives are still categorially adjectives, e.g. associative adjectives (Giegerich 2005, 2015).

Similarly, a prominent verbal feature that gerunds and participles share is that phrases headed by gerunds and phrases headed by participles have the internal

structure of VPs. However, the syntactic part of grammar allows different types of head noun or adjective to take different types of dependent, so the phrases that they head have different structure (Hudson 2003: 596-597). Thus, the internal structure of VPs does not contradict gerunds being nouns and participles being adjectives and in addition, analysing the participial *-ing* ending as an inflectional suffix of verbs poses problems for the analysis of the morphology of prototypical adjectives that are identical in form to participles. I will expand on this in chapters 5. Based on the syntactic distribution, I consider examples (2a-c) all to be nouns, which will be discussed in chapter 3. Specifically, the *V-ing* form in (2a) is a complex event nominal and is called associated *V-ing* nominal in this thesis; the *V-ing* form in (2b) is a gerund, specifically a POSS-*ing* gerund; the *V-ing* form in (2c) is also a gerund, specifically an ACC-*ing* gerund.

In terms of semantics, nouns typically denote entities, e.g. *animal, person, country*, etc. Gerunds and associated *V-ing* nominals, however, are complex event-denoting nouns. Compare *V-ing* nouns that denote an entity (e.g. *a tall building, several nice paintings*) and associated *V-ing* nominals (e.g. *The building of the bridge took three years, Tom's deft painting of his daughter is a delight to watch*) or gerunds (e.g. *Building the bridge took three years, Tom deftly painting his daughter is a delight to watch*), which denote an event. Adjectives typically denote properties, but there are also adjectives that are not property-denoting. Associative adjectives denote entities (e.g. *bovine disease, dental decay*), compared to prototypical adjectives, which are property-denoting (e.g. *severe disease, slow decay*); similarly, participles denote events (e.g. *a running boy, The movie is boring me to tears, The chicken is cooked by Mary*), compared to prototypical adjectives, which are property-denoting (e.g. *a shy boy, The movie is very boring, The chicken seems barely cooked*). Note there is a property of syncretism between the participles and the prototypical adjectives (*boring, cooked*, etc.), which will be further analysed in the thesis.

However, semantics does not have to be expressed in syntax, i.e. semantic difference does not entail a difference that separates categories. Therefore, gerunds and associated *V-ing* nominals are categorially nouns, even though they have event-denoting semantics, in contrast to entity-denoting semantics, which prototypical nouns have. Similarly, unlike prototypical adjectives, which are property-denoting,

participles have event-denoting semantics and associative adjectives have entity-denoting semantics, but they belong to the category of adjectives.

2.4. The analysis of gerunds and participles in this thesis

The detailed analysis starts from chapter 3 with the discussion of gerunds. On the one hand, phrases headed by gerunds have the same functions as NPs, functioning as the argument of a sentence, or in other positions that allow NPs. On the other hand, phrases headed by gerunds have the internal structure of VPs, i.e. gerunds have argument structure and are modified by adverbs.

I will compare gerunds with associated *V-ing* nominals. Phrases headed by gerunds and phrases headed by associated *V-ing* nominals have the same syntactic functions, but there are structural differences between phrases. Gerunds and associated *V-ing* nominals have the same syntactic distribution and they are categorially nouns. Associated *V-ing* nominals are common nouns, compatible with prepositional objects, articles, and adjectival modification. As heads of NPs, associated *V-ing* nominals take determiners, adjective modifiers and PP complements. Associated *V-ing* nominals, like other common nouns that are derived from verbs (e.g. *acceptance*, *arrival*, *excitement*, *exposure*, *destruction*, *expansion*, *leakage*, *recovery*, *growth*, *productivity*, etc.), take a different range of dependents from verbs. Gerunds are different from common nouns because the internal structure of phrases headed by gerunds is that of VPs. In this thesis, I follow Malouf (1998)'s mixed-category analysis of gerunds. I will argue that gerunds are nouns and explain why phrases headed by gerunds have the internal structure of VPs although gerunds belong to the category of nouns. The morphology of gerunds and associated *V-ing* nominals will be discussed in chapter 5.

Chapter 4 focuses on the analysis of participles. Present participles, like gerunds, are in the form of *V-ing* and phrases headed by them have the internal structure of VPs, taking a direct object, adverb modification, etc. However, phrases headed by participles have the same syntactic functions as AdjPs. I argue that participles are adjectives because they have the distribution of adjectives. Like other AdjPs, phrases

headed by participles can function as a predicative complement, a modifier of nouns, and modifier of verbs or clauses.

One of the syntactic functions, predicative complementation, needs to be further explained. Some grammars, such as traditional grammar (e.g. Quirk et al. 1985), Huddleston & Pullum (2002), differentiate the copular verb *be* (e.g. *He is nice*, *The book is boring*) and the auxiliary verb *be* (*He is playing the piano*, *He is running*), and would not consider present participles to be the predicative complement of *be*. However, the morphosyntax of the verb *be* is the same. What makes a difference is the syntacticosemantic structure: 1) what complementation *be* takes; 2) the semantics of the complement. The complementation that *be* takes can be NPs (e.g. *His mother is a dancer*, *Tom is the winner*), AdjPs (e.g. *He is nice*, *The speech is moving*, *The train is moving*, *He is running*), and PPs (e.g. *He is in the garden*). The semantics of the complement can be equative (e.g. *He is Tom*, *His favourite food is ice cream*) specificational (e.g. *He is nice*, *The speech is moving*), predicational (e.g. *The train is moving*, *He is running*). I argue that syntactically, the complementation of *He is nice* and *He is running* is the same, and both *nice* and *running* are adjectives as a predicative complement of the verb *be*. The difference between the two sentences is only in semantics, not in syntax. *He is nice* is stative, where *nice* denotes the property of the subject; whereas *He is running* is dynamic, where *running* denotes the event of the subject. The progressive aspect of *be* + present participle is simply analysed as the composition of the predicate verb *be* and the event-denoting semantics of present participles.

The different complementation actually helps to distinguish gerunds from present participles. Compare a) *His hobby is playing the piano* and b) *His sister is playing the piano*. *Playing* in a) is a gerund, and *playing the piano* is an NP, functioning as the subject complement. *Playing* in b) is a present participle, and *playing the piano* is an AdjP, functioning as the predicative complement. The syntactic diagnostics for the different complementation is whether the sentence can be reversed: we can have *Playing the piano is his hobby* but not **Playing the piano is his sister*.

Participles are categorially adjectives, and the differences between participles and prototypical adjectives have an explanation without appealing to a categorial distinction. There are prototypical adjectives that are in the form of participles, e.g.

annoying, boring, charming, confusing, exciting, interesting, tiring, etc. Chapter 5 discusses the morphology of participles and the corresponding prototypical adjectives, under the assumption that participles are inflected forms of verbs. If participles and adjectives were separate categories, participles being inflected forms of verbs, there does not seem to be a plausible, single morphological explanation for all of the prototypical adjectives that are in participle form to arise in the system. I will show in chapter 6 how the analysis of participles being adjectives solves this morphological problem.

In addition to present participles, another type of participles will be discussed in this thesis: the past participles. ‘Past participles’ is the term for the *V-ed* form⁶ and the irregular forms (e.g. *drunk, broken, lost, hurt, sung*) that have the same syntactic distribution as present participles.

Similar to the combination *be* + present participle, which expresses the progressive aspect, the past participle is used in two constructions – perfect aspect and passive voice, where the phrase headed by the past participle functions as the predicative complement of the verb *have* and *be* respectively. The perfect aspect is analysed as the composition of the predicate verb *have* and the event-denoting semantics of the past participle; the passive voice is analysed as the composition of the predicate verb *be* and the event-denoting semantics of the past participle.

⁶ Past participles are not the past tense form even though they are commonly of the same form, compare the past participle *He has walked home* and the past tense form *He walked home*, or *The topic was mentioned* and *They mentioned the topic*. Past participles and past tense forms can also be distinct in form from irregular cases, for instance, compare the past participle *He has run home* and the past participle *He ran home*, or *The wine was drunk by Mary* and *Mary drank the wine*. I analyse participles as adjectives in this thesis, thus past participles are derived from verbs, whereas past tense forms are inflected verb forms, i.e. for *V-ed* forms, the suffix of past participles is a derivational suffix and the suffix of the past tense form is an inflectional suffix.

Chapter 3. Gerunds

This chapter focuses on the discussion of gerunds. The features of gerunds are compared to those of associated *V-ing* nominals. Gerunds and associated *V-ing* nominals are identical in form; both of them have a meaning that is directly derivative from the embedded verb, describing the event associated with the verb; and they both have the distribution of nouns. Let us compare *Writing a book is difficult* and *The writing of a book is difficult*: both the phrase headed by the gerund and the phrase headed by the associated *V-ing* nominal function as the subject of the sentence, denoting an event ‘write a book’. However, the internal structure of the phrases is different. Phrases headed by gerunds have the internal structure of VPs, whereas phrases headed by associated *V-ing* nominals have the internal structure of ordinary NPs, i.e. NPs headed by common nouns. This chapter studies these two types of *V-ing* nouns respectively, discussing their similarities, and explains the reason for their difference in the internal phrase structure.

3.1. Associated *V-ing* nominals

3.1.1. Nominal properties of associated *V-ing* nominals

Associated *V-ing* nominals can fill the typical slots of a noun (Wasow & Roeper 1972: 45). They are common nouns, as they can be freely preceded by determiners, adjective modifiers, accompanied by an *of* prepositional phrase or a relative clause, and negated by *no*.

Let us analyse the nominal properties of associated *V-ing* nominals, e.g. *His deft painting of the mountain is a delight to watch*, *The building of a bridge takes three years*. Firstly, the phrases headed by associated *V-ing* nominals function as the subject of the sentences, which is a typical position that NPs fill. Secondly, the associated *V-ing* nominal can take a determiner – either a possessive (*his painting*) or an article (*the building*). Thirdly, an associated *V-ing* nominal takes a prepositional phrase complement. Fourthly, an associated *V-ing* nominal is modified by an adjective.

In addition, associated *V-ing* nominals, like other common nouns, are negated by *no*, for example:

- (1)
- a. No painting of a picture took place.
No such event took place.
 - b. No parking!
No smoking!
No cigarettes!

Associated *V-ing* nominals have count noun or quantised noun-like behaviour (Asher 1993: 18). The sentence **Hitting of Fred was unacceptable* is ungrammatical, its ungrammaticality patterns with **Ship is coming into the harbour*, in which a count noun occurs without a determiner. With determiners or quantifier modification, the sentences are grammatical:

- (2)
- a. The hitting of Fred was unacceptable.
 - b. Many violent sackings of the city took place.
 - c. Every burning of charcoal requires oxygen.

However, associated *V-ing* nominals can be either definite or indefinite (Colen 1984: 78-79). If it is indefinite, a determiner is not required, even though associated *V-ing* nominals have a count noun or quantised noun-like behaviour.

- (3)
- a. The unsafe flying caused the aircraft to crash. (definite)
 - b. Unsafe flying caused the aircraft to crash. (indefinite)

Note that the indefinite associated *V-ing* nominal can have several readings. *Unsafe flying caused the aircraft to crash* may have an existential reading, i.e. someone's unsafe flying aircraft x caused x to crash. It may also have a generic reading, i.e. unsafe flying typically was the cause of aircraft crashes (Asher 1993: 168; Weir 1986).

3.1.2. The verbal heritage of associated *V-ing* nominals

The previous analysis shows that associated *V-ing* nominals belong to the category of nouns and are common nouns. In one aspect associated *V-ing* nominals still retain

something of their verbal heritage, namely the argument structure representation of the embedded verb (Asher 1993: 19).

Associated *V-ing* nominals are complex event nominals and have argument structure representation that shows the same argument-taking properties as verbs in that their argument is fundamentally obligatory, though they cannot directly accept arguments, because they are not theta-markers or they are defective theta-markers and require the aid of a preposition (Grimshaw 1990: 70-71).

When combined with associated *V-ing* nominals, possessives and certain prepositional phrases play their role as an argument when we think of the sentence corresponding to this nominalisation. The associated *V-ing* nominal corresponds to the predicate, i.e. the verb from which it derives. The NP in the possessive or the possessive pronoun attached to the associated *V-ing* nominal corresponds to the subject of the sentence, while the NP in a prepositional phrase headed by the preposition *of* corresponds to the direct object. For example, the phrase headed by an associated *V-ing* nominal *Brown's painting of the mountain* corresponds to the sentence 'Brown painted the mountain'. The subject of the sentence can also be an NP in a *by* prepositional phrase, e.g. *the painting of the mountain by Brown*. If the embedded verb of the *V-ing* is an intransitive verb, e.g. *The door banged*, the subject of the sentence can correspond to the NP headed by an *of* prepositional phrase, *the banging of the door*, as well as the NP in possessive, *the door's banging*.

3.1.3. Comparison with other common nouns derived from verbs

English deverbal nominalisations are characterised by the following exponents: *-ing*, the Latinate suffixes, such as *-(at)tion*, *-ment*, *-ance/-ence*, *-age*, *-al*, *-ure*, *-y*⁷, and conversion. There are blocking effects (Rainer 1988, 2005) that will be taken into consideration later, however, *-ing* is attested on native as well as Latinate roots/stems, and we encounter pairs such as *civilisation/civilising*, *achievement/achieving*, *acceptance/accepting*, *loss/losing*, etc. There is no blocking effect since they have different interpretations: the former is a result, and the latter is a process. The

⁷ Apart from these, there are a number of suppletive forms of nominalisation, such as *complain – complaint*, *fly – flight*, *grow – growth*, *laugh – laughter*, *lose – loss*, *pursue – pursuit*, *give – gift*, etc. (Adams 1973; Marchand 1969).

examples with associated *V-ing* nominals may sound slightly clumsy, but there are abundant examples found in the Oxford English Dictionary. There exists a discrepancy between associated *V-ing* nominals and other deverbal nouns as regards meaning, noticed by Quirk et al. (1985: 1551).

Associated *V-ing* nominals are complex event nominals, which name a process or event (Grimshaw 1990: chapter 3, 4). In contrast, other deverbal nouns, which do not take the *-ing* suffix, have a meaning that is relatively remote from the conduct of action itself, i.e. the meaning of those deverbal nouns are not directly derivative from the embedded verbs, although some such deverbal nouns can at their most verbal refer to the action as a whole event, including its completion. For example, the non-*V-ing* nominal of the verb *give* – *gift* denotes x such that y causes x to come into z's possession, whereas the associated *V-ing* nominal *giving*, denotes an event in which y causes x to come into z's possession (Grimshaw 1990: 95). Compare the examples of an associated *V-ing* nominal and those of another noun that is derived from the same verb:

(4)

- a. the civilisation of Ancient Greece
the civilising of the world
- b. The reopened Royal Festival Hall is a rare achievement of modesty and taste.
He did not count success by the acquiring of money and achieving of fame.
- c. Mrs Mackie nodded her acceptance of this apology.
Norms regarding the accepting of food and water are indications of ritual in the caste hierarchy.
- d. His exploration of the mountain was a success.
His exploring of the mountain is taking a long time.

Asher (1993: 167) finds that on an event reading of associated *V-ing* nominals, the nominalising suffix makes an aspectual and semantic contribution to the information content of the nominal. He proposes that associated *V-ing* nominals must denote eventualities; stative verb complexes do not have associated *V-ing* nominals since states do not have well-defined, correlated activities.

- (5)
- a. ??John's knowing of calculus.
 - b. ??John's lacking of confidence.

It is difficult to interpret the nominals in (5); no process or activity is associated with the state of knowledge or the state of lack. Instead of associated *V-ing* nominals, other derived nominals are preferred, e.g. *John's knowledge of calculus*, *John's lack of confidence*.

In contrast to other deverbal nouns, associated *V-ing* nominals are not polysemous between process and result readings. Some deverbal nouns can have either process or result interpretation, e.g. *examination*, *destruction*, *development*, etc. There is no interpretation of associated *V-ing* nominals as the result of an event (Pustejovsky 1995: 168). For example,

- (6)
- a. *The arriving of John was greeted with mixed reactions.
The arrival of John was greeted with mixed reactions.
 - b. *The destroying of the city was widespread.
The destruction of the city was widespread.
 - c. *The constructing of the house has adequate stability.
The construction of the house has adequate stability.

Associated *V-ing* nominals, unlike other deverbal nouns, do not permit passive without passive morphology, i.e. associated *V-ing* nominals can only have an active reading. There are no associated *V-ing* nominals corresponding to objective reading (Abney 1987: 136; Taylor 1996: 274-275). Compare the associated *V-ing* nominals and the other derived form of the verbs⁸:

- (7)
- a. their careful reconstructing of the city
their careful reconstruction of the city
 - b. *the city's careful reconstructing
the city's careful reconstruction

⁸ Here, the role of the *of* complement corresponds to the direct object of the verb. The *of* complement also corresponds to the subject of intransitive verbs, in which there is no objective reading, such as *the banging of the door*, *the door's banging*.

(8)

- a. the enemy's destroying of the city
the enemy's destruction of the city
- b. *the city's destroying (by the enemy)
the city's destruction (by the enemy)

(9)

- a. the extremists' assassinating of the president
the extremists' assassination of the president
- b. the president's assassinating (only active reading, the president is the subject of the assassination, not the object)
the president's assassination (both active and objective readings)

The two different expressions also differ in the aspectual character of the nominalisation. For example, in (8a) *The enemy's destruction of the city* reifies the event, construed through its temporal stages; whereas *The enemy's destroying of the city* focuses only on the medial stage, construing it as an imperfective process, without invoking its beginning or end.

In addition, unlike other deverbal nouns, associated *V-ing* nominals do not permit temporal possessive determiner (Abney 1987: 136), compare:

(10)

- a. the renewing of our contract this year
the renewal of our contract this year
- b. *this year's renewing of our contract
this year's renewal of our contract

There are counterexamples in which the associated *V-ing* nominal has a temporal determiner; for example, *A few days' living in this place would see off the remainder of his bank balance*⁹. However, according to Taylor (1996: 275), some associated *V-ing* nominals, by virtue of their role in established locutions, have begun to partake of the properties of standard lexicalised deverbal nouns. A plausible explanation for the example is that *living* (cf. its use in the standard locutions *cost of living*, *standard*

⁹ Adjective insertion can confirm that the example is not a gerund: e.g. *a few days' (extravagant/*extravagantly) living in this place*.

of living) has begun to take on the properties of a lexical noun, i.e. *living* has no direct connection to the embedded verb *live*.

3.2. Gerunds

On the one hand, phrases headed by gerunds have the same functions as NPs, occurring in characteristic positions that allow NPs; on the other hand, phrases headed by gerunds have the internal structure of VPs, i.e. gerunds take direct object, adverb modification, etc. e.g. *Drinking water regularly is healthy*, *He enjoyed having dinner alone*, etc. This section analyses the distribution of gerunds and explains the features that distinguish gerunds from associated *V-ing* nominals.

3.2.1. Malouf (1998) – the mixed-category analysis

Malouf (1998) introduces the mixed-category analysis of gerunds. Categorical information, projected from the lexical head following the convention of standard X' theory, determines the distribution of a phrase. Selectional information, projected from the lexical head's valence features, determines what kind of other phrases can occur in construction with that head.

Malouf analyses gerunds as a new lexical category which shares some properties of nouns and some properties of verbs. Gerunds have noun-like categorial properties but verb-like selectional properties. Within Head-phrase Driven Structure Grammar, the categorial (i.e. distributional) properties of gerunds are determined by their lexically specified HEAD value. The distribution of gerunds can be accounted for by the (partial) hierarchy of HEAD value in figure 3, repeated from figure 1 (Malouf, 1998: 88).

Malouf's analysis shows that in default inheritance gerunds belong to two categories: *noun* and *relational*. A phrase headed by a gerund is able to occur anywhere an NP is selected for, i.e. gerunds have the distribution of nouns. Gerunds are a subclass of nouns. However, unlike common nouns, gerunds are modified by adverbs not adjectives. Adverbs potentially modify objects of the category of relationals, and the category of relationals includes verbs, adjectives and gerunds.

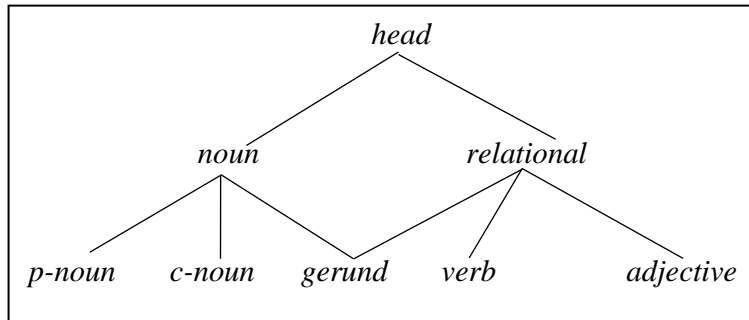


Figure 3. The hierarchy of HEAD value. (Malouf 1998: 88)

Firstly, verbs are a distinct subclass of relationals disjoint from gerunds; and secondly, gerunds have the distribution of nouns. Therefore gerunds do not belong to the category of verbs, i.e. a gerund is not an inflected form of a verb.

The following sections will analyse that gerunds inherit distribution from nouns. Also, gerunds inherit selectional features from relationals, being theta-markers and taking adverb modification. Because gerunds are derived from verbs and describe events, i.e. they have argument structure representation, gerunds can theta-mark all the arguments. Besides, gerunds are modified by adverbs. Therefore, phrases headed by gerunds have the internal structure of VPs.

3.2.2. Distribution of nouns

3.2.2.1. The same functions as NPs

Phrases headed by gerunds have the same syntactic functions as NPs, and thus gerunds have the distribution of nouns. Like other NPs, phrases headed by gerunds can fill argument positions and other positions that allow NPs.

A. Subject:

Phrases headed by gerunds can function as the subject of a sentence. Compare the sentences in (11) whose subject are phrases headed by gerunds and a sentence whose subject is an NP headed by a common noun, pronoun or proper noun, e.g. *The dog is my best friend, He is my best friend, Sue is my best friend.*

(11)

- a. Playing the piano is my hobby.
- b. Running regularly is good for our health.

- c. Telling jokes is Willem's favourite pastime.
- d. John liking Mary is natural.
- e. Fiona's telling lies upset her boyfriend.
- f. His crossing the street dangerously shocked everyone.
- g. Michael's losing the game disappointed his teammates.

B. Subject complement

Same as other NPs, phrases headed by gerunds can function as the subject complement. Example (12a) *My hobby is playing the piano* is parallel to *My favourite musical instrument is the piano*, where the subject complement is an NP headed by a common noun.

(12)

- a. My hobby is playing the piano.
- b. The last thing I do every night is reading a short story.
- c. The funniest thing was trying to hide in the coal box.
- d. What I really like is travelling to Europe.
- e. His goal this month is selling two cars.
- f. Her problem is eating starchy food.

Phrases headed by gerunds functioning as the subject complement should be distinguished from a superficially same combination, e.g. *My friend is playing the piano*, where the V-ing form is a present participle and the phrase *playing the piano* functions as the predicative complement of *be*, and the combination *be* + present participle expresses the progressive aspect. The subject complement structure is the reverse construction of NPs as the subject followed by the verb *be*, e.g. *My hobby is playing the piano* and *Playing the piano is my hobby*. Present participles do not allow the reverse construction, e.g. **Playing the piano is my friend*.

C. Direct object

Phrases headed by gerunds, like other NPs, can function as the direct object of a sentence. For example, *We discussed visiting Fred* is parallel to *We discussed the plan*.

(13)

- a. We discussed visiting Fred.
- b. We prefer eating at home.
- c. I admired his weeding the garden in the rain.
- d. Susan avoids serving red wine with fish.
- e. He regretted telling you the truth.

Note that verbs such as *know* do not select phrases headed by gerunds as complements, despite being transitive (De Smet 2010: 1161). Here the distributional rule underspecifies actual usage. The discrepancy can be accounted for on functional grounds. As the direct object of the predicate verb, gerunds semantically underspecify the event they refer to, which means that in order to temporally and modally situate the event that the gerund denotes, an interpreter must maximally draw on the semantics of the complement-taking predicate (cf. Noonan 1985 on dependent and independent time reference). Verbs like *know* themselves very much underspecify the temporal and modal orientation on their complement and are therefore inappropriate with gerunds (De Smet 2008). For instance, *He imagines/*knows travelling to Europe*, *imagine* can take a controlled gerund complement, whereas *know* cannot. The reason is that *imagine*, unlike *know*, implies that the event in the complement is necessarily situated in a modal space of unreality, which reduces the need for modal and temporal grounding.

Phrases headed by gerunds in the direct object position should be distinguished from a superficially identical structure that is formed with present participles, e.g. *I kept singing the song*. The *V-ing* form in *I kept singing the song* is a present participle, heading a phrase that functions as the predicative complement of the aspectual verb *keep*. Whether *V-ing* is a gerund or a present participle can be tested by passivisation, because direct objects can be passivised, whereas predicative complements cannot.

(14)

- a. We discussed visiting Fred.
Visiting Fred was discussed (by us).
- b. I kept singing the song.
*Singing the song was kept by me.

Phrases headed by gerunds can also function as the object in a sentence of SVOC structure, i.e. the object takes a complement, e.g. *You must find working here difficult, This made obtaining a loan virtually impossible, They considered solving this problem an impossible task.*

D. Indirect object

Like other NPs, phrases headed by gerunds can function as the indirect object of ditransitive verbs. For example, we can replace the phrase headed by the gerund in (15) with an NP headed by a common noun, proper noun or pronoun; then we have *Mary gives her hobby all her energy and time, He owes Susan his life, He brought me some food.*

(15)

- a. Mary gives playing the piano all her energy and time.
- b. We have given moving to Sydney a great deal of thought.
- c. Tom gives spending time with his family priority.
- d. He owes exercising regularly his life.
- e. He brought working hard till midnight joy.

E. Complement of prepositions

Phrases headed by gerunds can follow prepositions, which are positions that allow NPs. Phrases headed by gerunds can function as the prepositional complement. Compare (16a) and *We should concentrate on the movie*; compare (16f) and *They were surprised at his progress*. Similarly, being a complement to a preposition in a prepositional phrase adjunct also shows that gerunds have the distribution of nouns. Example (16g) and (16h) parallel examples with NPs headed by common nouns *I'll go home after the performance, She was arrested for child abuse.*

(16)

- a. We should concentrate on solving the problem.
- b. I am looking forward to seeing you.
- c. She is good at playing the piano.
- d. We are used to not having a car.
- e. We agreed on travelling to Europe next month.
- f. They were surprised at his winning the game.

- g. I'll go home after finishing my work.
- h. She was arrested for stealing money.

F. Gerunds in extraposition

We must recognise a phrase headed by a gerund when it is extraposed (Quirk et al. 1985: 1392). For instance, *It was easy getting the equipment loaded* is transformed from *Getting the equipment loaded was easy*. In the extraposition sentence, the adjective *easy* follows preparatory *it*, and the phrase *getting the equipment loaded* is the extraposed subject. Note that the phrase is not the complement of the adjective. Prototypical adjectives¹⁰ normally do not take NPs as a complement – one exception is *worth*, which can take an NP complement, e.g. *The film is worth seeing*, *Your idea is worth giving some further thought to*, *That is worth a fortune*.

(17)

- a. It is pointless buying so much food.
- b. It is scarcely worthwhile going home.
- c. It is no use telling him that.
- d. It would not be any good trying to catch the bus.
- e. It was nice meeting you.
- f. It is not much fun watching soap opera for the whole weekend.
- g. It is pleasant walking around the city in the summertime.

To-infinitives and finite clauses can also fill some argument positions, shown in (18). However, unlike gerunds, they do not have the distribution of nouns because they have some functions that NPs do not have, shown in (19).

(18)

- a. To work hard is very important.
- b. That we work hard is very important.
- c. What I want now is to take a nap.
- d. I know that you want to take a nap.

¹⁰ Prototypical adjectives are adjectives that denotes properties, e.g. **He is happy the audience*. There are adjectives that denote events, i.e. participles, can take NP complements, e.g. *He is charming the audience*, *He is writing a book*. The categorial status of participles and the difference between participles and prototypical adjectives will be discussed in chapters 4 and 6.

(19)

- a. He locked the door to keep us out.
- b. He asked me to go to work.
- c. I am happy to take a nap.
- d. He is the person that we talked about.

Besides, NPs have certain functions that are not shared by *to*-infinitives or finite clauses. Let us compare NPs headed by gerunds, common nouns, proper nouns or pronouns with infinitives or finite clauses. Firstly, NPs can be a prepositional complement, whereas *to*-infinitive and finite clauses cannot.

(20)

- a. It is a matter of life and death.
It is a matter of starting a new life.
*It is a matter of to start a new life.
- b. We depend on Tom.
We depend on Tom's solving the problem.
*We depend on that Tom will solve the problem
- c. I am concerned about him.
I am concerned about his drinking too much.
*I am concerned about that he drinks too much.

Additionally, NPs can occur in a sentence internally, whereas *to*-infinitives and finite clauses are generally prohibited from occurring in a sentence internally (Kuno 1973; Ross 1967; Pullum 1991: 767), compare the following sentences:

(21)

- a. I know that his habit annoys you.
I know that his drinking too much annoys you.
*I know that that he drinks too much annoys you.
- b. That John pleased her was obvious.
That John's showing up pleased her was obvious.
*That that John showed up pleased her was obvious.
- c. I want it to remain a secret.
I want Bill's leaving to remain a secret.
*I want that Bill left to remain a secret.

- d. Why does his drinking too much annoy you?
*Why does that he drinks too much annoy you?
- e. Why is breaking the seal not wise?
*Why is to break the seal not wise?

The extraposition of finite clauses is different from that of NPs.

(22)

- a. *It annoys Mary her husband drinking too much.
*It annoys Mary her husband's habit.
It annoys Mary that her husband drinks too much.
- b. *It amazed me John's singing that aria.
*It amazed me John's rendition of that aria.
It amazed me that John sang that aria.

3.2.2.2. Differences between gerunds and common nouns

Phrases headed by gerunds have the same functions as NPs. However, there are exceptions that a position in a sentence allows NPs headed by gerunds but not NPs headed by common nouns. For instance (23a, b), the sentences are ungrammatical when the NPs headed by common nouns are extraposed. Or as in (23c), *prevent ... from* does not choose an NP headed by a common noun.

(23)

- a. It is no use complaining about it.
*It is no use the complaint. (The complaint is no use.)
- b. It is pointless buying so much food.
*It is pointless the purchase of so much food. (The purchase is pointless)
- c. They prevent us from finishing it.
*They prevent us from its completion.

(examples adapted from Hudson 2003: 597)

Gerunds have the distribution of nouns, but they are different from common nouns. According to Pullum (1991: 769), unlike common nouns, gerunds do not permit a restrictive relative clause to modify them.

(24)

*They mentioned my leaving early that you thought they wouldn't notice.

They mentioned my early departure that you thought they wouldn't notice.

Another piece of evidence for gerunds being different from common nouns is that unlike common nouns, gerunds do not allow for external attachment of the possessive clitic -'s, despite the fact that -'s can attach to almost any category that falls at the end of NPs (Pullum 1991: 770).

(25)

a. *Your running (regularly)'s advantage is that you will be healthy and energetic.

The advantage of your running regularly is that you will be healthy and energetic.

b. *Not agreeing with (his parents)'s point is to show his independence.

The point of not agreeing with his parents is to show his independence.

There is another analysis for such a difference. The fact that gerunds do not allow external attachment of the possessive clitic -'s might be due to other factors. Note that V-*ing* forms do not make good possessors even when they are common nouns, i.e. associated V-*ing* nominals: *[*The singing*]'s effect on them was heart-warming, *[*the rioting*]'s polarisation of the country. Besides, NPs headed by other deverbal common nouns are also prevented from occurring before a possessive clitic -'s, e.g. **John's rejection of the plane's disruption of the meeting could have been avoided*. As Taylor (1995: 193) puts it, "the ease with which nouns can designate a 'possessor' appears to correlate with the closeness to the semantically defined prototype."

Furthermore, two facts about anaphora possibilities that are lacking in gerunds also illustrate the point that gerunds are different from common nouns. Firstly, null anaphora, i.e. ellipsis, is not observed in gerunds, as pointed out by Malouf (1998: 51, following Abney 1987: 119). An ordinary NP following the possessive can be null, but this does not work on NPs headed by gerunds. *One* anaphora is also not observed in gerunds. While an ordinary NP can be replaced when an antecedent is contextually available, an NP headed by a gerund cannot (Pullum, 1991: 770). Compare the following examples.

(26)

- a. John's success in the exam was surprising, and Bill's was even more so.
*John's passing the exam was surprising, and Bill's was even more so.
- b. I think Apple's system is more user-friendly than the other one.
*I think Apple's firing a large number of staffs was less defensible than the other one.

In summary, section 3.2.2 illustrates that gerunds inherit the distribution from nouns, and thus belong to the category of nouns, although there are cases where gerunds are different from common nouns, as shown in section 3.2.2.2.

However, there are more important differences between gerunds and common nouns, which will be discussed in the following section. Unlike NPs headed by common nouns, the internal structure of phrases headed by gerunds patterns that of VPs. We will discuss and explain the structural differences between NPs headed by gerunds and NPs headed by common nouns, specifically associated *V-ing* nominals.

3.2.3. The internal structure of NPs headed by gerunds

Phrases headed by gerunds are NPs because of their occurring in characteristic NP positions; however, their internal structure patterns in many respects after VPs. For instance, in *She disapproved of his being so extravagant*, the gerund *being* is like a finite verb in that it enters into the construction with an adjective phrase, functioning as the predicative complement – the relation is like that *he was so extravagant*. In *She resented being demoted*, *She regretted having told him the truth*, *being* and *having* are related to *demoted* and *told* as the tensed verbs *was* and *has* are in the finite VPs *was demoted* that expresses the passive voice, and *has told* that expresses the perfect aspect. In *She enjoys playing the piano*, the gerund *playing* takes a direct object same as the finite verb *plays* in *She plays the piano*.

Both associated *V-ing* nominals and gerunds have the distribution of nouns. They differ in the internal structure of the NPs headed by them.

Associated *V-ing* nominals are common nouns, being compatible with plural morphology, prepositional complements, determiners and adjective modification. In contrast, phrases headed by gerunds have the internal structure of VPs. The structural

differences between NPs headed by gerunds and NPs headed by associated *V-ing* nominals are listed below.

- A. Object: gerunds can take a direct object, whereas associated *V-ing* nominals require a preposition *of*.

(27)

- a. He enjoys learning Chinese.
He enjoys the learning of Chinese.
- b. Peter's telling the same story all the time annoyed us.
Peter's telling of the same story all the time annoyed us.

If the embedded verbs do not take complementation, i.e. intransitive verbs, the *V-ing* form can be ambiguous. For example, *Running is healthy*, *Skiing is fun*, *V-ing* can either be a gerund or an associated *V-ing* nominal because they cannot be distinguished from the difference in complementation. However, gerunds and associated *V-ing* nominals are also distinct in other ways. Compare the gerund in *Running regularly is healthy* and the associated *V-ing* nominal in *Regular running is healthy*, the gerund in *Skiing dangerously is not fun* and the associated *V-ing* nominal in *The (dangerous) skiing is not fun*.

- B. Modification: gerunds are modified by adverbs but not adjectives, whereas associated *V-ing* nominals are modified by adjectives^{11 12} but not adverbs.

(28)

- a. I detest singing loudly.
I detested loud singing.
- b. He was accused of driving dangerously.
He was accused of dangerous driving.
- c. Eating vegetables regularly is good for health.
*The eating of vegetables regularly is good for health.
The regular eating of vegetables is good for health.
*The eating of vegetables regularly is good for health.

¹¹ Certain adverbs can occur as postmodifiers with derived nominals and even with some underived ones (Payne, Huddleston & Pullum 2010). For instance, *the opinion generally of the doctors*, *a food shortage nationally*, *the people locally*. However, there are other structural difference that enables the analysis of distinction between gerunds and *V-ing* associated nominals if they are both modified by adverbs.

¹² There are exceptions, e.g. *I'm tired of all that feeding the animals every day* (Quirk et al. 1985: 1064). Aarts (2007: 228-233) discusses such exceptions and calls such examples 'true hybridity'.

C. Negation: gerunds are negated by *not*, whereas the negation of associated V-*ing* nominals consists of *non-* or *no*.

(29)

- a. They are talking about Henry's not singing the national anthem.
They are talking about Henry's non-singing of the national anthem.
- b. Not drinking alcohol for a week is vital to your recovery.
No drinking of alcohol for a week is vital to your recovery.
- c. *Not drinking of alcohol for a week is vital to your recovery.
*No drinking alcohol for a week is vital to your recovery.

D. Determiners: gerunds cannot be introduced with determiners other than possessive specifier (possessive pronouns or clitic 's), whereas associated V-*ing* nominals also allow other determiners.

(30)

- a. His/John's killing a dog upset Tom.
*The killing a dog upset Tom.
The/A/Every killing of the dog upset Tom.
- b. *John enjoyed the/this singing the song.
John enjoyed the/this singing of the song.

E. Numbers: gerunds cannot be pluralised, whereas associated V-*ing* nominals can.

(31)

- a. *Sightseeings UFOs make Mary nervous.
Sightseeings of UFOs make Mary nervous.
- b. *Many sackings the city took place from 1000 to 340 BC.
Many sackings of the city took place from 1000 to 340 BC.

F. Aspect: gerunds permit aspect markers, whereas associated V-*ing* nominals do not.

(32)

- a. His having claimed immunity scared us.
*His having claimed of immunity scared us.
- b. Tom's having done the dishes surprised his mom.

*Tom's having done of the dishes surprised his mom.

G. Voice: Gerunds allow the passive voice; associated *V-ing* nominals do not allow the passive voice.

(33)

- a. Being attacked by a gangster is not a pleasant experience.
*The being attacked by gangster is not a pleasant experience.
- b. Having been attacked by a gangster is not a pleasant experience.
*The having been attacked by a gangster is not a pleasant experience.
- c. Tom's regularly being helped by his colleagues made all the difference.
*Tom' regular being helped by his colleagues made all the difference.

In summary, unlike NPs headed by common nouns, NPs headed by gerunds have the internal structure of VPs.

3.3. Contrasts between gerunds and associated *V-ing* nominals

3.3.1. Further analysis of the internal phrase structure

NPs headed by gerunds have the internal structure of VPs, whereas NPs headed by associated *V-ing* nominals have the internal structure of ordinary NPs since associated *V-ing* nominals are common nouns. The structural difference is also illustrated in some other ways how gerunds and associated *V-ing* nominals are distinguished, in addition to the differences discussed in section 3.2.3.

In *The building of the bridge took three years*, the associated *V-ing* nominal *building* takes a prepositional object, which corresponds to the direct object of the embedded verb, i.e. the NP complement of the predicate. However, verbs that take a non-NP complement do not have associated *V-ing* nominals with the same complementation pattern, whereas gerunds do not have such a constraint (Abney 1987: 14-15; Baker 1985: 6; Malouf 1998: 36; Fraser 1970: 90-91), because phrases headed by gerunds have the internal structure of VPs.

Associated *V-ing* nominals are not compatible with non-NP complements, including adjectival complements, prepositional complements, sentential complements and infinitival complements (Grimshaw 1990: 77-78).

(34)

- a. *The being happy is all that Mary wants.
Being happy is all that Mary wants.
- b. *Their unexpected announcing that they are bankrupt shocked the customers.
Their unexpectedly announcing that they are bankrupt shocked the customers.
- c. *Their sudden deciding to leave frustrated the organiser.
Their suddenly deciding to leave frustrated the organiser.
- d. *His strong insisting on perfection has annoyed many of the co-workers.¹³
His strongly insisting on perfection has annoyed many of the co-workers.

Subject control or raising construction is not compatible with associated *V-ing* nominals.

(35)

- a. *The keeping (of) using the muscle is good for the recovery.
Keeping using the muscle is good for the recovery.
- b. *We must focus on the keeping (of) moving, in order to stay warm.
We must focus on keeping moving, in order to stay warm.

Associated *V-ing* nominals are ungrammatical with ditransitive construction.

(36)

- a. *John's giving Mary of his car showed his generosity.
John's giving Mary his car showed his generosity.

Resultatives can appear in gerunds but not in associated *V-ing* nominals.

(37)

- a. *Her hammering of the sheet flat made a horrible noise.
- b. Her hammering the sheet flat made a horrible noise.

Complementation with object control and exceptional case marking is compatible with gerunds but not associated *V-ing* nominals.

¹³ We can say *His strong insistence on perfection has annoyed many of the co-workers*. However, *insistence*, unlike *insisting*, is not a complex event nominal but a result nominal. Result nominals or simple event nominals are compatible with preposition complements (Grimshaw 1990: 73-80).

(38)

- a. *His catching of Mary working encourages him to go back to work.
His catching Mary working encourages him to go back to work.
- b. *Our persuading of John to see the doctor was in vain.
Our persuading John to see the doctor was in vain.
- c. *Her expecting of the team to finish earlier is insane.
Her expecting the team to finish earlier is insane.
- d. *His considering of me foolish hurts me.
His considering me foolish hurts me.

An idiomatic object is an object that does not bear a conventional thematic role but has a specialised dependency on its governor. There will be no preposition in the language that can assign this sort of exceptional thematic role. Therefore the verb-object idioms are ungrammatical in associated *V-ing* nominals.

(39)

- a. *Tom's careful keeping of tabs on Sherry annoys me.
Tom's carefully keeping tabs on Sherry annoys me.
- b. *Your consistent paying of attention to my mistakes upsets me.
Your consistently paying attention to my mistakes upsets me.
- c. *Our taking of advantage of him caused a commotion.
Our taking advantage of him caused a commotion.

Many verbs in English must be listed in the lexicon as verb-particle constructions, such as *look up (the information)*, *define away (the problem)*, etc. These constructions can be freely formed with gerunds. However, the associated *V-ing* nominals, in general, are rather marginal, with a requirement that the particle must immediately follow the verb and not the direct object noun phrase (Chomsky 1970: 193; Fraser 1970: 91).

(40)

- a. his figuring out the problem/ his figuring the problem out
his figuring out of the problem/ *his figuring of the problem out.
- b. his defining away the problem/ his defining the problem away
?*his defining away of the problem/ *his defining of the problem away
- c. his looking up the information/ his looking the information up

his looking up of the information/ *his looking of the information up

Let us discuss the reason for the restrictions on associated *V-ing* nominals. Associated *V-ing* nominals are complex event nominals, which name a process or an event, and complex event nominals have argument structure representation that shows the same argument taking properties as verbs (Grimshaw 1990: 70). Associated *V-ing* nominals have argument structure representation, but nouns are not theta-markers. Grimshaw (1990:78) proposes that nouns are defective argument takers, which require a preposition to transmit theta-marking from them to their complements. Hence the combination of a noun and a preposition accomplishes what a verb can do by itself. Associated *V-ing* nominals are argument-taking nouns and have the same argument structure representation as the embedded verbs, but they cannot directly accept arguments, because they are nouns, which are defective theta-markers. Therefore, associated *V-ing* nominals require the preposition *of* to transmit theta-marking from them to the direct object.

Nouns can take arguments through the aid of preposition, but nouns cannot take sentential arguments¹⁴. Sentential complements never occur with complex event nominals (Grimshaw 1990: 78). Unlike NP complements, sentential complements cannot occur with prepositions, so this means of transmitting a theta-role (θ -role) is not available. Hence there is no way for a noun to theta-mark a sentential argument, and a sentential argument with an argument-taking noun will always violate the theta criterion.

Out of the same reason associated *V-ing* nominals are also not compatible with other non-NP complements (Grimshaw 1990: 77-78), as shown in (34-40), since they cannot occur with prepositions and because of the theta criterion. Gerunds, however, do not have such constraints, because phrases headed by gerunds have the internal structure of VPs.

NPs headed by gerunds have the internal structure of VPs, because gerunds, apart from belonging to the category of nouns, inherit selectional features from the category of relationals. Because of the inheritance from relationals, gerunds are

¹⁴ Nouns with sentential arguments consistently and systematically act as result nominals or simple event nominals and not as complex event nominals, such as associated *V-ing* nominals (Grimshaw 1990: 73-80). For instance, in *The/Their announcement that the position had been filled was a surprise*, *announcement* is interpreted as a result nominal.

theta-markers and take adverb modification. Additionally, gerunds are derived from verbs and have a meaning directly derivative from the verbs. Thus gerunds have argument structure representation. So gerunds can theta-mark on their own. In summary, gerunds are derived from verbs and have argument structure representation; gerunds are theta-markers and take adverb modification. Therefore the internal structure of phrases headed by gerunds patterns that of phrases headed by the embedded verbs.

3.3.2. Other differences between gerunds and associated *V-ing* nominals

3.3.2.1. Morphological productivity

Apart from the constraints on the constructions, there is also a restriction on the word-formation of associated *V-ing* nominals. Verbs of the non-agentive psych verb class¹⁵ have no external argument and fail to undergo associated *V-ing* nominalisation (Grimshaw 1990: 121).

(41)

- a. Depressing the patients is not good for their recovery.
*The depressing of the patients is not good for their recovery.
- b. The situation's worrying the public is bad for the economy.
*The situation's worrying of the public is bad for the economy.

Unaccusative verbs lack external arguments, so they are predicted to lack associated *V-ing* nominal forms. However, there are examples like the following (42), but it seems that associated *V-ing* nominalisation of unaccusative verbs is limited to inchoatives, compare the examples in (42) with those in (43) (Grimshaw 1990: 122).

(42)

- a. the rapid melting of the ice ...
- b. the rapid freezing of the ice ...

(43)

- a. ?the dropping of the stone. (The stone dropped.)
- b. ?the arriving of the train.

¹⁵ It is possible for agentive psych verbs to form the associated *V-ing* nominals, e.g. *The entertaining/amusing of the children is my job.*

The morphology of gerunds and associated *V-ing* nominals will be further discussed, along with other forms with the suffix *-ing* in chapter 5.

3.3.2.2. Control difference

We have discussed the syntactic and morphological differences between gerunds and associated *V-ing* nominals. These differences correlate with some other distinctions between the two subclasses of *V-ing* nouns. For instance, the understood (non-overt) subject of a subjectless gerund must correspond to the subject of the matrix sentence¹⁶ (Wasow & Roeper 1972: 46), while this is not necessarily the case with associated *V-ing* nominals. *Mary* in (44a) is the agent of singing, whereas in (44b), someone else could be the singer.¹⁷

(44)

- a. Mary enjoyed singing the Christmas carol.
- b. Mary enjoyed the singing of the Christmas carol.

The contrast of the following examples illustrates the controlled interpretation of the gerunds and the uncontrolled interpretation of the associated *V-ing* nominals. If the associated *V-ing* nominals permitted a controlled reading, then we would expect bound occurrences of the controller to be permitted to appear, i.e. the phrases headed by the associated *V-ing* nominal can combine with reflexive pronouns or *own*, which refers to the subject or the object of the main sentence. Examples in (45) show that this expectation is not fulfilled.

(45)

- a. Finding themselves upsets many people.
*The finding of themselves upsets many people.
- b. John enjoyed reading his own father's poems
*John enjoyed reading of his own father's poems.
- c. I detest singing loudly to myself.
*I detest loud singing to myself.

¹⁶ There are counterexamples with gerunds, e.g. *The law forbids shooting deer*, here *the law* is not the agent of *shooting deer*, i.e., the understood subject of the gerund is not identical to the subject of the matrix sentence. The further discussion is in section 3.4.1.

¹⁷ Both gerunds and associated *V-ing* nominals may appear with explicit subjects: *His loudly singing the song annoyed me*, *His loud singing of the song annoyed me*.

- d. Shooting his own brothers makes Bill nervous.
 *The shooting of his own brothers makes Bill nervous.

(Examples from Wasow & Roeper 1972: 54 footnote 9)

Furthermore, in associated *V-ing* nominals, the NP following *of* in the prepositional phrase may be understood as agentive (Comrie & Thompson 1985: 372), while such an interpretation is impossible with NPs following the gerund. In transformational grammar, gerunds are transformed from underlying sentences; additional transformation is required for associated *V-ing* nominalisation. Apart from the insertion of determiners, preposition *of*, and converting adverbs into adjectives, another transformation would also be needed in order to move (optionally) the subject into post-verbal position when the verb has no object (Wasow & Roeper 1972: 47 footnote 2). Gerunds do not have such a transformation. This would account for the ambiguity of *the shooting of hunters* – ‘the hunters shoot’ or ‘the hunters are shot’. The NP headed by the gerund *shooting the hunters*, however, is unambiguous, with the meaning of ‘the hunters are shot’. Similarly, this accounts for the contrast between *the singing of the song* and *the singing of the birds*, and also explains why the NP headed by the gerund **singing the birds* is ill-formed.

3.3.2.3. Subtle semantic differences

Associated *V-ing* nominals are complex event nominals. According to Asher (1993: 167), associated *V-ing* nominals must denote eventualities. Thus, it is predicted that stative verb complexes do not have corresponding associated *V-ing* nominal forms since states do not have well-defined, correlated activities. Thus, *V-ing* does not combine with a state type in the associated *V-ing* nominal construction.¹⁸

(46)

- a. *John’s knowing of calculus impressed the interviewers.
 John’s knowing calculus impressed the interviewers.

¹⁸ Counterexamples can be found (in Oxford English dictionary), however, the associated *V-ing* nominal of the stative verbs are rarely used.

- a. Knowing also involves a believing of something that is true.
 b. The admiring of richly dress playgoers went on throughout performances.
 c. Pragmatism, perhaps more successfully than other philosophic positions, brings together the being of humans in the world and the knowing of the natural universe.

- b. *John's loving of Mary is obvious.
John's loving Mary is obvious.
- c. *John's lacking of a car is inconvenient.
John's lacking a car is inconvenient.

In general, it is difficult to interpret these associated *V-ing* nominals; no process or activity is associated with the state of knowledge or the state of love, etc. Instead of associated *V-ing* nominals, such meaning is expressed by other forms of derived nominals, e.g. *John's knowledge of calculus*, *John's love for Mary*, *John's lack of a car*, etc. Thus, another explanation is that the use of the associated *V-ing* nominals is blocked.

(47)

- a. the arrival of the train
*the arriving of the train
- b. the resignation of the prime minister
*the resigning of the prime minister
- c. her strange resemblance to her mother
*her strange resembling of her mother

(examples adapted from Huddleston 1984: 315; Wik 1973: 86)

In some cases, both kinds of formation are possible, *the growth/growing of tomatoes*, *the refusal/refusing of the offer*, *the payment/paying of the bill*, *his proof/proving of the theorem*, etc.

The meaning of gerunds and associated *V-ing* nominals seem to be interchangeable since they both denote events. However, they sometimes convey different shades of meaning. Compare:

(48)

- a. In the making of an anthology, he displays a skill that almost entitles him to a share of Hazlitt's great fame.
- b. In making an anthology, he displays a skill that almost entitles him to a share of Hazlitt's great fame.

In (48b) the gerund *making* has a distinctly temporal meaning, which is absent in (48a) with the associated *V-ing* nominal.

In some cases, only the associated *V-ing* nominal construction is possible. The construction with a gerund implies an association of the prediction it expresses with the subject of the main sentence, which may be at variance with the meaning intended. The associated *V-ing* nominal construction is, however, free from this implication (Poutsma 1923: 124). Compare the following examples:

(49)

- a. I will be with you in the squeezing of a lemon.
*I will be with you in squeezing a lemon.
- b. He sits patiently waiting for the drawing up of the curtain.
*He sits patiently waiting for drawing up the curtain.

In general, both gerunds and associated *V-ing* nominals describe events associated with the embedded verbs, though there is a subtle semantic difference between them. Note that there is another subclass of *V-ing* nouns which have different semantics from gerunds and associated *V-ing* nominals. They are lexical *V-ing* nouns, and their meaning has no direct connection with the embedded verb. Instead of describing events, lexical *V-ing* nouns denote entities or results that are to some extent related to the embedded verbs.

Both associated *V-ing* nominals and lexical *V-ing* nouns are common nouns, and thus the NPs headed by them have the same functions as well as the same internal phrase structure. However, they have different interpretations. Take *I admired his understanding of the article* for example. If *understanding* is an associated *V-ing* nominal, with an event denotation, the sentence means ‘I admired the fact that he understood the article’; if *understanding* is a lexical *V-ing* noun, the sentence means ‘I admire his analysis of the article/ I admire how he understands and analyses the article’; *understanding*, which here means ‘analysis or interpretation’, denotes the result of an event. Similarly, compare the associated *V-ing* nominal in *How should people handle the opening of safety deposit boxes after somebody dies?* and the lexical *V-ing* noun in *Dave Miller attended the opening of the musical comedy*. The associated *V-ing* nominal means the process/event of opening something, whereas the lexical *V-ing* noun means the start, the initial stage of something.

The *V-ing* nouns, from simply denoting the action of the verbs, may develop an associated concrete sense, such as ‘the result of the action’, or ‘something related to

the action'. Compare, for example, *the building of the bridge* and *a tall building*, *The saving of money has not been easy* and *He put all his savings into the stock market*, *The gathering of his toys took only three minutes* and *Our next annual gathering takes place in London*. The individually lexicalised V-ing nouns, unlike associated V-ing nominals, must be listed in the lexicon, e.g. *dental fillings*, *research funding*, *a feeling of joy*, *the annual earnings*. In many cases, the concrete sense of a V-ing noun is attested later than its first appearance in the action sense (Adams 1973: 25). The following, denoting the action of the verb, are all dated by the Oxford English Dictionary in the fourteenth century: *drawing*, *failing*, *finding*, *meeting*. The related senses of 'picture', 'defect', 'discovery', 'assembly' are recorded as occurring two or three hundred years later.

3.3.3. Summary

Gerunds and associated V-ing nominals have the same form and syntactic distribution; they are both derived from verbs, and have a meaning directly derivative from the verbs, describing events. This section, following section 3.2.2, has illustrated the fundamental differences between them: unlike NPs headed by associated V-ing nominals, NPs headed by gerunds have the internal structure of VPs.

Associated V-ing nominals are complex event nominals. Associated V-ing nominals are nouns with an argument structure representation, but nouns are not theta-markers. Therefore, associated V-ing nominals require a preposition to transmit theta-marking from them to their complements. The combination of an associated V-ing nominal plus the preposition *of* accomplishes what a verb, as well as a gerund, can do by itself. Non-NP complements are not compatible with associated V-ing nominals. Unlike NPs, clauses, adjectives, infinitives, etc. cannot occur after a preposition, so this means of transmitting theta-marking is not available. Hence there is no way for a noun to theta-mark a non-NP argument (Grimshaw 1990: chapter 3). Gerunds, however, are theta-markers, which is a feature inherited from the category of relationals, along with adverb modification. So gerunds, which have argument structure representation, can theta-mark on their own. Therefore NPs headed by gerunds have the internal structure of VPs.

3.4. Three types of gerunds

Portner (1992, 1995) discusses the semantics of gerunds in detail. Some of the semantic analysis is helpful to distinguish gerunds from present participles. There are three kinds of gerunds: gerunds with an expressed subject, the subject being either genitive case (50a) or accusative case (50b), and gerunds without an expressed subject (50c).

(50)

- a. John's eating the apple bothered me.
- b. I imagined John eating the apple quickly.
- c. Mary denied having eaten the apple.

Before we start analysing the three kinds of gerunds, let us make sure that each *V-ing* form in (50) is a gerund, not a present participle. In (50a), the phrase headed by *V-ing* is the subject of the sentence, and thus *V-ing* is a gerund. In (50b) and (50c), the phrase headed by *V-ing* is the complement of the verb, and it can be passivised, as *John eating the apple quickly cannot be imagined*, *Having eaten the apple was denied by Mary*, and thus it is the direct object of the matrix verb, therefore, *V-ing* is a gerund. These *V-ing* forms are gerunds, not associated *V-ing* nominals, because the NPs have the internal structure of VPs. The gerunds above are different from each other in that (50a) is a *POSS-ing* gerund, (50b) is an *ACC-ing* gerund, and (50c) is a subjectless gerund. The subjectless gerunds will be analysed in detail in section 3.4.1, and the comparison of *POSS-ing* gerunds and *ACC-ing* gerunds will be discussed in section 3.4.2.

3.4.1. Subjectless gerunds

This section focuses on the gerunds without an expressed subject. We will look into whether the gerunds have an unexpressed subject or not, and if so, we will analyse the relation between the unexpressed subject and the gerund as well as other arguments of the sentence. We focus on the discussion of gerunds as the subject and the direct object, analysing the control relation between the gerunds and the matrix sentence. For instance, in *Mary likes singing solo*, the agent of the event 'singing solo' is understood to be coreferential with the matrix subject *Mary*. It has a

controlled interpretation since *Mary* is also assigned a Θ -role from the gerund, i.e. *Mary* is the subject of *singing*. There are also subjectless gerunds which do not have a controlled interpretation, such as *Senator Green proposed adjourning immediately*. Here the unexpressed subject of *adjourning* is not the subject of *proposed*. The unexpressed subject of the gerund is understood as non-coreferential with the matrix subject.

Firstly, we look at the subjectless gerunds with a controlled interpretation. Thompson (1973: 382) lists verbs followed by gerunds that have an explicit controlled reading: *contemplate, like, hate dread, abhor, endure, stand, miss, prefer, remember, avoid, fear, enjoy, regret, etc.*

(51)

- a. Mary likes playing the piano.
- b. He hates reading the newspaper.
- c. I cannot stand working in such a noisy place.
- d. He avoids going home when there's heavy traffic.
- e. I prefer listening to classical music.

The NPs headed by the gerunds of the above examples function as the direct object of the sentence. The unexpressed subject of the gerund is coindexed with its experiencer role, i.e. the matrix subject (Pollard & Sag 1994: 288). In (51a), *Mary* is the subject of the matrix verb *like*, as well as the subject of gerund, i.e. the agent of the event 'play the piano'. The semantic property of the matrix verbs that require a controlled interpretation of the following gerund is what Thompson called 'privateness'. These verbs involve individual and private thoughts, feelings, and personal welfare; no one but the individual him/herself needs to know that the proposition expressed by the verb is true (Thompson 1973: 381).

When subjectless gerunds function as the subject of the sentence, there can also be an explicit control relationship between the gerund and its unexpressed subject and the rest of the sentence. For instance, in *Falling off from the building injured Tom*, *Tom*, who was injured, is also the person who fell off from the building. The unexpressed subject of the gerund is the experiencer role of the predicate. Here are some more examples:

(52)

- a. Starting a new job makes him nervous.
- b. Playing the piano is her sister's hobby.
- c. Drinking too much makes Mary feel dizzy.
- d. Getting a low grade does not bother Tom.

According to Postal's (1970) analysis of coreferential complement subject deletion, the existence of subject deletion under coreference usually involves phenomena such as reflexivisation, *own* modification, and reciprocals. The reflexive pronoun must indicate the same person that is in the accusative form in the sentence, as in (53a, b). The use of *own* has to meet special agreement condition, as in (53c), similar to *each other*, as in (53d).

(53)

- a. Shaving myself wakes me up.
*Shaving himself wakes me up.
- b. Drawing pictures of themselves made them self-conscious.
*Drawing pictures of themselves made me self-conscious.
- c. Being insulted by my own father annoyed me.
*Being insulted by his own father annoyed me.
- d. Doubting each other annoyed them.
*Doubting each other annoyed me.

The second kind of subjectless gerunds involves implicit control (Postal 1970; Wasow & Roeper 1972); an unexpressed matrix NP is the controller in such sentences. The controlness is borne out by the interpretation. For example, *Eating lots of fruit is good for health* means that it is good for NP_i's health if NP_i eats lots of fruit. The interpretation cannot be **His eating lots of fruits is good for my health* or **Our eating lots of fruits is good for Susan's health*, etc. Here are some more examples:

(54)

- a. Hunting elephants can be dangerous.
- b. Kissing Betty in public is difficult.
- c. Filling the income tax form was easier this year.
- d. Knowing some Spanish is cool.

However, there are counterexamples. We can also find a non-controlled interpretation, for example, *Planting lettuce seeds too close together can kill them*.

Short passives superficially do not differ in any significant way from the implicit control sentences.

(55)

- a. Building a bridge was undertaken.
- b. Kissing Betty in public was condemned.
- c. Invading Rome was proposed.
- d. Selling guns to the rebels was suggested.

However, unlike the implicit control examples in (54), for short passive constructions in (55), the embedded verb of the gerund must be active or nonstative, a condition failed by most predicatively used adjectives and verbs like *know* (Postal 1970: 480), e.g. **Knowing Spanish was considered*. **Being amusing to Harry was proposed yesterday*.

In example (55a), the agent of the event ‘build the bridge’ is the same person who ‘undertook’ the action. However, such a control relationship does not apply to all agentless passives. The agent of the event denoted by the gerund is not necessarily identical to the agent of the event expressed in the passive voice. In order to have a better explanation, let us have a look at the corresponding long passives, that is, those with explicit agentive *by* phrase.

(56)

- a. Building a bridge was undertaken by the architects.
- b. Kissing Betty in public was condemned by the Right-Sex Committee.
- c. Invading Rome was proposed by the Hand of the King.
- d. Selling guns to the rebels was suggested by them.

In comparison to (55b), in the extended passive version (56b), *the Right-Sex Committee* is the agent of *condemned*, but is not the agent of *kissing Betty*; it is someone else that kissed Mary – *His/Tom’s kissing Betty was condemned by the Right-Sex Committee*. Such passive examples have a non-controlled reading. Besides,

the corresponding active sentences are the same.¹⁹ For instance, *Adjourning immediately was proposed (by the Senator)*, and the corresponding active sentence *The Senator proposed adjourning immediately*. *The Senator* is the agent of *proposed*, but the agent of *adjourning* is someone else. More similar examples, some of which are the active counterpart of the passives construction, follow:

(57)

- a. They suggested selling guns to the rebels.
- b. The psychiatrist recommended getting away for a week.
- c. The politician disapproved of opening up trade with Albania.
- d. He recommended introducing a wealth tax.

Some verbs such as *involve*, *require*, *justify*, etc., which take a subjectless gerund as direct object, do not seem to put any restriction on the interpretation of the unexpressed subject (Malouf 1998: 104), i.e. the agent of the event denoted by the gerund is not necessarily coindexed with the matrix subject.

3.4.2. ACC-*ing* and POSS-*ing* gerunds

After discussing the subjectless gerunds, we move on to the gerunds with an expressed subject. The subject of gerunds is either in genitive or accusative case, and the gerunds are called POSS-*ing* and ACC-*ing* gerunds respectively. The two types of gerunds that describe an event ‘the enemy destroyed the city’ are *the enemy’s destroying the city* and *the enemy destroying the city*. There might be questions raised – why is *the enemy* in *the enemy destroying the city* an accusative form rather than a nominative form? We can test the case of the notional subject by replacing the NP with a pronoun.

(58)

- a. *They destroying the city angered the citizens.
Them destroying the city angered the citizens.
- b. *He getting the UNESCO chair would be unthinkable.
Him getting the UNESCO chair would be unthinkable.
- c. *He hitting her so hard frightened Mary.

¹⁹ For some cases, both controlled and non-controlled interpretations are possible, for details see (Thompson 1973: 379-380).

Him hitting her so hard frightened Mary.

- d. *All I can think about is he getting the UNESCO chair.

All I can think about is him getting the UNESCO chair.

- e. *The idea of he being a candidate is ridiculous.

The idea of him being a candidate is ridiculous.

POSS-*ing* and ACC-*ing* gerunds do not have structural differences, except that the former contains a POSS morpheme. Both kinds of gerunds do not take lexically overt determiners, and they accept adverbial modification but not adjectival modification, etc. Semantically, POSS-*ing* and ACC-*ing* gerunds entail only a negligible difference.²⁰

However, there are cases in which only ACC-*ing* gerunds, but not POSS-*ing* ones can appear or the other way around. If a full NP determiner precedes a gerund, the ACC-*ing* gerund is strongly preferred (Taylor 1996: 282).

(59)

- a. We were very upset at the refrigerator tipping over.

?We were very upset at the refrigerator's tipping over.

- b. We were very upset at our idea being unfairly criticised.

*We were very upset at our idea's being unfairly criticised.

- c. My neighbours don't approve of people kissing in public.

?My neighbours don't approve of people's kissing in public.

(examples adapted from Taylor 1996: 282)

However, possessive pronouns would be unobjectionable, e.g. *They don't approve of our/us kissing in public; We were very upset at its/it being unfairly refused* etc. We can also say there is a semantic restriction on the subject of the POSS-*ing*, because inanimate subjects make poor possessors if they are not in the pronominal form *its*. If the subject is a person, both accusative and genitive form is grammatical, e.g. *Tom's/Tom not having done his homework destroyed the family's weekend plan*.

In addition, idiom chunks are disallowed as the possessor of gerunds. Here are some examples from Abney (1987: 131):

²⁰ There are semantic contrasts in terms of quantificational reading and factivity, which have been analysed in detail (Portner 1992, 1995), but those will not be discussed here.

(60)

- a. Advantage was taken of John's situation.

I was irked at advantage being taken of John's situation.

??I was irked at advantage's being taken of John's situation.

- b. The bull was taken by the horns.

I approve of the bull being taken by the horns in this matter.

??I approve of the bull's being taken by the horns in this matter.

- c. Much was made of Calvin's foresight.

The slim margin by which global thermonuclear warfare was averted justified much being made of Calvin's foresight.

*The slim margin by which global thermonuclear warfare was averted justified much's being made of Calvin's foresight.

Extraction is also a structure which only allows ACC-*ing* gerunds, but not POSS-*ing* gerunds (Horn, 1975).

(61)

- a. Which city do you remember him describing?

*Which city do you remember his describing?

- b. Who do you resent Bill hitting?

*Who do you resent Bill's hitting?

If the subject of the gerunds is the form of *wh-* pronoun, the ACC-*ing* gerunds are not acceptable. It is pointed out by Abney (1987: 114) that POSS-*ing* but not ACC-*ing* gerunds with *wh-* subject can front under pied-piping in restrictive relative clauses. The same generalisation holds for *wh-* questions (Malouf 1998:47).

(62)

- a. The person whose being late every day Pat didn't like got promoted anyway.

*The person whom being late every day Pat didn't like got promoted anyway.

- b. the man whose flirting with your wife you took such exception to

*the man whom flirting with your wife you took such exception to

- c. I wonder whose being late every day Pat didn't like?

*I wonder whom being late every day Pat didn't like?

3.5. Summary of the discussion on gerunds

This chapter analyses the distribution of gerunds and the internal structure of phrases headed by gerunds, in comparison to phrases headed by associated *V-ing* nominals. Gerunds and associated *V-ing* nominals are identical in form, and they both have the distribution of nouns, i.e. they belong to the category of nouns. However, there are observable structural differences between phrases headed by the two types of *V-ing* forms. Unlike ordinary NPs, NPs headed by gerunds have the internal structure of VPs.

Nouns are not theta markers and thus cannot theta-mark on their own. Associated *V-ing* nominals are nouns, and thus cannot theta-mark on their own, even though they have the argument structure representation of the verbs which they are derived from. They can only theta-mark NP complements with the aid of a preposition; they are not compatible with non-NP complements because non-NPs cannot follow a preposition. Gerunds inherit distribution from nouns. They are event-denoting nouns derived from verbs and thus have argument structure representation. Additionally, gerunds inherit selectional features from relationals, because of which gerunds are theta-markers and take adverb modification. Therefore, gerunds can theta-mark on their own and NPs headed by gerunds have the internal structure of VPs.

In Huddleston & Pullum (2002), gerunds and present participles are conflated into a single category ‘gerund-participle’ because of their being superficially identical to each other. The detailed analysis of gerunds in this chapter constitutes part of the argument against the single category ‘gerund-participle’. In order to distinguish gerunds and present participles from each other, we must have a detailed understanding of them, respectively.

Both gerunds and present participles are in the form of *V-ing*, but there is a distributional difference between them. Gerunds have the distribution of nouns, phrases headed by gerunds occurring in positions that allow NPs. In contrast, phrases headed by present participles do not occur in those positions, but positions that allow AdjPs. Present participles have the distribution of adjectives, which will be analysed in chapter 4. Phrases headed by gerunds and phrases headed present participle have the same internal structure – the internal structure that patterns VPs. However, the reason for their internal phrase structure is not the same. The shared reason is that

gerunds and present participles are derived from verbs, and they have a meaning that is directly derivative from the verbs, i.e. they have argument structure representation. Apart from that, gerunds are theta-markers and take adverb modification because of the inheritance from relationals; whereas, for present participles, the reason is that participles belong to the category of adjectives – which are theta-markers and take adverb modification.

Chapter 4. Participles

After the discussion of gerunds and associated *V-ing* nominals in chapter 3, let us move on to another type of *V-ing* form – present participles. Despite their identical form, present participles and gerunds have different syntactic distributions. The distinction between gerunds and present participles will be summarised in chapter 7. Before that, we should also have a detailed understanding of present participles. This chapter analyses the syntactic distribution of present participles, along with past participles. The discussion also involves prototypical adjectives that are identical in form to participles.

4.1. Basic observations about participles

4.1.1. The syntactic functions of phrases headed by participles

All verbs have participle forms, except modal verbs. Participles have the distribution of adjectives, because phrases headed by participles, like adjective phrases, can function as predicative complements, modifiers of nouns and modifiers of clauses.

Function	Adjectives	Present participles	Past participles
Predicative complements	The cake is worth the calories. The girl seems happy.	The boy is reading a book. The girl kept running.	The topic was discussed. The prisoner has escaped.
Modifiers of nouns	a delicious cake a girl desirous of fame	a running girl a boy carry an umbrella	the discussed topic the escaped prisoner
Modifiers of clauses	Allergic to gluten, he has no choice in this bakery.	Walking home after work, Tom almost fell asleep.	Criticised by the experts, the author was upset.

Table 2. The distribution of adjectives and participles.

When present participles follow the verb *be* or *get*, the combination expresses the progressive aspect, e.g. *Mary was reading the news*, *We should get going quite soon*. Phrases headed by present participles can also function as the predicative

complement of verbs other than *be* or *get*, such as aspectual verbs *keep*, *stop*, etc., perception verbs *see*, *hear*, etc. When past participles follow the verb *be* or *get*, the combination expresses the passive voice, e.g. *The book was written by him*, *He got arrested*. When past participles follow the verb *have*, the combination expresses the perfect aspect, e.g. *The baby has cried*, *The author has written many books*, *My passport has expired*. As discussed in section 2.4, phrases headed by participles function as the predicative complement of the predicate verb, same as adjective phrases. The progressive aspect, passive voice and perfect aspect are analysed as the composition of the predicate verb *be* or *have* and the event-denoting semantics of participles.

Participles and adjectives have the same distribution, but participles are different from prototypical adjectives in certain ways. Some prototypical adjectives and participles are identical in form, e.g. *interesting*, *boring*, *tired*, *excited*, though the single word is a prototypical adjective by default. We will discuss how to distinguish participles from the corresponding prototypical adjectives in section 4.5. The morphology of prototypical adjectives that are identical in form to participles will be discussed in chapter 5, and the categorial status of participles and their relationship with adjectives will be further discussed in chapter 6.

4.1.2. The morphological forms of participles

There are two types of participles – present participles and past participles. Some past participle forms are related to root verbs by *-ed* suffixation, as in example (1a); some are related to the root verbs by *-en* suffixation, as in example (1b); some are related to the root verbs by vocalic ablaut, as in example (1c); some are related to the root verbs by vocalic ablaut and *-en* suffixation, as in example (1d); some are identical to the root verbs, as in example (1e).

(1)

- a. Susan has watched the new episode of Game of Thrones.
The new episode of Game of Thrones has been watched (by Susan).
- b. Peter has eaten your chocolate.
Your chocolate was eaten (by Peter).
- c. We have drunk a lot of orange juice.

A lot of orange juice was drunk (by us).

- d. Those boys have broken the window.

The window was broken by those boys.

- e. She has cut the cake.

The cake was cut (by her).

Present participles, on the other hand, take another suffix and are always in the form of V-ing, e.g. *I am watching a movie*, *He was reading a book*, *We must keep drinking water*, *Tom stopped learning French*.

4.2. The distribution of present participles and past participles

Participles have the syntactic distribution of adjectives, in that phrases headed by participles have the same functions as AdjPs. Present participles and past participles are analysed in parallel. Figures 4 and 5 show the functions of phrases headed by present participles and the functions of phrases headed by past participles, respectively.

Phrases headed by present participles	Phrases headed by past participles
a. Predicative complement <i>He is calling you.</i> <i>He stopped running.</i> <i>We found him playing the flute.</i>	a. Predicative complement <i>The window was closed (by me).</i> <i>The boy got attacked (by them).</i> <i>We found him beaten by Tom.</i>
b. Modifier of clause <i>Driving home after work, I ran a red light by accident.</i>	b. Modifier of clause <i>Battered by the wind, John fell to his knees.</i>
c. Modifier of noun <i>the girl sitting next to him</i> <i>crying baby</i>	c. Modifier of noun <i>slaves tortured by their masters</i> <i>a broken window</i>

Figure 4. Functions – present participle.

Figure 5. Functions – past participles.

4.2.1. Participles as predicative complements of the verb *be*

Phrases headed by present participles and phrases headed by past participles can function as the predicative complement of *be*. *Be* + present participle expresses the

progressive aspect, e.g. *He is playing the piano*, *Be* + past participle expresses the passive voice, e.g. *He was threatened by them*.

The verb *be* can be followed by NPs (e.g. *He is a student*), AdjPs (e.g. *He is very young*), and PPs (e.g. *He is in the garden*). Phrases headed by present and past participles, same as AdjPs, function as the predicative complement of the verb *be* (e.g. *He is running*, *He was severely punished*). The combination *be* + present participle, as (2a), must be distinguished from the other two types of *be* + V-*ing* combination, as (2b, c).

(2)

- a. His son is playing the piano.
- b. His hobby is playing the piano.
- c. His son is charming.

The V-*ing* forms in (2) all follow the verb *be*, but there are differences in either syntactic distribution or semantic denotation. V-*ing* in (2a) is a present participle, and the phrase headed by the present participle functions as the predicative complement of the verb *be*, and the combination expresses the progressive aspect. V-*ing* in (2b) is a gerund, which has the distribution of nouns, and the NP headed by the gerund functions as the subject complement of the verb *be*. Here, *his hobby* equals *playing the piano*, and the sentence can be reversed – *Playing the piano is his hobby*, where the phrase headed by the gerund is the subject of the sentence. The phrase headed by the present participle in (2a) functions as the predicative complement of the verb *be*, therefore cannot be reversed to subject position, **Playing the piano is his son*. The phrase *Playing the piano* in (2a) and (2b) having different syntactic functions shows that gerunds and present participles are different in distribution, and a single category ‘gerund-participle’ (Huddleston 2002b, 2002a) would fail to explain the distinction.

The V-*ing* form in (2c), same as the one in (2a), also heads a phrase that functions as the predicative complement of *be*, but it is a prototypical adjective and denotes a property of the subject. Present participles are event-denoting. Besides, phrases headed by present participles have the internal structure of VPs. Therefore *charm*, as a transitive verb, requires a direct object, but *charming* in (2c) does not take a direct object. Compare (2c) with *His son is charming the girls*, where *charming* is a present

participle, denoting an event that the subject is involved in. *Charming* in (2c) being a prototypical adjective can also be tested by the modification of degree adverbs such as *very*, because unlike present participles, prototypical adjectives can take a degree modifier, e.g. *His son is very charming*.

Phrases headed by past participles can function as the predicative complement of the verb *be*, and the combination of *be* + past participle expresses the passive voice. A seemingly identical combination is *be* + prototypical adjective, and an AdjP headed by a prototypical adjective functions as the predicative complement of the verb *be*.

(3)

- a. The problem was solved (by Tom).
- b. The boy was very cute/exhausted/bored.

(3a) is a sentence in the passive voice. It describes an event, as does the active sentence *Tom solved the problem*. The passive voice of the sentences is analysed as the composition of the predicate verb *be* and the event-denoting semantics of the past participle. In (3b) *exhausted* is a prototypical adjective, the AdjP also functioning as the predicative complement of the verb *be*, and it describes a property of the subject. The prototypical adjectives *exhausted* and *bored* are identical to the past participles in form; and syntactically, the phrases headed by the prototypical adjectives, same as phrases headed by participles, function as the predicative complement of *be*. Prototypical adjectives that are in the form of past participles, however, have different semantics from past participles. *Exhausted* and *bored* in (3b) are property-denoting, and the sentence does not describe the event that ‘Something exhausted/bored the boy’. The property-denoting semantics of the adjectives *exhausted* and *bored* can be confirmed by modification of *very* – *The boy was very exhausted/bored*.

In section 4.4 and chapter 6, I will further discuss the distinctions between participles and the corresponding prototypical adjectives, when the phrases they head function as the predicative complement of the verb *be*.

Be + present participle is grammaticalised as an expression of the progressive aspect and *be* + past participle is grammaticalised as an expression of the passive voice, but this is not grammatically arbitrary. The progressive aspect or the passive voice is

simply analysed as the composition of the predicate verb *be* and the event-denotation of participles.²¹ Compare the participles and the finite forms of the verbs:

(4)

- a. He smokes.
- b. He is smoking.

(5)

- a. Their relationship lasted *(for only a year).
- b. Their relationship is lasting.

(6)

- a. The chicken was cooked.
- b. The chicken was cooked (by Mary).

In (4a), *He smokes* denotes that he smokes habitually, i.e. he is a smoker, the present tense verb *smokes* does not denote the smoking event. In (4b), the present participle *smoking* is event-denoting, and the combination of *is* + *smoking* expresses the progressive aspect of the event. In (5a), the denotation that the state of their relationship continues is realised with the indication of a specified period (*for only a year*), the past tense verb *lasted* itself does not have this denotation. (5b) is ambiguous. The present participle *lasting* denotes an event, and the combination *is* + *lasting* expresses the progressive aspect of the event; *lasting* can also denote the property of *their relationship*, and *lasting* ‘permanent, lifelong’ is a prototypical adjective. (6a) is also ambiguous. The past participle *cooked* denotes the event that someone cooked the chicken, and the combination *was* + *cooked* expresses the passive voice of the event; *cooked* can also denote the property of *the chicken* because *cooked* ‘not raw’ here can also be a property-denoting adjective. With an agentive *by* phrase, the semantics of *cooked* can be disambiguated, as in (6b) *cooked* must be the past participle, which has event denotation.

²¹ The difference between stage-level and individual-level adjectives might also explain the grammaticality of progressive aspect. Compare:

- 1) He is stupid. – He is being stupid.
- 2) He is dead. – *He is being dead.

Stupid has both individual-level and stage-level interpretations. In *He is being stupid*, *stupid* can only be interpreted as stage-level, which means ‘he failed to understand something at that time’, not ‘he has a great lack of intelligence or common sense; *being stupid* denote the event, and *is* + *being stupid* expresses the progressiveness of the event. *Dead* does not have stage-level interpretation, i.e. there is no ‘being dead’ event, therefore, we cannot have **He is being dead*.

Similar to the verb *be*, phrases headed by present and past participles can function as the predicative complement of the verb *get* as well. The combination *get* + present participle expresses the progressive aspect, e.g. *If we don't get going, we'll miss our train; They want to get going on the construction of the house; John just got running.* The combination *get* + past participle expresses the passive voice, e.g. *They got killed by the hijackers, Both doctors got reprimanded by the hospital board, The neighbour got mauled by our dog.*

4.2.2. Present participles as predicative complements of aspectual verbs

In terms of the function as predicative complements, phrases headed by present participles can also function as the predicative complement of aspectual verbs, in addition to the verbs *be* and *get*. Certain aspectual verbs can be followed by present participles.²²

- (7)
- a. He kept falling asleep during the concert.
 - b. Her daughter began playing the piano.
 - c. He started learning German.
 - d. The baby stopped crying.
 - e. They continued working on the project.

The construction of an aspectual verb with a phrase headed by a present participle as predicative complement must be distinguished from a superficially identical combination in which a phrase headed by a gerund follows a verb as the direct object. Compare the two types of combination V + V-ing: *The kids kept falling asleep during the concert* and *The kids discussed visiting their grandmother*. The first V-ing form, *falling*, is a present participle; the phrase headed by the present participle functions as the predicative complement of the aspectual verb *kept*, and *the kids* is a raised subject. The second V-ing form, *visiting*, is a gerund; the phrase headed by the gerund functions as the direct object of the verb *discussed*. The distributional differences between gerunds and present participles can be tested by passivisation.

²² Freed (1979) discusses the uses of 12 aspectual verbs – *begin, start, continue, keep, resume, repeat, stop, quit, cease, finish, end, complete*. Here we focus on aspectual verbs with present participles as complement.

Direct objects can be passivised, whereas predicative complements cannot: *Visiting their grandmother was discussed by the kids* vs. **Falling asleep during the concert was kept by the kids*. The combination V + V-ing can be realised in two different constructions because the V-ing forms are different in syntactic distribution. Gerunds have the distribution of nouns, whereas present participles have the distribution of adjectives. A single category of ‘gerund-participle’ (Huddleston & Pullum 2002) makes no syntactic distinction between participles and gerunds in wildly different functions, such as the distinction between sentences like *The kids kept falling asleep during the concert* and sentences like *The kids discussed visiting their grandmother*.

There is also a semantic difference between the two constructions. The construction with a subjectless gerund has a controlled subject. For instance, in *The kids discussed visiting their grandmother*, the matrix subject *the kids* is assigned a Θ -role from both the matrix verb *discussed* and the gerund *visiting*. In contrast, the construction with a present participle has a raised subject. For instance, in *The kids kept falling asleep during the concert*, *the kids* is the raised subject of the present participle *falling*, and the aspectual verb *kept* does not assign a Θ -role to the matrix subject, *the kids*. The construction means the recurring of the event that the kids fall asleep during the concert. The construction of an aspectual verb followed by a phrase headed by a present participle is the predicative complementation with a raised subject. According to Aarts (1997: 247-248), subject idiom chunks and weather *it* are useful to distinguish raising verbs and control verbs:

- (8)
- a. The shit keeps hitting the fan.
 - b. The pot stops calling the kettle black.
 - c. It starts raining.
 - d. It continues raining.
 - e. It keeps raining.
 - f. It stops raining.

Note that there are two verbs *keep* – one aspectual verb and one transitive verb. They should be distinguished from each other. The transitive *keep* is not an aspectual verb. The transitive verb *keep* takes an NP as the direct object and means ‘be in possession of’, whereas the aspectual verb *keep* that takes a phrase headed by a present

participle as the predicative complement means the recurring of an event. Here are some examples of the transitive verb *keep*:

(9)

- a. The governor keeps a gun in his closet.
- b. Do you want this photo back or can I keep it?
- c. You can keep the book as long as you like.

Similarly, there is also a transitive verb *stop*, in addition to the aspectual verb *stop*. The transitive *stop* takes an NP as the direct object, with the meaning that the NP is stopped or stopped from doing whatever it does.

(10)

- a. The police stopped the fight.
- b. The car was stopped before the entrance of the garden.
- c. We must stop him before he does something stupid.

4.2.3. Participle complementation with an intervening NP

The cases that phrases headed by present participles and past participles directly following certain verbs as the predicative complement have been discussed in sections 4.2.1 and 4.2.2. There is a more complex construction – predicative complementation with an intervening NP, e.g. *I kept him sitting in the corner*, *She kept the wall painted black*, *I caught him smoking in the classroom*, *We saw him beaten by Tom*. This construction also illustrates that participles have the distribution of adjectives since it can also be used with prototypical adjectives, e.g. *He stood the table straight*, *He caught the fly alive*.

It should at first be clarified whether the *V-ing* form is a present participle or a gerund. The combination *V + NP + V-ing* can also be realised as the construction of a verb followed by an *ACC-ing* gerund, where the intervening NP in accusative case is the determiner of the gerund, and the phrases headed by the gerund function as a direct object, e.g. *I appreciated him repairing my bike*. Passivisation can distinguish the two constructions. A phrase headed by an *ACC-ing* gerund, which functions as the direct object, can be passivised, e.g. *Him repairing my bike was appreciated (by me)*; whereas a phrase headed by a present participle as the predicative complement

cannot, e.g. **Him sitting in the corner was kept by me*, **Him smoking in the classroom was caught by me*. The comparison of gerunds and present participles in the combination V + NP + V-*ing* will be further analysed in chapter 7.

Here are some examples, where perception verbs take phrases headed by present participles as a predicative complement with an intervening NP.

(11)

- a. Mary watched him presenting his poster.
- b. We heard him playing the piano.
- c. Mrs Smith found him smoking in the classroom.
- d. I can smell the food burning.
- e. She felt something dangerous approaching.

Fillmore (1963: 216) claims the present participles in such constructions to be telescoped progressives, i.e. the present participle complement is a simple progressive pre-sentence from which the verb *be* has been deleted. For example, (11a) is derived from the terminal string into which the telescoped form of the pre-sentence underlying ‘He was presenting his poster’ has been embedded. This also explains why such a construction does not allow the perfect aspect. The sentence **Mary watched him having presented his poster* is ungrammatical because the grammar does not generate **He was having presented his poster*. Quirk et al. (1985: 1206), as well as Huddleston & Pullum (2002: 1237), have a similar opinion; they claim that the present participle in the perception verbs constructions has a progressive meaning, compared to bare infinitives as the complement of perception verbs²³. For instance, the bare infinitive in *Mary watched him present his poster* has no progressive meaning, and it implies that he did the whole job of presenting his poster while Mary was watching. However, these analyses are wrong.

It is not present participles that express the progressive aspect, but the composition of the predicate verb *be* and the semantics of present participles. Gisborne (2010: 195-197) explains that the difference between present participles as the complement of perception verbs and bare infinitives as the complement is due to the

²³ Perception verbs that take both present participle complements and bare infinitive complements are: *feel, hear, see, notice, watch, observe, overhear*.

morphosyntactic properties of present participles. Present participles contribute partitive semantics, as is illustrated in the examples:

(12)

- a. I saw the boy drowning, but I rescued him.
- b. *I saw the boy drown, but I rescued him.

Because the semantic nature of present participles is to locate the event in a sub-part, with neither the beginning nor the end in view, it is inevitably the case that a present participle construction has the semantics of non-completion. It is inferred in (12a) that the boy cannot have finished drowning, so *I rescued him* clause can be attached to the main clause without contradiction. (12b) is ungrammatical because the drowning event is complete, i.e. the boy cannot be saved.

Furthermore, the construction of phrases headed by present participles functioning as the predicative complement with an intervening NP can be structurally ambiguous, as noticed and analysed by Fillmore (1963: 217-218), Declerck (1982), Felser (1998: 354-355), Gisborne (2010: 197). The difference can be seen from passivisation of the intervening NP, noted by Akmajian (1977).

(13)

- a. We found him smoking in the classroom.
He was found smoking in the classroom.
- b. We felt something dangerous approaching.
*Something dangerous is felt approaching.

In (13a) the phrase headed by the present participle is the predicative complement with object control; *him* is the object of the matrix verb *found*, as well as the subject of the present participle *smoking*, i.e. the agent of the event denoted by the present participle. In (13b) the phrase headed by the present participle is the predicative complement with object raising, *something dangerous* is the understood subject of the present participle *approaching*, but it is not the object of the matrix verb *felt*, i.e. it is not assigned a Θ -role from the matrix verb *felt*. The diagnostic for object control is by passivising the intervening NP: as we can see that *him* in (13a) can be passivised, whereas *something dangerous* in (13b) cannot. The object raising construction can also be illustrated by weather *it*, e.g. *We saw it raining*.

The transitive verbs *keep* and *stop* have a causative meaning, and take phrases headed by present participles as the predicative complement with object control.

(14)

- a. I kept him sitting in the corner.
He was kept sitting in the corner.
- b. I stopped him smoking in the classroom.
He was stopped smoking in the classroom.

Note that the aspectual verbs *keep* and *stop* are intransitive verbs with raised subjects, as analysed in section 4.2.2. That is the difference between the aspectual verb *stop* or *keep* directly followed by a present participle, the phrase headed by the present participle functioning as the predicative complement, and the transitive verb *stop* or *keep*, taking a predicative complement with a controlled object. *I stopped smoking* does not mean ‘I caused myself to stop smoking’.

Talmy (1988) introduces a semantic category “force dynamics”. *Keep* and *stop* as intransitive aspectual verbs can also have a causative meaning.²⁴ However, the subject of aspectual verbs that take phrases headed by present participles as a predicative complement is a raised subject, which means the aspectual verb does not assign a Θ -role on the subject.

(15)

- a. The ball kept rolling (because of the wind blowing on it).
- b. The log kept lying on the incline (because of the ridge there).

In (15a), *keep* has a causative meaning, as ‘The ball is rolling because of the wind’, but it is not ‘The ball causes itself to roll’. Similarly, the causative meaning in (15b) is illustrated as ‘The log stayed on the incline because of the ridge there’, but not ‘The log kept itself lying on the incline’. The transitive *keep*, in contrast, takes a controlled object and present participle complementation.

(16)

- a. The wind kept the ball rolling.
- b. The ridge kept the log lying on the incline.

²⁴ *Keep* and *stop* also represent autonomous events, independent of force interaction, i.e. they have no causative meaning. E.g. *It stops raining*, *It keeps snowing*.

In (16a), *the ball* is assigned a θ -role from both the matrix verb and the present participle, i.e. *the ball* is the object of the matrix verb *kept* and the subject the present participle *rolling*. The causative meaning of *keep* can be illustrated as ‘The ball was rolling because of the wind’. Similar with (16b), *the log* is the object of the matrix verb *keep* and the subject of the present participle *lying*, the sentence meaning ‘The log stayed on the incline because of the ridge’.

The causative *stop* indicates the prior occurrence of the event that the present participle denotes, e.g. *They stopped us playing before we had finished the first set*, presupposes ‘we were playing’. This causative interpretation does not work on some other similar sentences, e.g. *Peter stopped the vehicle crashing into the fence* does not mean ‘Peter caused the vehicle to stop crashing into the fence’; *My mother stopped me going abroad* does not mean ‘My mother caused me to stop going abroad’. Here *stop* has a ‘prevent’ interpretation. Thus the two sentences mean ‘Peter prevented the vehicle from crashing into the fence’, and ‘My mother prevented me from going abroad’. This use of *stop* with prevent meaning can also be followed by a prepositional phrase, e.g. *My mother stopped me from going abroad*. However, the *V-ing* form after the preposition is not a present participle but a gerund, because only NPs can follow prepositions. Gerunds, but not present participles, have the distribution of nouns.

Phrases headed by past participles can also function as predicative complement with an intervening NP, e.g. *I found the icon buried in the wall*, *She kept the wall painted black*, *We saw the students spoken to about that topic*, *I heard the window broken by the strong wind*, *He kept the princess imprisoned in the tower*, etc. There is a slight difference between the construction with present participles and that with past participles. The past participle complements have the passive meaning, and the complements of the examples are interpreted as ‘the wall was painted black’, ‘the students were spoken to’, ‘the window was broken by the strong wind’, etc. The present participle complements, in contrast, do not have the progressive meaning, but show the morphosyntactic features of the present participles, as analysed above.

Participles as predicative complements should be distinguished from prototypical adjectives that are identical in form to participles in the same construction:

(17)

- a. I found him charming.
- b. The author must keep the story interesting.
- a. She considered it superseded.
- b. We left him confused.

The construction of (17a) is the same as that of *I found him smoking*. However, they are different in meaning. *Charming* is a prototypical adjective, denoting the property of the intervening NP *him*, same as *I found him nice*; whereas the present participle *smoking* denotes the event that the intervening NP *him* is involved in. (17b) *The author must keep the story interesting* is of the same construction as *The engineer kept the machine running*. However, *interesting* is a prototypical adjective, denoting the property of *the story*, same as *We must keep the room tidy*; whereas the present participle *running* denotes the event that the intervening NP *the machine* is involved in. The combination *be* + present participle and the combination *be* + prototypical adjective, which are mentioned in section 4.2.1, can be distinguished by *very* modification: prototypical adjectives can be modified by degree adverbs such as *very*, whereas participle cannot. We can use the same test to distinguish the different semantics in the combination V+ NP + V-ing, e.g. compare *I found him very charming*, *The author must keep the story very interesting* and **I found him very smoking*, **The engineer kept the machine very running*. In addition, if the V-ing form is a present participle, the phrase headed by V-ing has the internal structure of VPs, e.g. *charming* is a present participle in *I found him charming the ladies* because *charming* takes a direct object.

4.2.4. Participles as modifiers of nouns

Present participles and past participles can modify nouns, either as an attributive modifier, e.g. *sparkling water*, *leaning tower*, *written report*, *fallen leaves*, or as a postmodifier, e.g. *the girl sitting next to the famous scientist*, *the boy taken to the hospital*. We firstly focus on the postmodification; the attributive modification will be discussed later, together with prototypical adjectives that are identical in form.

Firstly, if a noun that is modified by a participle functions as the direct object in a sentence, the sentence will be the combination of V + NP + participle, which is

superficially the same as a phrase headed by a participle that functions as the predicative complement with an intervening NP. For instance, there is ambiguity in *I saw the boy smoking in the classroom*. The first construction is that the phrase headed by the present participle *smoking* functions as the predicative complement of the matrix verb *saw* with a controlled object *the boy*. The second construction is that the verb *saw* takes a direct object *the boy*, and *boy* is modified by the phrase headed by the present participle *smoking*. Personal pronouns cannot be postmodified by participles.²⁵ Thus, the two constructions can be distinguished if we replace *the boy* by the corresponding pronoun *him*. *I saw him smoking in the classroom* is unambiguously the construction of predicative complementation. Here are some unambiguous examples of participles as a postmodifier of nouns.

(18)

- a. The girl sitting next to Tom is his sister.
- b. The man carrying an umbrella is the thief.
- c. A tile falling from the roof shattered into fragments at his feet.
- d. A mind troubled by doubt cannot focus on the course of victory.
- e. The boy taken to the hospital has survived.
- f. In old times there were many slaves tortured by their masters.

Phrases headed by present participles function as the postmodifier of nouns should be distinguished from another type of postmodification, which is called appositive postmodification, as in (19).

(19)

- a. He had difficulties finding a flat in London.
- b. Mary will have great fun choosing a name for her dog.
- c. Manchester United wasted no time mourning the loss of their Premiership crown.
- d. Martin had offered her a job editing his book, *Plant Forms of Lower Burma*.
- e. The states have no right telling other people what they can do and cannot do with their own body.

²⁵ A very limited range of post-head modifiers are found for pronouns. Personal pronouns with human denotation may be modified by integrated relative clauses, e.g. *We who have read the report know that the allegation are quite unfounded* (Payne & Huddleston 2002: 430).

In postmodification of nouns, the noun that is modified by the phrase headed by a present participle is an argument of the embedded verb of the participle. For instance, in *The girl sitting next to me fell asleep*, *the girl* is the subject of *sitting*. However, in appositive postmodification, the modified noun is not an argument of the embedded verb of the present participle. The construction establishes a relation between the matrix subject and the phrase headed by the present participle. The relation specifies to what degree the matrix subject is successful in realising the event denoted by the present participle. For example, in (19a) *He had difficulties finding a flat in London*, the present participle denotes an event ‘find a flat in Edinburgh’, and how the matrix subject *he* manages the event is *he had difficulties*. In (19b) *Mary will have great fun choosing a name for her dog*, the present participle denotes an event ‘choose a name for her dog’, and how the matrix subject *Mary* manages the event is *Mary will have great fun*. Another analysis of the construction is that the modified noun is described by the phrase headed by the present participle. For instance, in (19d) *Martin had offered her a job editing his book*, the description of the modified noun *job* is *editing his book*.

It must be emphasised again that present participles as postmodification do not have a progressive meaning, because the progressive aspect is not expressed by the present participle itself, but is realised as the composition of the predicate verb *be* and the event-denoting semantics of present participles. For example, *The boy playing the guitar in the band is my cousin*, the modification does not necessarily mean the progressiveness of the event ‘the boy is playing the guitar’. Besides, stative verbs, which do not allow the progressive aspect, can be in the form of present participles and the phrase headed by the present participles can modify nouns.

(20)

- a. Anyone owning more than two houses should pay extra tax.
*Someone is owning more than two houses.
- b. Anyone knowing his whereabouts should contact the police.
*Someone is knowing his whereabouts.
- c. It is a mixture consisting of oil and vinegar.
*The mixture is consisting of oil and vinegar.
- d. Put the banana in the bowl containing fruits.
*The bowl is containing fruits.

4.2.5. Participles as modifiers of clauses

Phrases headed by participles can modify clauses, as free adjuncts. The adjuncts can be headed by present participles (e.g. *Arriving home early, Tom have more time to prepare dinner*) and past participles (e.g. *Interrupted by an audience, he forgot his line*).

Free adjuncts are interpreted as sharing the subject of the matrix sentence. Possible meanings of free adjuncts include time, cause, manner, means, purpose, and result (Kortmann 1991: 18 ff.). The identicalness between the understood subject of the free adjunct and the subject of its matrix sentence represents the default case.

(21)

- a. Driving home after work, Peter accidentally ran a red light.
- b. Standing on the chair, Tom can touch the ceiling.
- c. Knowing their taste, she was able to bring a gift that they would like.
- d. Having won the match, Susan jumped for joy.

In (21a), the understood subject of the adjunct *driving at home after work* is the same as the matrix subject *Peter*. The adjunct with the present participle does not have a progressive meaning. The sentence can be rephrased as ‘When Peter drove home after work, he accidentally ran a red light’. (21c) can be rephrased as ‘Since she knew their taste, she was able to bring a gift that they would like’.

The adjuncts with past participles, however, have a passive meaning.

(22)

- a. Battered by the wind, John fell onto his knees.
(Because) John was battered by the wind, ...
- b. Assured of your support, he would not compromise.
(Since) he was assured of your support, ...
- c. Stored in a cool place, the jam will keep for several months.
(If) the jam is stored in a cool place, ...
- d. Served with ketchup, poached eggs are delicious.
(When) poached eggs are served with ketchup, ...
- e. Lost in the shadows of shelves, the old man almost fell off the ladder.
(Because) the old man was lost in the shadows of shelves, ...

There are cases that phrases headed by participles do not conform to the subject identity rule, i.e. the participles do not assign a θ -role to the matrix subject. These are traditionally called unattached participles or dangling participles (Quirk et al. 1985: 1122-1123). For example, in (23a), the agent of the event denoted by the participle *looking* is not the matrix subject *he*.

(23)

- a. Looking at it objectively, he is definitely at fault.
- b. Putting it mildly, you have caused us some inconvenience.
- c. Travelling to Finland, the weather got colder and colder.
- d. Being Christmas, the government offices were closed.
- e. Woken up by all the noise, the room seemed very dark.

4.2.6. Other constructions with present participles

When present participles follow verbs like *need*, *require*, *deserve*, *want*, the combination expresses a passive meaning. For instance, *Several other points deserve mentioning* means ‘Several other points deserve to be mentioned’. The *V-ing* form is a present participle instead of a gerund because the phrase headed by the *V-ing* form cannot be passivised, e.g. **Mentioning was deserved by several other points*. More examples are shown below in (24):

(24)

- a. These books want taking back to the library.
- b. The house needs painting.
- c. Lentils do not require soaking before cooking.
- d. The experts thought the whole story together deserved commending.

Predicatively used adjectives can take phrases headed by present participles as complements, and the phrase is integrated as subject-controlled complements.

(25)

- a. Mary is busy writing letters.
- b. He was not happy being described as cute.
- c. We are fortunate having aunt Daisy as our babysitter.
- d. The kids got tired hearing the old story again and again.

- e. I feel awful doing that.
- f. What will happen if I am late paying my taxes?

In (25a), *writing letters*, the phrase headed by the present participle is the subject-controlled complement of the adjective *busy*. The matrix subject *Mary* is assigned a Θ -role from both the predicatively used adjective *busy* and the present participle *writing*.

The V-*ing* forms above are present participles, not gerunds, because of the inability of predicatively used prototypical adjectives to alternate with an NP,²⁶ e.g. **Mary is busy all these letters*, and phrases headed by gerunds have the same functions as NPs.²⁷ The construction should not be mixed up with gerunds in extraposition, in which V-*ing* also follows a predicatively used adjective, e.g. *It is pointless buying so much food*. The phrase headed by V-*ing* is an extraposed subject, and the subject position of it is evident when we rephrase the sentence – *Buying so much food is pointless*. The argument position proves the gerund status of that V-*ing* form.

Semantically, the adjectives that take phrases headed by present participles as complements fall into a number of categories (De Smet 2012: 107). Adjectives such as *busy*, *engaged*, *occupied* express a relation of an active occupation of the matrix subject in the event denoted by the present participle, as (25a). Adjectives such as *happy*, *tired*, *fortunate* express an emotive relation between the matrix subject and the event denoted by the present participle, specifying how the former is emotionally affected by the latter, as (25b, c, d, e). Adjectives such as *early*, *late*, *quick* express the manner or degree to which the matrix subject is advancing or has advanced in realising the event denoted by the present participle, as (25f).

Certain verbs whose broad meaning is in respect to posture or motion take a complement headed by a present participle, for example, *sit*, *stand*, *come*, *lie*, etc. The matrix verbs are intransitive verbs. Therefore the following V-*ing* form cannot be a gerund, with the phrase functioning as the direct object. They are analysed as catenative constructions with a phrase headed by a present participle. The participles

²⁶ Prototypical adjectives do not take NPs as complements. There are some exceptions, e.g. *That is worth a fortune*, *The article is worth reading*.

²⁷ A similar construction with gerunds can express the same meaning – the adjective is followed by a prepositional phrase and the complement of the preposition is an NP headed by a gerund. E.g. *Mary is busy with writing letters*, *The kids are tired of hearing the old story again and again*.

are characterised by the reduced semantic prominence of the matrix verb (De Smet 2012: 107; Quirk et al. 1985: 506).

(26)

- a. He stood waiting impatiently.
- b. She came running in great haste.
- c. They went hurrying breathlessly.
- d. He sat reading to the children.

In example (26a) *He stood waiting impatiently*, the phrase is a depictive complement of the matrix verb *stood*. The participle, typically standing by its own, immediately follows the tensed predicate and is controlled by its subject, and becomes an even more integrative part of the primary predication compared with its function as a depictive complement of the matrix verb. This analysis can be shared for phrases that follow *be gone*, *be out*, *be off*. The present participle brings a consequent weakening of the primary meaning of the matrix predicate. For instance, *He is out working*; the emphasis is on ‘he is working’ rather than ‘he is out’. *He is gone fishing* implies that he went out purposely in order to go fishing – an implication of intentionality is missing with *He is gone*. Such function can also be seen with the AdjPs headed by prototypical adjectives, e.g. *She lay drowsy*.

In summary, the discussion of all those constructions shows that gerunds and participles are distinct, and should not be regarded as a single category ‘gerund-participle’. Phrases headed by present participles cannot be passivised, whereas phrases headed by gerunds can. Phrases headed by present participles can follow predicatively used prototypical adjectives, functioning as a complement of that adjective, whereas predicatively used prototypical adjectives are unable to alternate with gerunds. Gerunds cannot follow an intransitive verb, whereas present participles can, with the phrase functioning as a depictive complement of the matrix intransitive verb. If the intransitive verb is an aspectual verb, phrases headed by present participles function as its predicative complement.

4.3. Participles as attributive modifiers of nouns

Although almost any present or past participle can postmodify nouns, they cannot freely premodify nouns. For instance, we can say *Anyone buying/purchasing two items at the same time can get a third one for free*, but not **a buying/purchasing man*²⁸. The following is a discussion of participles modifying nouns attributively.

The combination of X-N, in which X modifies the noun attributively, has several possibilities. X can be a common noun, e.g. *food industry, toy factory, boy actor*; X can be a prototypical adjective, e.g. *delicious food, nice view, lovely girl*; X can be a verb, marginally, e.g. *swimsuit, blowtorch, cookbook*. *Crying baby, sparkling water, discussed plan, boiled water* are examples that present participles and past participles modify nouns attributively.

4.3.1. Present participles as attributive modifiers of nouns

Let us start the discussion of present participles as attributive modifiers of nouns with three groups of examples.

(27)

- a. a sleeping boy, a smiling girl, fading memory, a flying spaceship, a moving train, a leaning tower, falling leaves, rising sun, a sinking vessel, sparkling water
- b. the visiting relatives, the polluting oil-slick
- c. boiling water, growing weeds

Present participles as attributive modifiers are strongly subject-referencing, i.e. the head noun is the agent of the event denoted by the participle. In the first group of examples (27a), the nouns are attributively modified by the present participles of intransitive verbs. The argument relation between the modified noun and the present participle is that the noun is the subject of the participle, i.e. the noun is the agent of the event denoted by the participle. For example, in *a sleeping boy*, *boy* is the subject of *sleeping* as in ‘a boy sleeps’; in *falling leaves*, *leaves* is the subject of *falling* as in

²⁸ *Purchasing* can be used attributively, e.g. *purchasing power*. However, here *purchasing* is not a present participle, but the associated V-ing nominal of the verb *purchase*, as can be seen by the fact that *purchasing power* cannot be rephrased as ‘power that purchases’.

‘leaves fall’. In the second group of examples (27b), the modifiers are present participles of transitive verbs. There is also a clear argument relationship between the head noun and the modifier. The head noun is the subject of the present participle. For example, *the polluting oil-slick*, *oil-slick* is the subject of *polluting*, i.e. it is the oil-slick that pollutes the area/environment, not the oil-slick that is polluted by something else. In the third group of examples (27c), the embedded verbs of the present participles have both transitive/causative and intransitive meanings. The head nouns are much likelier to refer to the subject of the intransitive verbs, rather than the corresponding object of the transitive verb. For example, *boiling water* is the water that boils or that is boiling, rather than the water that is boiled; *growing weeds* are weeds that are growing rather than weeds that are grown.²⁹

Present participles as attributive modifiers of nouns display a high degree of polysemy. A present participle can apply to a vast range of head nouns. For instance, there are numerous applications of which the present participle *running* is capable: *a running man* ‘a man that runs/is running’, *running water* (as opposed to stagnant water), *the running price* ‘the current price’, *a running title* ‘a short title printed at the top of the page’. The last *running* is used figuratively. Such figurative use can also be illustrated by *sleeping partner* ‘a partner not sharing in the actual work of a firm’.

4.3.2. Past participles as attributive modifiers of nouns

Past participles can modify head nouns attributively. The argument relationship is that the head noun is the subject of the predicatively used past participle; or in the corresponding active sentences, the head noun is the object.

(28)

- a. the rejected suitor

The suitor was rejected (by the girl).

The girl rejected the suitor.

²⁹ Another example is *developing countries*, in which *develop* is also a verb that has both transitive and intransitive use. However, there are multiple possible interpretations. *Developing countries* can be interpreted as ‘countries that develop or countries that are developing’. *Developing countries* are also called ‘underdeveloped countries’, which comes from the name *developed countries*. *Developed countries* are countries that have a highly developed economy. In *developed countries*, *developed* is a past participle, as we can interpret it as ‘countries that have developed’.

- b. the discussed plan
The plan was discussed (by the committee).
The committee discussed the plan.
- c. the killed soldier
The soldier was killed (by the enemy).
The enemy killed the soldier.
- d. the rescued man
The man was rescued (by the team).
The team rescued the man.
- e. acquired knowledge
Knowledge was acquired (by the participants).
The participants acquired knowledge.

We have mentioned above that attributive modification has several possibilities. Prototypical adjectives are typically in such prenominal position, modifying nouns attributively. There are prototypical adjectives that are identical in form to the past participles. We need to discuss whether a noun is modified by a past participle or the corresponding prototypical adjective. Compare the examples from (28) with *a tired girl*, *the confused scholars*, *the annoyed parents*, *the bored boy*, *the excited audience*, etc., in which the modifier is an adjective that denotes a property of the head noun, not a past participle, denoting an event that the head noun is involved in. Both past participles and prototypical adjectives can modify nouns attributively. The diagnostics to distinguish the two are the features of prototypical adjectives. Prototypical adjectives can be modified by degree modifiers such *very*, *too*, etc. and have comparative form, whereas past participles cannot.

(29)

- a. the very tired girl
the more tired girl
- b. the very confused scholar
the more confused scholar
- c. the very annoyed parents
the more annoyed parents
- d. the very bored boy
the more bored boy

- e. the very excited audience
the more excited audience
- (30)
- a. *the very rejected suitor
*the more rejected suitor
 - b. *the very discussed plan
*the more discussed plan
 - c. *the very killed soldier
*the more killed soldier
 - d. *the very rescued man
*the more rescued man
 - e. *the very acquired knowledge
*the more acquired knowledge

Note that not all adjectives have these features. Only gradable adjectives can be modified by degree adverbs and have comparative/superlative forms. There are also ungradable adjectives, e.g. **very dead*, **deader (more dead)*, **too feline*, **more feline*.

It can be ambiguous when a past participle or its corresponding prototypical adjective is used predicatively, specifically after the verb *be*, without further modification. For example, *The window was closed* can denote the event that someone closed the window, where *closed* is a past participle, which has event-denoting semantics; the example can also denote the property of the window, i.e. that it is not open, where *closed* is a prototypical adjective, which has property-denoting semantics. However, when *closed* modifies a noun attributively, it is unambiguously a prototypical adjective; *closed window* means ‘window that is not open’. Similarly, *cooked beef* means ‘beef that is not raw’, though the predicatively used *cooked* is ambiguous. Adverb modification is another way to tell the ambiguity because degree adverbs only modify properties. For instance, *The beef was cooked*. We can decide the meaning and the status of *cooked* depending on the adverb modification.

- (31)
- a. The beef was cooked slowly. (past participle, event-denoting)
 - b. The beef was barely cooked. (prototypical adjective, property-denoting)

As mentioned in section 4.1.1, phrases headed by past participles can also function as the predicative complement of the verb *have*. The composition of the predicate verb *have* and the event-denoting semantics of past participles expresses the perfect aspect. The perfect aspect construction is applicable to past participles of any verb except modal verbs; however, there are restrictions on the verb when the past participle modifies nouns attributively with the same interpretation. For instance, we can call a prisoner who has escaped an *escaped prisoner*, a passport which has expired an *expired passport*; but a patient who has coughed is not a **coughed patient*, and an author who has written many books is not a **written author*.

Only if the embedded verb of the past participle is an unaccusative intransitive verb, the participle can modify nouns attributively with an interpretation of the perfect aspect of the event denoted by the past participle.³⁰ Let us compare the two sets of examples:

(32)

*a cried baby, *the laughed audience, *a swum man, *the exercised athletes,
 *a sung tenor, *a yawned student, *a coughed patient, *a slept dog, *a
 jumped cat, *the shouted victim, *a sneezed boy, *a written author (in the
 sense of an author who has written something), *a cooked chef

(33)

fallen leaves (leaves that have fallen)
 elapsed time (time that has elapsed)
 an expired passport (a passport that has expired)
 an escaped prisoner (a prisoner who has escaped)
 sprouted peas (peas that have sprouted)
 wilted lettuce (lettuce that has wilted)
 swollen feet (feet that have swollen)
 a failed actor (an actor who has failed)
 vanished civilisations (civilisations that have vanished)
 departed guests (guests who have departed)
 melted snow (snow that has melted)

³⁰ Note that these past participles cannot follow the predicate verb *be* with the combination expressing passive voice.

The examples in (32) are ill-formed. The composition of the predicate verb *have* and the event denoting semantics of the participle expresses the perfect aspect, e.g. *The baby has cried*. However, we cannot have **a cried baby* which means ‘a baby that has cried’, or **a coughed patient* which means ‘a patient that has coughed’. Similarly, *a cooked chef* does not mean ‘a chef that has cooked something’, and it can only mean ‘a chef that is cooked’; **a sung tenor* does not mean ‘a tenor that has sung something’, and a tenor cannot be sung.

The examples in (33) are grammatical. These past participles are formed from unaccusative intransitive verbs. The subjects of these verbs are themes which undergo the motion or change of state specified by the verb (Bresnan 1982a: 30). The noun that is modified attributively by the past participle is the subject of the embedded unaccusative intransitive verb.

There are a group of verbs that have both transitive and unaccusative intransitive use, such as *boil* (*He boiled the water – The water boils*), *grow* (*The farmer grows tomatoes and peppers this year – This plant grows best in the shade*), *break* (*He broke my computer – The water pipe broke*), *develop* (*The company plans to develop new products – The situation developed over the last few days*). The interpretation of the past participle whose embedded verb belong to this group as attribute is underspecified, and largely depends on the head noun and the encyclopedic knowledge. For instance, *a grown man* can only mean ‘a man who has fully grown’ but not ‘a man who is grown by someone’.

4.4. Participles and identical prototypical adjectives

Participles have the syntactic distribution of adjectives. Like phrases headed by prototypical adjectives, phrases headed by participles can function as predicative complements, modifiers of nouns and modifiers of clauses. There are prototypical adjectives that are identical in form to participles. Despite the same distribution and form, we can distinguish prototypical adjectives from their participle counterpart, because there are certain differences between participles and prototypical adjectives. The morphology of prototypical adjectives that are in the form of participles is discussed in chapter 5. Chapter 6 analyses the categorial status of participles and

adjectives, where we can have a full understanding of the relation between participles and adjectives.

4.4.1. Present participles and prototypical *V-ing* adjectives

Prototypical adjectives and participles have the same distribution. However, prototypical adjectives have several features that are not shared by participles: 1) prototypical adjectives can be modified by degree adverbs, such as *very*, *too*; 2) they have comparative and superlative forms; 3) phrases headed by prototypical adjectives can function as the predicative complement of verbs like *seem*, *look*, *sound*, *feel*; 4) prototypical adjectives can be negated by *un-* prefixation; 5) they can have the suffix *-ness* or *-ity* attached and be derived into a noun.³¹

Both present participles and prototypical *V-ing* adjectives can modify nouns attributively, e.g. *a sleeping boy*, *a charming boy*. However, present participles do not have the features of prototypical adjectives. Thus, we can distinguish present participles from prototypical *V-ing* adjectives. Firstly, prototypical *V-ing* adjectives can be modified by degree adverbs, whereas present participles cannot. Secondly, prototypical *V-ing* adjectives have comparative and superlative forms, whereas present participles do not.

(34)

- a. a very charming boy, a very boring story
- b. *a very sleeping boy, *very falling leaves

(35)

- a. a more charming boy, the most boring story
- b. *a more sleeping boy, *the most falling leaves

However, note that not all adjectives are gradable, but only property-denoting ones are. Thus, if a *V-ing* form can take degree adverb modification and have comparative or superlative form, it is a prototypical *V-ing* adjective; however, if a *V-ing* form does not have such features, it does not mean that this *V-ing* form is not an adjective. There are semantic differences between prototypical *V-ing* adjectives and present

³¹ Note that these features are not the features of adjectives in general, but the features of prototypical adjectives. For instance, there are ungradable adjectives: *dental decay* – **more*/**very dental decay*, **undental decay*.

participles. Present participles are event-denoting, whereas prototypical adjectives are property-denoting. For instance, *a sleeping boy* is a boy who is involved in the event that the boy sleeps, and the present participle *sleeping* denotes a more or less temporal process; *a charming boy* is a boy with a certain kind of property, and the prototypical adjective *charming* denotes a relatively permanent quality of the boy, rather than the event that a boy charms someone. A boy who is charming someone is not necessarily charming, and a charming boy is not necessarily involved in the event of charming someone.

Phrases headed by prototypical V-*ing* adjectives can function as the predicative complement of the verb *be*, e.g. *The boy is charming*, *The trip was tiring*. Phrases headed by present participles can also be the predicative complement of the verb *be*, e.g. *The boy is sleeping*, *The leaves are falling*. However, the combination of the predicate verb *be* and a present participle expresses the progressive aspect, and the present participle denotes an event that the subject is involved in; whereas a prototypical V-*ing* adjective as the predicative complement denotes a property of the subject. The difference is evident in meaning, and they can be distinguished via *very* modification or comparative form, as mentioned above. Additionally, the difference can be confirmed by the inability of present participles to occur after verbs that select property-denoting complements only (Fabb 1984; Huddleston 1984: 319). Verbs such as *seem*, *appear*, *become*, *remain*, *look*, *sound*, etc. can take prototypical adjectives as a complement, but not present participles.

(36)

- a. The story seems interesting.
- b. The plan sounds exciting.
- c. The boy looks charming.
- d. The story became boring.

(37)

- a. *The prices seem falling.
- b. *The sun looks rising.
- c. *She became laughing.
- d. *The boy sounds crying.

When a phrase headed by a *V-ing* form functions as the predicative complement of *be*, whether *V-ing* is a present participle or a prototypical *V-ing* adjective can also be distinguished by the internal structure of the phrase. For example, compare *The boy is running* and *The boy is charming*. We can easily tell that *running* is a present participle and *charming* is a prototypical adjective, not only from the difference in meaning but also from the internal structure of the complement. Because *charm* is a transitive verb, then if *charming* is a present participle, it should take a direct object, as in *The lady is charming the audience*.

However, this does not mean that the *V-ing* form of intransitive verbs is excluded from being prototypical adjectives. For example, the *V-ing* form of the intransitive verb *last* in *Their relationship was lasting* is ambiguous, because it can be either a present participle or a prototypical adjective. *Lasting* being a prototypical adjective can be proven by its function as the predicative complement of verbs such as *seem* (*Their relationship seems lasting*), or by degree adverb modification (*a very lasting relationship*).

In summary, when a phrase headed a *V-ing* form functions as the predicative complement of the verb *be*, there are two possible analyses of *V-ing* if the embedded verb is transitive. If the *V-ing* form takes a direct object, it is a present participle, and the combination expresses the progressive aspect; otherwise, the *V-ing* form is a prototypical adjective. For instance, in *She was mowing the lawn*, *mowing* is a present participle because it takes a direct object *the lawn*; similar with *He was disturbing everyone*. In contrast, in *What he said was disturbing*, *disturbing* is not followed by a direct object, and thus it is not a participle; *disturbing* is a prototypical adjective because it has the features of prototypical adjectives, e.g. *What he said was very disturbing*, *What he said sounded disturbing*.

The combination with an aspectual verb provides another test, since the complement of some aspectual verbs can be a phrase headed by a present participle but not an AdjP headed by a prototypical adjective (Emonds 1991), compare *John started learning German* and **John started happy with his new life*, *He stops laughing at me* and **He stops angry at me*.

Some *V-ing* forms have the realisations of both a present participle and a prototypical adjective. For example, *charming* is either a present participle as in *The*

singer was charming the audience; or a prototypical adjective as in *a very charming singer*, *The singer seemed very charming*. However, such a V-ing form cannot be both a present participle and a prototypical adjective at the same time, because V-ing cannot denote an event and a property at the same time. Thus, we cannot say, for instance, **The singer was very charming the audience* or **The singer seemed charming the audience*.

There are further diagnostics for distinguishing prototypical V-ing adjectives from present participles, in terms of derivational morphology. The prototypical adjectives can be negated via *un-* prefixation, whereas present participles cannot.

(38)

- a. interesting – uninteresting
- b. exciting – unexciting
- c. surprising – unsurprising
- d. exciting – unexciting
- e. pleasing – unpleasing

(39)

- a. laughing – *unlaughing
- b. falling – *unfalling
- c. teaching – *unteaching
- d. crying – *uncrying
- e. walking – *unwalking

Un- is prefixed to an adjective A, and forms an adjective that means ‘not A’, e.g. *unreal*, *unhappy*, *uninteresting*. The negation *un-* is not allowed with verbs (Poutsma 1923: 200). Unlike prototypical adjectives but like verbs, present participles are not compatible with the negation prefix *un-*, as shown in (39). It seems that there are examples when a present participle takes a negation prefix *un-*; however, the outcome of the prefixation is devoid of almost all verbal semantics of the present participles and is actually a prototypical adjective. The *un-* negation credits the prefixed participles the property-denoting semantics.

(40)

- a. His face is hard and unsmiling.
- b. The moor can be a very wild and unforgiving place in bad weather.

- c. He took secret pictures of his unknowing victims.
- d. People are incredibly unthinking about such a number of important things.
- e. It is very unfeeling of him to leave his family.
- f. the unsleeping eye of justice

Besides, prototypical adjectives can be attached to the nominal suffix *-ness* to form a noun, whereas present participles cannot.

(41)

- a. interesting – interestingness
- b. boring – boringness
- c. annoying – annoyingness
- d. amazing – amazingness

(42)

- a. laughing – *laughingness
- b. falling – *fallingness
- c. rising – *risingness
- d. walking – *walkingness

In summary, present participles and prototypical adjectives have the same syntactic distribution, i.e. phrases headed by both present participles and prototypical adjectives can function as modifiers of nouns, modifiers of clauses and predicative complements. However, because of the features of prototypical adjectives and the internal structure of phrases headed by present participles, we can distinguish prototypical *V-ing* adjectives from present participles.

It is worth mentioning that in all dictionaries, *following* as in *the following day/question* is listed as an adjective, which means ‘the next’. *Following* has the distribution of adjectives but does not comply with the features of prototypical adjectives. *Following* cannot be modified by degree adverbs, e.g. **a very following day*; it cannot be the complement of verbs such as *seem*, e.g. **A question seems following*; in terms of morphology, *following* cannot be attached to the suffix *-ness*, e.g. **followingness*. However, why does *following* belong to the category of adjectives despite the lack of these features? That is because these features are not features of adjectives in general, but those of a specific type of adjectives – property-denoting adjectives. If *following* is an adjective, then all present participles belong to

the category of adjectives. Chapter 6 will discuss the relationship between participles and adjectives in detail and argue that participles are adjectives.

Similarly, there are some *V-ing* forms, whose embedded verb has either an emotion or motion interpretation. The *V-ing* form is regarded as a prototypical adjective under the emotion interpretation and has the features of prototypical adjectives; while under the motion interpretation, the *V-ing* form is regarded as a present participle. Then why do the words of the same form with the same syntactic distribution belong to different categories – one adjective and the other verb?

(43)

- a. The story/train is moving.
The story is very moving.
*The train is very moving.
- b. Russian history is occupying/Russian armies are occupying here.
Russian history became occupying.
*Russian armies became occupying.
- c. He brought back a stirring report/spoon.
He brought back a very stirring report.
*He brought back a very stirring spoon.
- d. His gesture is touching/His hand is touching the surface.
His gesture is very touching.
*His hand is very touching.
- e. sparkling conversation/water
a very sparkling conversation
*very sparkling water
- f. The performance/lamp is glittering.
The performance is very glittering.
*The lamp is very glittering.

(some examples adapted from Brekke 1988: 172)

The examples in (43) illustrate the difference between the pairs of the same *V-ing* with the same distribution. The prototypical *V-ing* adjectives are compatible with degree adverb modification and complementation with verbs that take the property-denoting complements, whereas the present participles are not. The two types of V-

ing forms have different semantics, for instance, in *a moving train* ‘a train that moves (from A to B)’, *moving* is event-denoting, whereas in *a moving story* ‘a story that moves me, emotionally’, *moving* is property-denoting.

There is another set of data worth discussing here. Some present participles can become prototypical adjectives if a specialised sense is introduced in use, having undergone a semantic shift. Such *V-ing* forms are used to express attributing traits or definable characteristics rather than merely repetitious or customary actions (Gove 1965: 45), i.e. the *V-ing* form has property-denoting semantics rather than event-denoting semantics. For instance, *a yielding* [= submissive or compliant] *but by no means spineless young person*, *his biting* [= sarcastic] *smile*, *a slightly vaunting* [= boastful] *smile*, *a very inviting prospect*, *a very taking style*, *a fleeting impression*, *a promising future*, *a demanding job*. There is a semantic shift from the verb to the present participle when it is used as a prototypical *V-ing* adjective, or there is a semantic drift from the present participle to the prototypical *V-ing* adjective. Compare the following prototypical adjectives and the corresponding present participles.

(44)

- a. telling
a very telling argument
He is telling us a joke.
- b. promising
The neighbourhood did not look very promising.
I am not promising any miracles.
- c. inviting
a very inviting prospect
I am not inviting him.
- d. taking
a very taking person
He is taking a walk.

Under an emotional or metaphorical interpretation, the *V-ing* form is a prototypical adjective, denoting properties. Otherwise, the *V-ing* form is a present participle, denoting events. However, the interpretational difference does not entail a difference

in category. That is to say, the prototypical V-*ing* adjectives and the corresponding present participles belong to the same category – adjectives.

4.4.2. Past participles and prototypical adjectives of the same form.

There have been studies about past participles and the prototypical adjectives that are of the same form. Although past participles and those prototypical adjectives are identical in form, several studies argue that they are categorially distinct – the former are verbs while the latter are adjectives (Bresnan 1978, 1982b; Siegel 1973, 1974; Wasow 1977). Besides, not all past participles have an adjectival counterpart, and the adjectives corresponding to certain types of participles are systematically excluded.³² However, it has long been noticed that there is considerable overlap in the distribution of adjectives and participles. Freidin (1975) analyses the passive predicate³³ as an AdjP – in which case what is called the passive verb (past participle) would be labelled an adjective.

We have discussed the comparison between present participles and prototypical V-*ing* adjectives above. The comparison between the past participles and the corresponding prototypical adjectives is very similar. Although past participles and prototypical adjectives have the same distribution, there are some differences between them. Let us compare the two that share the same form and analyse the differences.

Note that some past participles cannot occur in the attributive position, but there are also prototypical adjectives that lack this function, e.g. **an asleep child*, **an alone child*.

(45)

- a. **the owned property*
The property is owned by someone.
- b. **the chased criminal*
The criminal was chased by the police.

³² The morphology of participles and the identical prototypical adjectives will be discussed in chapter 5.

³³ The term ‘passive predicate’ in Freidin (1975) denotes a past participle when it is used in passive construction or interpreted with a passive meaning.

- c. *a cried baby
The baby has cried.
- d. *a coughed patient
The patient has coughed.

Firstly, prototypical adjectives are gradable, and thus can be modified by degree modifiers such as *very*, *too*, whereas participles, which are event-denoting, cannot. Thus, if a *V-ed* form (or the irregular forms) is compatible with such modification, it is a prototypical adjective.

(46)

- a. a very tired girl
- b. The children were extremely bored.
- c. They are too excited.
- d. She is quite interested.
- e. He was very drunk.

(47)

- a. *the very written word
- b. *The car was very repaired.
- c. *The samples were rather compared.
- d. *The bridge was extremely built.
- e. *Her question was very answered.

Prototypical adjectives are gradable, thus have comparative or superlative forms, while participles are not gradable. Thus, a *V-ed* form (or an irregular form) which has comparative or superlative forms is a prototypical adjective.

(48)

- a. She was more tired than her brother.
- b. The children were more excited than the parents.
- c. She was more interested than he was.
- d. She was the most scared one.
- e. I was drunker than I thought.

(49)

- a. *the more written word
- b. *The car was more repaired.

- c. *The samples were more compared.
- d. *The bridge was more built.
- e. *Her question was more answered.

Both phrases headed by past participles and phrases headed by prototypical adjectives can function as the predicative complement of *be*. However, some verbs do not take participle complements, such as *seem*, *become*, *look*, *sound*, and these verbs take prototypical adjectives as the predicative complement. Thus, a V-*ed* form (or an irregular form) that follows such verbs is a prototypical adjective.

(50)

- a. She looked tired.
- b. The children seem excited.
- c. He seems bored.
- d. The boy sounds frustrated.
- e. He looks drunk.

(51)

- a. *The word seems written.
- b. *The car becomes repaired.
- c. *The samples look compared.
- d. *The bridge seems built.
- e. *He question sounds answered.

Phrases headed by past participles and prototypical adjectives can function as the predicative complement of *be*. The agentive *by* phrase is the sign of passive voice construction.³⁴ The NP in the *by* phrase is the agent of the event that the participle denotes. Therefore, if there is a following *by* phrase, this indicates that the predicative complement of *be* is headed by a past participle rather than a prototypical adjective of the same form; and the combination *be* + past participle expresses the passive voice of the event.

(52)

- a. The topic has been discussed by the group.
- b. The soldiers were killed by the enemy.

³⁴ An agentive *by* phrase is a sign of past participles, however, there are cases where the past participle cannot take a *by* phrase, e.g. *Max was born in 1990*, */P/ is realised as f preconsonantly*, *Moses was reincarnated as a butterfly*.

- c. Alice was bitten by her neighbour's dog.
- d. The wine was drunk by his father.

The status of the past participles in (52) is evident in meaning and can be proven by the following agentive *by* phrase. These sentences express the passive voice, and the NP in the *by* phrase corresponds to the subject of the active sentence, e.g. the active version of (52a) is *The group has discussed the topic*. Prototypical adjectives are not compatible with an agentive *by* phrase, e.g. **Mary was happy by the trip*, **The dress is beautiful by the designer*. Prototypical adjectives can combine with prepositional phrases, but they do not seem to be very systematic, for instance, *be tired of*, *be annoyed at*, *be bored with*, *be interested in*, *be disappointed with*, *be horrified at*, *be surprised at*, *be afraid of*, *be fond of*, *be angry with*, etc.

Another diagnostic for past participles is a following predicative complement or adjunct, because such predicative complement or adjunct may not appear directly after prototypical adjectives.

(53)

- a. The coffee was served hot.
*The coffee was delicious hot.
- b. The speech was considered profound (by everyone)
*The speech was nice profound.
- c. He was driven mad.
*He was angry mad.
- d. John is considered a successful teacher.
*John is obvious a successful teacher.
- e. Mary was elected President.
*Mary was happy President.

The grammatical sentences in (53) are the combination *be* + past participle that expresses the passive voice; the corresponding active sentences are:

(54)

- a. The waiter served the coffee hot.
- b. Everyone considered the speech profound.
- c. His flatmates drove him mad.
- d. We considered John a successful teacher.

- e. They elected Mary President.

Although past participles and the prototypical adjectives of the same form are compatible with the same type of complementation, they can be distinguished from each other. The difference is apparent in meaning – the former with event-denoting semantics, and the latter with property-denoting semantics. In addition, the agentive *by* phrase and the features of prototypical adjectives can tell them apart.

(55)

- a. He was persuaded to go to the doctor.
- b. He was persuaded by his mother to go to the doctor.
- c. *He was very persuaded to go to the doctor.
- d. *He seemed persuaded to go to the doctor.

(56)

- a. He was delighted to see his old friend again.
- b. He was very delighted to see his old friend again.
- c. He seemed delighted to see his old friend again.
- d. *He was delighted by someone to see his old friend again.

The participle status of *persuaded* in (55) and the prototypical adjective status of *delighted* in (56) is shown in meaning and tested by the feature differences. The agentive *by* phrase in (55b) is a piece of evidence showing that *persuaded* is a past participle, and the combination *be* + *persuaded* expresses the passive voice. The corresponding active sentence is *His mother persuaded him to go to the doctor*. The ungrammaticality of (55c, d) illustrates that *persuaded* does not have the features of prototypical adjectives. (56b, c) illustrate the features of the prototypical adjective *delighted*. (56d) shows that *delighted* is not compatible with an agentive *by* phrase, and thus it is not a past participle, the sentence not expressing the passive voice.

For ditransitive verbs, we can tell the past participle status of a *V-ed* form (or the irregular forms) in a passivised double object construction.

(57)

- a. Mary gave him a book.
A book was given to him.
He was given a book.
- b. Mary told her son a story.

A story was told to her son.

Her son was told a story.

- c. Mary sent us a letter.

A letter was sent to us.

We were sent a letter.

Participles cannot be modified by degree adverbs because of their event-denoting semantics, whereas prototypical adjectives can, compare **The question was very answered* and *The girl was very tired*.

(58)

- a. **the very piled books*
**The books were very piled.*
- b. **the extremely solved problems*
**The problems were extremely solved.*
- c. **the very sung national anthem*
**The national anthem was very sung by them.*

The past participles and the identical prototypical adjectives can be distinguished from each other because of their difference in semantics. We can disambiguate, for example, *The door was closed*. The sentence could either mean ‘The door was not open’, where *closed* is a prototypical adjective, or ‘Someone or something closed the door’, where *closed* is a past participle. The status of *closed* can be disambiguated by some modification, for instance, in *The door looks closed*, *closed* is unambiguously a prototypical adjective, in *The door was closed by the strong wind*, *closed* is a past participle without ambiguity. A V-*ed* form (or an irregular form) cannot be a participle and a prototypical adjective at the same time, because the event-denoting semantics and the property-denoting semantics cannot be realised together, as shown by the ungrammaticality of the sentence **The door looked closed by the strong wind*. Another ambiguous example with *cooked* is illustrated below.

(59)

- a. The chicken was cooked. ‘The chicken was not raw.’
The chicken seemed cooked.
The chicken was barely cooked.
The chicken was uncooked.

- b. The chicken was cooked. ‘Someone cooked the chicken.’
The chicken was cooked by my mother.
The chicken was slowly cooked/ cooked slowly.
- c. *The chicken seemed cooked by my mother.
*The chicken seemed slowly cooked.
*The chicken was uncooked by my mother.

Since the adjective negation prefix *un-* enforces property-denoting semantics, the prefixed past participles are prototypical adjectives, and therefore should be incompatible with an agentive *by* phrase, which is diagnostic for past participles. Note that negation prefix *un-* is different from reversal prefix *un-*, which attaches to verbs, expressing the reversal of the action denoted by the base verb, e.g. *to unzip the jacket*. The past participle of such verbs with reversal prefix is compatible with a *by* phrase. Compare:

(60)

- a. *The meat is uncooked by the chef.
- b. *The food was untouched by the guest.
- c. *The email was unsent by him.

(61)

- a. The jacket was unzipped by someone wearing nail polish.
- b. The truck has been unloaded by those men.
- c. The luggage was unpacked by my mother.

There are, however, counterexamples, where the negated adjectives whose unprefixed part is a past participle occur with agentive *by* phrases.

(62)

- a. The Antarctic is uninhabited by humans.
- b. The cat was unnoticed by the guests when walking through the dining room.
- c. His theory was unchallenged by experts.
- d. That claim is unsupported by the data.
- e. One fact is unexplained by this formation.
- f. Mary is unprotected by insurance.
- g. How to cope with being unloved by our parents?

However, such combination is only sporadically found in examples, as we can compare examples in (62) with **The Antarctic is uninhabited by the women*, **One fact is unexplained by the student*. **Mary was unprotected by her boyfriend*. Thus, the negation prefix *un-* diagnostics and *seem* complementation diagnostics of prototypical adjectives and the *by* phrase diagnostics of past participles are unchallenged by those exceptions, as in (62).

That a *by* phrase appear with prototypical adjectives is also illustrated by some other examples, such as *He seems disturbed by what he saw at the baby murder scene*. The situation with passivised psych verbs (e.g. *disturb*, *amuse*, *confuse*, *worry*) is even more complicated because of the ambiguity between an agentive reading and a non-agentive reading of these verbs.³⁵ In the example *The children were amused*, *amused* can either be a prototypical adjective or a past participle. If *amused* is a past participle that follows *be* as the predicative complement, it denotes the event that someone/something amused the children, and the sentence expresses the passive voice. If *amused* is a prototypical adjective that follows *be* as the predicative complement, it denotes the property of the subject, i.e. how the children felt, and the sentence has the same semantics as *The children were happy*. Specific modification can disambiguate the sentence: in *The children were very amused*, *amused* is a prototypical adjective, because it is modified by the degree adverb *very*; in *The children were amused by the clown*, *amused* is a participle, because there is an agentive *by* phrase following. However, *The children were very amused by the clown* is fine, even though that *amused* is modified by *very* and followed by an agentive *by* phrase at the same time. More examples illustrate such complexity:

(63)

- a. The students seemed very intrigued.
 The students were intrigued by the question.
 The students seemed very intrigued by the question.
- b. I felt very embarrassed whenever I talked to her.
 I was embarrassed by the unexpected laughter.

³⁵ Psych verbs such as *worry*, *concern*, *perturb* and *preoccupy* are more or less unambiguously non-agentive, e.g. *The situation worried Fred*. In *Fred was worried about the situation*, the Experiencer is realised as the subject *Fred*, and the prepositional phrase corresponds to the Theme, not an agent (Grimshaw 1990: 113). Therefore, here it is not an agentive phrase, and the preposition is also not *by*.

I felt very embarrassed by the unexpected laughter whenever I talked to her.

- c. The kid looked frightened.

The kid was frightened by thunder.

The kid looked frightened by the thunder.

My explanation of this complexed contradiction is that prototypical adjectives can also combine prepositional phrases, but they do not seem to be very systematic, as mentioned on page 97. Prototypical adjectives take different prepositions, not only *by*, e.g. *I am interested in the movie*, *The children were bored with the game*, *Tom was very disappointed in the new book*, etc.; whereas past participles combine with the preposition *by* in particular.

Another pair of examples are worth mentioning here: the past participle *drunk* and the prototypical adjective *drunk*. For instance, in *The wine was drunk by the student*, *drunk* is a past participle, denoting the same event as the active sentence ‘The student drank the wine’; in *The student has drunk the wine*, *drunk* is a past participle, and the sentence expresses the perfect aspect of the event. In the example *The student was drunk*, *drunk* is a prototypical adjective, having no direct relation to the verb *drink*, and it means ‘affected by alcohol to the extent of losing control of one’s faculties or behaviour’. The semantics of the participle *drunk* and the prototypical adjective *drunk* are different from each other – the former has event denotation whereas the latter has property denotation. Whether it is a past participle or a prototypical adjective can be tested.

(64)

- a. The wine was drunk by his father.

*The student was drunk by someone.

- b. *The wine looks drunk.

The student looks drunk.

- c. *The wine is very drunk.

The student is very drunk.

4.5. Summary

This chapter discusses participles – present participles and past participles. The distribution of present and past participles is analysed in detail. Participles have the distribution of adjectives; phrases headed by present participles can function as predicative complements, modifiers of nouns and modifiers of clauses. Gerunds, discussed in chapter 3, however, have the distribution of nouns, phrases headed by gerunds occurring in argument positions and other positions that allow NPs. Because of the distributional differences, even though present participles and gerunds are identical in form, they should be distinguished from each other. Gerunds and present participles can occur in some superficially identical combinations, such as Verb + V-*ing*; however, the combination is actually realised as different constructions. Thus, if gerunds and present participles were not distinct from each other, we would not be able to tell the difference between those distinct constructions.

Participles have the distribution of adjectives, and thus participles belong to the category of adjectives. However, participles are different from prototypical adjectives in specific ways. Prototypical adjectives that are in the form of participles can be distinguished from the corresponding participles. That is because participles do not have the features of prototypical adjectives and phrases headed by participles have the internal structure of VPs. The reason for the differences is that participles and prototypical adjectives have different semantics. Participles denote events, whereas prototypical adjectives denote properties. The relationship between participles and adjectives will be further discussed in chapter 6.

Chapter 7 focuses on distinguishing gerunds and present participles from each other by comparing their syntactic distribution. We will see that the distinction between gerunds and present participles can and must be sustained.

Chapter 5. Nominalisation and adjectivalisation

5.1. Introduction of the morphological analysis

This chapter discusses the morphology of associated *V-ing* nominals and prototypical adjectives that are identical in form to participles. In traditional grammar, as well as Huddleston & Pullum (2002), gerunds and participles are analysed as inflected forms of verbs. Associated *V-ing* nominals are nouns, and prototypical adjectives that are in the form of participles are adjectives, i.e. they are derived forms of verbs.

Assuming that gerunds and participles are inflected forms of verbs, there are three possible analyses for the morphology of associated *V-ing* nominals and prototypical adjectives that are in the form of participles. First, a derivational analysis: verbs are derived into nouns and adjectives via *-ing* or *-ed* suffixation. Associated *V-ing* nominals (e.g. *The writing of a book is difficult*, *The building of the bridge took three years*) are nouns derived from verbs; prototypical adjectives that are in the form of participles (e.g. *The book is interesting*, *The boy is tired*, *The passport is expired*) are adjectives derived from verbs. Second, an inflection-plus-conversion analysis: gerunds and participles, which are analysed as inflected forms of verbs, are converted into nouns or adjectives that are identical in form. Associated *V-ing* nominals are converted from the corresponding gerunds; prototypical adjectives in the form of participles are converted from the corresponding participles. Third, diachronic individual lexicalisation: the nouns and adjectives are individually lexicalised in the history of English. There are problems with each morphological analysis, which will be discussed in detail in this chapter.

Associated *V-ing* nominals and gerunds have the same form and syntactic distribution – they are both in the form of *V-ing* and have the distribution of nouns. However, there is a structural difference between phrases headed by associated *V-ing* nominals and phrases headed by gerunds. Unlike ordinary NPs, including phrases headed by associated *V-ing* nominals, phrases headed by gerunds have the internal structure of VPs. How should we explain such a phrase structural difference? Is the difference related to their morphology – associated *V-ing* nominals being derived from verbs, whereas gerunds being inflected forms of verbs, which is the

analysis of traditional grammar and Huddleston & Pullum (2002)? However, if gerunds are inflected form of verbs, why do they have the distribution of nouns?

Another interesting contrast is that between participles and the corresponding prototypical adjectives. Both of them have the distribution of adjectives. However, they differ in that firstly, participles lack the features of prototypical adjectives, and secondly, phrases headed by participles have the internal structure of VPs. The differences are related to the fact that participles and prototypical adjectives have different semantics, as mentioned in chapter 4. Prototypical adjectives have property-denoting semantics, whereas participles have event-denoting semantics. The question is whether such a difference is purely caused by the semantics, or whether it is a distributional difference which is related to the morphology of participles and the corresponding prototypical adjectives. So are participles inflected verb forms, unlike prototypical adjective derived from verbs, which is the analysis of traditional grammar and Huddleston & Pullum (2002)? However, if participles are inflected verb forms, why do they have the distribution of adjectives?

5.2. Derivation from verbs

5.2.1. The derivational suffix *-ing*

If *-ing* is a derivational suffix (apart from being inflectional for gerunds and present participles), associated V-*ing* nominals are directly derived from verbs. For instance, in *The building of the bridge will take approximately three years*, *building* is derived from the verb *build*.

(1)

- a. Brown's deft painting of the mountain was a delight to watch.
- b. The eating of biscuits is only tolerated during the break.
- c. He enjoys the learning of Chinese.
- d. He was accused of dangerous driving.

The suffix *-ing* attaches to verbs and derives associated V-*ing* nominals. Note that the derivational suffix *-ing* also attaches to nouns and derives new nominals, e.g. *bedding*, *carding*, *walling*, *sheeting*, *sugaring*, *silvering*, *planking*, *towelling*. Those examples are decidedly denominal. It is argued that because of verb-to-noun

conversion, some nouns that take the suffix *-ing* can also be analysed as verbs converted from nouns, such as *trapping*, *housing*, *roofing*, *stabling*, *tailing*. However, *trap*, as a converted verb, appears chiefly in past participle form, moreover, no gerund *trapping* is recorded, and therefore the nominal *trapping* is not derived from a verb; *roofing* is first found in 1440, whereas the verb *roof* is first attested in 1475; *tailing* ‘tail-rope’ is found in 1495, whereas no verb is found before 1663; *stabling* ‘stable buildings collectively’ has no connection with the verb. Thus, those nouns with an *-ing* ending should be analysed as nouns that derived from nouns rather than that derived from verbs (Marchand 1969: 303). There are also deadjectival nouns which name fruit varieties, such as *greening*, *sweeting*, *wilding* (Marchand 1969: 305; Pullum & Zwicky 1998: 253)

However, if the suffix *-ing* can attach to the category of verbs, nouns and adjectives and then derives into nouns, the unitary base hypothesis (Aronoff 1976) is violated. The unitary base hypothesis states that a word-formation rule can take only bases as input that share syntactic category information. Plag (2004) challenges this generative position. He argues that the word-class specification of the input does not play a crucial role, or even no role at all, in derivational morphology; and he proposes that heads firmly determine category status while non-heads can have variable categories.

Following Plag (2004), we can treat *-ing* as a noun-forming derivational suffix. The noun-forming suffix *-ing* can attach to verbs, deriving associated *V-ing* nominals; the denominal and deadjectival *-ing* nouns are treated as occasional violations of the unitary base hypothesis.

In this analysis there is another derivational suffix *-ing* that attaches to verbs and derives prototypical *V-ing* adjectives, e.g. *interesting*, *boring*, *tiring*, *charming*.

5.2.2. The derivational suffix *-ed*

While a derivational analysis is plausible for associated *V-ing* nominals and prototypical *V-ing* adjectives, this analysis is problematic for prototypical adjectives that are in the form of past participles. If *-ed* is a derivational suffix (apart from being inflectional for participles and past tense form of verbs), it attaches to

verbs and derived prototypical V-*ed* adjectives. For instance, in *The children were very tired*, the adjective *tired* is derived from the verb *tire*.

(2)

- a. He looks very disappointed.
- b. I am very excited.
- c. a very confused student
- d. You look worried.
- e. I felt encouraged.
- f. He looked exhausted.

However, there is a fundamental problem in this derivational analysis. Some past participles are not in the form of V-*ed*, so the corresponding prototypical adjectives do not have the suffix -*ed*. For example, in *She is very drunk*, *His computer seems broken*, *The boy felt very hurt*, *Mary got pretty lost*, the deverbal adjectives are not derived via -*ed* suffixation. The adjective *drunk* is derived from the verb *drink* by vocalic ablaut. The adjective *broken* is derived from the verb *break* by vocalic ablaut and an -*en* suffixation. The adjective *hurt* is identical to the bare verb form *hurt*. The adjective *lost* is suppletion. These are prototypical adjectives that are identical in form to past participles, but the derivational -*ed* suffixation fails to explain their morphology.

Another argument against the analysis of -*ed* derivational suffixation is the existence of prototypical adjectives formed from prepositional verbs, e.g. *John is the most talked about player in the game*, in which the adjective is not *talked*, but *talked about*. However, if the adjective is derived from the prepositional verb *talk about* via -*ed* suffixation, the adjective should be in the form of **talk-abouted*.

Some adjectives with the suffix -*ed* are not derived from verbs. The suffix -*ed* can attach to nouns, and the denominal derivatives can be possessive adjectives with the basic meaning ‘provided with -’, such as *bearded*, *redheaded*, *hearted*, *gifted*, *talented*, *privileged*, *prejudiced*, *principled*, *feathered*, *featured*. Another group of denominal adjectives ending in -*ed* has the meaning ‘having the shape or character of the noun’, such as *forked*, *knobbed*, *peaked*. We can also derive adjectives from compounds and phrases via -*ed* suffixation, e.g. *hunchbacked*, *pale-faced*, *knock-kneed*, *five-fingered*, *left-handed*, *narrow-minded*, *short-sighted*, *eagle-eyed*

(Marchand 1969: 201, 264-267). Therefore, the adjective-forming suffix *-ed* can attach to the bases of the different syntacticosemantic specification, which violates the unitary base hypothesis (Aronoff 1976).

The suffix *-ed* is very similar to *-able*. Two kinds of suffix *-able* have been distinguished (Plag 2004): deverbal Verb-*able* ‘capable of being Verb-ed’ (e.g. *readable, drinkable, showable, changeable, walkable*) and denominal Noun-*able* ‘characterised by Noun’ (e.g. *fashionable, knowledgeable, reasonable, valuable, pleasurable*). However, there are also denominal Noun-*able* adjectives which semantically conform to the deverbal pattern (e.g. *exceptionable, impressionable, marketable, objectionable, remarkable*). One could immunise the unitary base hypothesis by proposing two homophonous affixes and aim for an output-oriented basis (Plag 2004). That is to say, there is one *-able* suffix, always adjective-forming.

Here we can just treat *-ed* as an adjective-forming derivational suffix, which forms part of a broader observation, whereby heads firmly determine category status while non-heads can have variable categories. As the discussion of the noun-forming derivational suffix *-ing* in section 5.2.1, the suffix *-ed* is adjective-forming. The suffix *-ed* attaches to verbs and derives adjectives; the N-*ed* adjectives can be treated as occasional violations of the unitary base hypothesis.

5.2.3. Restrictions on deverbal adjectives

Comparing associated V-*ing* nominals and prototypical V-*ing* and V-*ed* adjectives, the adjectivalisation is less productive than the nominalisation. Almost all verbs³⁶ have an associated V-*ing* nominal form, with the meaning ‘the action of the verb’. For instance, *the building of the bridge* means the action or the event that someone builds the bridge. *The jumping was excellent*, means the jump action was excellent. However, not every verb has a V-*ing* form which can be a prototypical adjective, e.g. *building, jumping*; not every verb has a V-*ed* form which can be a prototypical adjective, e.g. *jumped, walked*.

³⁶ Non-agentive Psych-verbs do not have an associated V-*ing* nominal form, which is discussed in chapter 3.

Brekke (1988) attempts to define the set of verbs giving rise to *V-ing* adjectives³⁷, and suggests the Experiencer Constraint: only verbs with an internal Experiencer θ -role can derive into *V-ing* adjectives. Brekke's generalisation draws a clear distinction between the *V-ing* forms of object Experiencer verbs (e.g. *amazing, interesting, boring, exciting*), which can consistently pass the test for being a prototypical adjective, and the *V-ing* forms of verbs denoting eventualities whose objects do not involve mental states (e.g. *building, walking, running, sleeping*), which consistently fail to be the prototypical adjectives. Here is a list of *V-ing* adjectives which are derived from object Experiencer verbs via *-ing* suffixation, and they are emotive *V-ing* adjectives:

(3)

amazing, amusing, annoying, astonishing, baffling, boring, charming, confusing, convincing, daring, daunting, disappointing, disgusting, embarrassing, encouraging, exhausting, exciting, fascinating, frustrating, frightening, humiliating, inspiring, interesting, irritating, perplexing, surprising, tempting, tiring, vexing, worrying

However, there are also prototypical *V-ing* adjectives which are not derived from object Experiencer verbs. Brekke classifies the additional verbs into three major subdivisions: 1) "disposition" verbs, e.g. *a very condescending smile, a very understanding parent, a very loving mother*; 2) "manner" verbs, e.g. *a very fleeting impression, a very fitting tribute, a very lasting relation*; 3) "impact" verbs, e.g. *a very sparkling conversation, a very glittering performance*.

Note that for an "impact" verb to derive into a prototypical *V-ing* adjective, the nouns modified by the adjectives should have a 'psychological denotation'. According to Brekke, these verbs, when forming the prototypical *V-ing* adjectives, are under a metaphorical reading. They are motion verbs but also have a metaphorical interpretation, and the derived prototypical *V-ing* adjectives only have the metaphorical interpretation.

(4)

- a. His story/*leg is very moving.
- b. Russian history/*armies became very occupying.

³⁷ By which Brekke means prototypical adjectives that are in the form of *V-ing*.

- c. He brought back a very stirring report/*spoon.
- d. This is a very arresting thought/*officer.
- e. a very sparkling conversation/*wine
- f. a very glittering performance/*lamp

There are also certain prototypical *V-ing* adjectives which are non-emotive. They are derived from the verbs with a semantic shift, i.e. the prototypical *V-ing* adjectives do not have a meaning that is directly derivative from the verb.

(5)

a dashing young pilot, a very inviting prospect, a very taking style, a very fiddling excuse, a very fetching look, a very demanding job, a very promising future, a very telling argument

There are some emotion object Experiencer verbs whose *V-ing* form is not a prototypical adjective. The reason for the non-existence of such adjectives may be the blocking effect (Aronoff 1976). Other deverbal adjectives which have a similar meaning block the formation of prototypical *V-ing* adjectives.

(6)

- a. bothersome – *bothering
- b. delightful – *delighting
- c. impressive – *impressing
- d. angry – *angering
- e. peevish – *peeving
- f. repellent – *repelling
- g. outrageous – *outraging

Object Experiencer verbs can be derived into prototypical *V-ing* adjectives, as well as the corresponding prototypical *V-ed* adjectives.

(7)

amazed, amused, annoyed, astonished, baffled, bored, confused, convinced, disappointed, disgusted, embarrassed, encouraged, exhausted, excited, fascinated, frustrated, frightened, inspired, interested, irritated, perplexed, surprised, tempted, tired, worried

Prototypical *V-ed* adjectives have the same form as the corresponding participles. Whether a *V-ed* form is a past participle or the corresponding prototypical adjective can be ambiguous. The status of a *V-ed* form can be diagnosed by whether it has adjectival semantics or has verbal semantics. For instance, *V-ed* in *The house was evacuated* is ambiguous. The first reading is ‘The house was in the state of being evacuated, empty, unpopulated’, and *evacuated* is a prototypical adjective. The prototypical adjective status can be tested by the predication with *seem*, because *seem* does not select participles as the predicative complement, e.g. *The house seemed evacuated*. The second reading is ‘Someone evacuated the house (which perhaps was re-populated since)’, and *evacuated* is a past participle. The sentence expresses the event denoted by that participle in the passive voice. Here are more examples illustrating the ambiguity of *V-ed* being prototypical adjectives or past participles.

(8)

- a. The child was spoiled.
 Adjective – The child is very spoiled.
 Participle – The child has been spoiled by the grandparents.
- b. The door was closed.
 Adjective – The door seemed closed.
 Participle – The door was closed by the strong wind.
- c. The chicken was cooked.
 Adjective – The chicken seems cooked.
 Participle – The chicken was cooked by his grandmother.

The negation prefix *un-* can negate adjectives but not verbs or participles. There are *V-ing* forms that can undergo negation *un-* prefixation, and the negated forms are prototypical adjectives, e.g. *unassuming*, *unbending*, *unending*, *unflinching*, *unrelenting*, *untiring* (*untiring* is not the opposite of the prototypical adjective *tiring*). However, the unprefixated part is not a prototypical adjective but a present participle, e.g. *assuming*, *bending*, *ending*, *flinching*, *relenting*, as we cannot have **He is a very bending*, **a very relenting girl*, etc. If such *V-ing* is a present participle, but not an adjective, the morphology of the negated adjective *un-V-ing* cannot be analysed as derivational. Thus, it is not the case that adjectives are derived from the verbs via *-ing* suffixation and then take the negation prefix *un-*. A better analysis for their

morphology might be that the negation prefix is attached to the participle, and the negated participle is converted into an adjective. This analysis would also provide an explanation for prefixed past participles such as *unanswered*, *unprepared*, *untouched*. The negation prefix *un-* is attached to a past participle, and then the prefixed past participle is converted into an adjective. The unprefix part is not a prototypical adjective but a past participle.³⁸ Note that the unprefix part of the adjective might not be derived via *-ed* suffixation, but it is a past participle that is irregularly inflected from the verb, e.g. *untaught*, *unseen*, *unfed*, *unknown*, *unsent*.

The derivation analysis cannot explain the formation of adjectives that are identical in form to past participles which are not suffixed with *-ed*. In order to explain the morphology of adjectives that are in the form of irregular past participles, a new analysis must be introduced.

5.3. Conversion from inflected forms of verbs

An alternative morphological analysis for associated *V-ing* nominals and prototypical adjectives that are identical in form to participles is the conversion from the corresponding gerunds and participles. Gerunds and participles are analysed as inflected forms of verbs in traditional grammar (e.g. Quirk. et al. 1985), as well as in Huddleston & Pullum (2002). Thus, the morphology of the nominals and the adjectives is an inflectional process followed by zero-derivation. Associated *V-ing* nominals are converted from the corresponding gerunds, which are analysed as inflected forms of verbs. The adjectives are converted from the corresponding participles, which are analysed as inflected forms of verbs.

5.3.1. Advantages of the conversion analysis

If the morphology of associated *V-ing* nominals and prototypical adjectives that have the same form as participles is the conversion from the corresponding gerunds and

³⁸ However, this phenomenon could be among the other exceptions of negated adjectives who have no positive counterparts, or whose positive counterparts are archaic, e.g. *uncouth*, *unkempt*, *untoward*, *unruly*.

participles, which are inflected forms of verbs, the morphology of prototypical adjectives that are in the form of irregular past participles has an explanation.

The derivation analysis fails to explain the morphology of prototypical adjectives that are identical in form to past participles but not in the form of *V-ed*. However, with this inflection-plus-conversion analysis, the prototypical adjectives such as *broken*, *hurt*, *lost* in *My computer seems broken*, *Peter felt hurt*, *She got lost*, can be explained. They are converted from the corresponding past participles, which are not regularly inflected from the verbs. Note that one irregular example still cannot be perfectly explained, which is the prototypical adjective *drunk* in *The boy was very drunk*. *Drunk* is also a past participle, as in *The wine was drunk by the boy*. However, the meaning of the prototypical adjective *drunk* in *The boy was drunk* is not transparent from the embedded verb. In contrast, the meaning of other adjectives that are in the form of past participles, such as *bored*, *broken*, *excited*, etc., however, is transparent from the embedded verb, e.g. *The boy was very bored* – *Someone/something bored the boy*, *My computer seems broken* – *Someone/something broke my computer*.

The conversion analysis can also explain the existence of the prototypical adjectives that are in the form of passivised verb-preposition constructions. The adjective is not derived from a verb plus a preposition but instead converted from the passivised verb-preposition construction. Note that if we cannot passivise the verb-preposition combination, then that combination cannot be formed into adjectives.

(9)

- a. The bed looked slept in.
- b. They shared an unspoken-of passion for chocolate.
- c. Bastian is the most talked about player in the game.
- d. After the tornado, the fields had a very marched through look.

(10)

- a. *An infection was died from. (The patient died from an infection.)
*An infection seemed died from.
- b. *No reason was left for. (They left for no reason.)
*No reason looked left for.
- c. *The whole afternoon was slept for. (I slept for the whole afternoon.)

*The afternoon seemed slept for.

5.3.2. Disadvantages of the conversion analysis

Although conversion from gerunds and participles has the advantage of explaining the morphology of prototypical adjectives which are identical in form to the irregularly inflected past participles, there exists a fundamental problem. Regular inflection cannot occur inside lexemes (Cetnarowska 2001; Kiparsky 1982; Rainer 1996).

Irregularly inflected forms are occasionally found inside derivatives while regularly inflected forms cannot occur there. Compare *to better*, *to further*, *to lessen*, *to worsen*, *betterment*, *furtherance* and **to nicer*, **nicerment*, **richerance*, **eventsful*, **peersless*, **brotherhood*. Irregular inflection can occur inside compounds such as *lice-repellent*, *mice-infested*, whereas regular inflection cannot, as we can see that **watches-maker*, **rats-infested*, **moths killer*, **claws marks* are ill-formed, despite the fact that the embedded plural forms may be semantically warranted. However, this generalisation is not uncontroversial. One type of exception is that the first constituent of compounds is a regularly inflected plural form of a noun, e.g. *profits tax*, *publications catalogue*, *antiques shop*, *vehicles industry*, *documents analysis*, *paintings collection*. Note that there is a restriction on this type of compounds: the regular plural form is not allowed to appear inside compounds unless it carries the feature (+plural/+generic), which is motivated by the features (+count/–mass), (+text/–object), or (+N/–Adj) (Al-Shehri 2014: 290).³⁹ Another set of exceptions involves phrases embedded in compounds, e.g. *hands-off policy*, *open-door policy*, *dental care insurance*, *severe weather warning*. The explanation for this exception is that some limited recursion from phrase-level syntax back into morphology must be taken into account (Giegerich 2015: 106-109; Kiparsky 1982: 10).

The exceptions to this generalisation are all compounds. It is, therefore, a tenable generalisation that regular inflection cannot precede derivation. Following this generalisation, the past participles which are irregularly inflected, such as *broken*, *hurt*, *lost*, are available to derivational processes, and thus can be converted into

³⁹ For the detailed analysis of regular plural inflection inside English compounds, see Al-Shehri (2014).

adjectives. However, if we analyse gerunds and participles as inflected forms of verbs, gerunds, present participles and the past participles with the suffix *-ed* as regularly inflected, then they are not available for conversion, because conversion, which is a derivational process, cannot operate on regularly inflected forms. Therefore, gerunds, present participles, *V-ed* past participles cannot be converted into the corresponding associated *V-ing* nominals, prototypical *V-ing* and *V-ed* adjectives. Thus this morphological analysis cannot apply to the majority of cases.

5.4. Individual diachronic lexicalisation

Two possible analyses haven been discussed, neither of which accurately explains the morphology of prototypical adjectives that are identical in form to participles, under the analysis of gerunds and participles as being inflectional. The derivational suffixes *-ing*, *-ed* attaching to the verb base cannot accommodate the prototypical adjectives which are in the form of irregular past participles. The problem of conversion from participles and gerunds is that conversion, which is a derivational process, cannot operate on regular inflection; whereas most participles and all gerunds are regularly inflected. A third analysis is that associated *V-ing* nominals, prototypical *V-ing* adjectives, prototypical *V-ed* adjectives (and those which are in irregular forms) are historically lexicalised into nouns or adjectives. This individual lexicalisation analysis may work for certain adjectives that are identical to participles. However, individual lexicalisation cannot explain associated *V-ing* nominals, because associated *V-ing* nominalisation is regular, productive and semantically transparent.

5.4.1. Adjectivalisation

The formation of prototypical adjectives that are identical in form to participles is not highly productive, because not all participles have a corresponding prototypical adjective. However, individual lexicalisation is not an ideal explanation. The reasons are, firstly the fact that the adjectivalisation of this type of adjectives is more productive than individual lexicalisation; secondly that they all follow an identical pattern in most cases – *V-ing* or *V-ed*; and thirdly that the meaning of the adjectives

is transparent and predictable. Individual lexicalisation may explain some isolated examples whose meaning is non-transparent, for example, the adjective *drunk* as in *a drunk man*. Even though the prototypical adjective *drunk* is identical to the past participle, as in *The beer was drunk by the man*, *The man has drunk the beer*; its meaning does not have a direct connection to the embedded verb *drink* or the participle *drunk*. The prototypical adjective *drunk* means ‘affected by alcohol to the extent of losing control of one’s behaviour’. Such deverbal adjectives may be individually lexicalised in the history of English.

Another example is *bearded*, derived from the noun *beard*. *Beard* can also be a verb converted from the noun *beard*, which means ‘to furnish with a beard’ or ‘to confront and oppose with boldness, resolution, and often effrontery’. However, the adjective *bearded* is not derived from the verb, because, for example, *a bearded man* is not a man who has been bearded, but a man who has a beard. Therefore, it is possible to explain *bearded* as an individually lexicalised adjective, which is not derived from a verb but a noun. However, individual diachronic lexicalisation is not an ideal analysis for such denominal adjectives with the suffix *-ed*, including those which are mentioned in section 5.2.2: *feathered*, *footed*, *ivied*, *hearted*, *talented*, *privileged*, *gifted*, *hunchbacked*, *short-sighted*. Because these adjectives are productive, all in the identical pattern N-*ed*, and the meaning is transparent and predictable, either ‘provided with N’ or ‘having the shape or character of the N’.

Individual diachronic lexicalisation can explain adjectives with *-ing* ending whose base form is frozen, e.g. *cunning* and *gruelling*. Frozen entries are lexical entries that exist in the lexicon, and can, therefore, serve as input for lexical operations, but are not available for insertion to syntactic derivations (Horvath & Silnoni 2008).

(11)

- a. *cunning* – *to *cun*
The prisoner seems *cunning*.
*The prisoner is *cunning* proudly.
- b. *gruelling* – *to *gruel*
The schedule seems *gruelling*.
*The work was *gruelling* us.

Cunning and *gruelling* in (11) are adjectives exclusively. Although we can predict the verb forms and the meanings, they are frozen and never appear as in the example sentences. The parallel examples with present participles are ungrammatical since any existing present participle has a corresponding verb. Therefore, these adjectives cannot be derived from the verbs nor converted from the corresponding participles. Individual lexicalisation is the most plausible analysis for such adjectives with a frozen entry.

Some prepositions and conjunctions are in the form of participles, but the verbal semantics no longer exist. They can also be analysed as the result of individual lexicalisation, e.g. *during*, *according (to)*, *concerning*, *considering*, *granted*, *given*. Similarly, there are degree adverbs in the form of present participles like *piping* as in *piping hot*, which could be lexicalised in history.

5.4.2. V-*ing* nominalisation

The morphology of associated V-*ing* nominals is regular and productive. The suffix -*ing* attaches to verbs and derives associated V-*ing* nominals. The meaning of associated V-*ing* nominals is transparent and predictable. They denote the event associated with the embedded verb, as their gerund counterparts do, e.g. the associated V-*ing* nominal in *The building of the bridge took three years* denotes the event ‘build the bridge’. Thus, associated V-*ing* nominalisation is not individual lexicalisation.

Associated V-*ing* nominals are complex event nouns. However, not all nouns that are in the form of V-*ing* are associated V-*ing* nominals. There are V-*ing* nouns which are individually lexicalised. For example, in *a tall building*, *building* means ‘a structure with a roof and walls standing more or less permanently in one place’. The meaning of the lexical noun *building* is not directly derivative from the verb *build*. There is a semantic deviation of the meaning; here, it denotes the entity that is created by the event described by the verb.

The lexical V-*ing* nouns have semantically different output from the verbs. The meaning of the nouns is related to the event described by the embedded verbs (Fabb

1984: 214). Compare the gerunds (a), the associated *V-ing* nominals (b) and lexicalised *V-ing* nouns (c) in the following sentences.

(12)

- a. John's deftly painting his daughter is a delight to watch.
- b. John's deft painting of his daughter is a delight to watch.
- c. John has many beautiful paintings.

(13)

- a. Gathering at the playground is what we need to do when we hear the alarm.
- b. The gathering of his toys took three days.
- c. Our next annual gathering takes place in London on 5 August.

(14)

- a. What is the point of saving so much money?
- b. The saving of money has not been easy.
- c. He put all his savings into the stock market.

(15)

- a. Finding my glasses is so hard because I cannot see clearly without them.
- b. The finding of my glasses took longer than I expected.
- c. The experiment produced some interesting findings.

Such individually lexicalised nouns with the *-ing* ending are listed in the lexicon and have a meaning that is not directly derivative from the embedded verb: *oil paintings, personal belongings, a long meeting, dental fillings, research funding, a feeling of joy, the annual earnings, a liking for gin and tonic*. The lexical *V-ing* nouns denote entities. Because nouns typically denote entities, rather than events, a *V-ing* form as a single word, such as *building, painting, meeting*, etc. is a lexical *V-ing* noun by default, rather than the associated *V-ing* nominals of the same form.

Individual lexicalisation can also explain the morphology of some *-ing* nominals whose base are nouns, such as *bedding, walling, carding, sugaring, skirting, silvering, mouthing, nosing, siding* (examples from Marchand 1969: 303-306), and that of *-ing* nominals whose base form is frozen, such as *ceiling, and wedding*.

5.5. Conclusions

5.5.1. The morphology of V-*ing* nouns

This chapter has discussed three morphological analyses for associated V-*ing* nominals, assuming that gerunds are inflected forms of verbs: first, a derivational analysis, where associated V-*ing* nominals are nouns derived from the verbs via *-ing* suffixation; second, an inflection-plus-conversion analysis, where associated V-*ing* nominals are converted from the corresponding gerunds; and third, individual lexicalisation, where associated V-*ing* nominals are individually lexicalised nouns.

The associated V-*ing* nominalisation is productive, all of the nominals follow the same pattern V-*ing*, and the meaning of the nominals is transparent and predictable. Therefore the word-formation of associated V-*ing* nominals cannot be individual lexicalisation.

Under the assumption that gerunds are inflected forms of verbs, the conversion analysis would be wrong. However, as discussed in chapter 3, gerunds belong to the category of nouns and are derived from verbs. Therefore, the conversion analysis is plausible. Because of the appeal to Occam's razor, we choose the derivational analysis. The derivational suffix *-ing* attaches to verbs and derives into nouns. Gerunds and associated V-*ing* nominals are both nouns productively derived from verbs. Their meaning is predictable and transparent, describing events associated with the embedded verbs. They differ in the internal structure of phrases headed by them. Unlike phrases headed by associated V-*ing* nominals, which are ordinary NPs, phrases headed by gerunds have the internal structure of VPs.

Apart from gerunds and associated V-*ing* nominals, the suffix *-ing* also marks “factitive” deverbal nouns, which denote entities or abstract results that are related to the embedded verbs, such as *a tall building, calling* (“profession”), *a long meeting, his feelings, dental fillings, a new finding*, etc. (Marchand 1969: § 4.48). These are clearly lexical; the categorial representation is lexically contrastive, nouns in contrast to verbs. Deverbal nouns display the properties of lexicality⁴⁰: lexical idiosyncrasy

⁴⁰ Lexical idiosyncrasy: “derivational gaps” – derived forms without bases (e.g. *dereliction*), bases with no derivative of a particular type; semantic idiosyncrasy: “non-compositionality” (e.g. *revolution*, in the sense of “successful uprising”); derivational formations independent of the base verb (e.g. *misgivings*).

and semantic idiosyncrasy, as well as derivational formations independent of the base verb (Anderson 1992: 210).

The lexical deverbal noun (e.g. *the enemy's destruction of the city*) is distinguished from the non-lexical gerunds (*the enemy's destroying the city*). The greater nominality of lexical deverbal nouns is reflected in its failure to take direct object, its capacity for adjectival rather than adverbial modification (compare *the enemy's cruel destruction of the city* and *the enemy's cruelly destroying the city*), its absence from verbal periphrases (*the enemy's having destroyed the city*) and its absence of a preceding argument (*the enemy destroying the city*).

Associated *V-ing* nominals are like lexical deverbal nouns in that phrases headed by them have the internal structure of ordinary NPs. However, unlike lexical deverbal nouns, associated *V-ing* nominals only have an event interpretation, like gerunds (compare **The destroying of the city was widespread* and *The destruction of the city is widespread*), and associated *V-ing* nominals do not permit passive reading without passive morphology (e.g. **The city's destroying by the enemy* and *The city's destruction by the enemy*).

The three types of *V-ing* nominals are distinct from each other, but there is no derivative contrast and no distributional difference. The development of Present-day English involves a minimal increment in the range of categories required by the syntax (Anderson 1992: 213).

In comparison to gerunds, there are restrictions on the formation of associated *V-ing* nominals. They are both in the form of *V-ing* and have the distribution of nouns, phrases headed by them occurring in argument positions and other positions that allow NPs. However, they are distinct from each other because of some essential differences. The differences between them have been discussed and explained in Chapter 3. Unlike phrases headed by associated *V-ing* nominals, phrases headed by gerunds have the internal structure of VPs. Associated *V-ing* nominals are compatible with determiners, adjective modification, and prepositional complements. Gerunds, in contrast, occur with direct objects, adverb modification, passive voice, and perfect aspect.

In consideration of morphological productivity, gerunds apply to all verbs, except modal verbs, whereas associated *V-ing* nominalisation is less productive. A *V-ing*

form does not combine with a state type in the associated *V-ing* nominal construction. Associated *V-ing* nominalisations generally do not appear with stative verbs (Lees, 1966: 66):⁴¹

(16)

- a. *His having of a wand makes him feel special.
His having a wand makes him feel special.
- b. *John's knowing of calculus impressed the interviewers.
John's knowing calculus impressed the interviewers.
- c. *His loving of Mary is obvious.
His loving Mary is obvious.
- d. *Her lacking of a car is inconvenient.
Her lacking a car is inconvenient.
- e. *The liking of robots turns to revulsion.⁴²
Liking robots turns to revulsion.
- f. *My believing of it convinces me to keep going.
My believing it convinces me to keep going.
- g. *The perplexing of him was unavoidable.
Perplexing him was unavoidable.

No process or activity is associated with the state of knowledge or the state of lack, etc. Instead of associated *V-ing* nominals, such meaning is expressed by other forms of derived nominals, e.g. *John's knowledge of calculus*, *her lack of a car*, *my belief of it*, etc. Thus, another explanation is that the use of the associated *V-ing* nominals is blocked, compare *the arrival of the train* and **the arriving of the train*, *the resemblance to her sister* and **the resembling of her sister*.

There is an apparent limitation on the associated *V-ing* nominalisation, which appears in the case of psychological movement verbs. Grimshaw (1990) introduces

⁴¹ Counterexamples can be found (from Oxford English Dictionary), however, the associated *V-ing* nominal of the stative verbs are rarely used.

- d. Knowing also involves a believing of something that is true.
- e. The admiring of richly dress playgoers went on throughout performances.
- f. Pragmatism, perhaps more successfully than other philosophic positions, brings together the being of humans in the world and the knowing of the natural universe.

⁴² There are examples with *the liking for*, e.g. *Mrs. Hudson has a liking for gin and tonic*, *John's liking for Mary is obvious*. However, *liking* here means 'an affection for, fondness', and there is a semantic deviation of the verb. The *V-ing* form is not an associated *V-ing* nominal but a lexical *V-ing* noun. .

the idea of a-structure: a structured representation of prominence relations among arguments. The external argument is the most prominent argument in the a-structure of a predicate. The hypothesis is that the a-structure of the derived noun has a suppressed position where an active verb has an unsuppressed one. If nominalisation suppresses the external argument of a base verb, it follows that only verbs with external arguments will undergo this process. This prediction explains some limitations on nominals, one of which is that non-agentive psychological causatives do not nominalise into complex event nominals. Associated V-*ing* nominals are complex event nominals, which are productively formed by suppression of an external argument. Therefore, associated V-*ing* nominals are not derivable from non-agentive psych verbs⁴³ (Grimshaw 1990: 108-123): *frighten, depress, worry, interest*, etc. Compare the ungrammatical sentence with an associated V-*ing* nominal **Medication's depressing of the patients should be taken into account* and the grammatical variant with a gerund: *Medication's depressing the patients should be taken into account*.

5.5.2. A new proposal for the morphology of participles and adjectives

Analogous to associated V-*ing* nominalisation, prototypical adjectives that are identical in form to participles cannot be explained as the result of individual lexicalisation. The prototypical V-*ing* and V-*ed* adjectives can be analysed as adjectives derived from the verbs via *-ing* and *-ed* suffixation. However, this analysis cannot explain the morphology of prototypical adjectives that are in the form of irregular past participles, because they do not have the suffix *-ed*. All prototypical adjectives that are identical in form to participles have a participle counterpart. Therefore, it seems plausible to consider that the adjectives are converted from the corresponding participles. Under the assumption that participles are inflected forms of verbs, present participles and the V-*ed* past participles are regularly inflected. However, regular inflection cannot precede derivation. Therefore, present participles and the V-*ed* past participles cannot be converted to adjectives.

⁴³ Agentive psych verbs are available for associated V-*ing* nominalisation: e.g. *The entertaining/amusing of the children is my job*.

In order to accommodate all the prototypical adjectives that are identical in form to participles, the adjectivalisation has to be separated into three morphological analyses. Firstly, the derivation analysis explains the morphology of the prototypical V-*ing* and V-*ed* adjectives, in which *-ing* or *-ed* is a derivational suffix, e.g. *interesting*, *boring*, *tired*, *surprised*. Secondly, conversion from the corresponding participles explains the morphology of the prototypical adjectives that are in the form of irregular past participles, e.g. *lost*, *broken*, *hurt*. Lastly, individual lexicalisation explains the isolated adjectives such as *drunk*. However, it is not ideal to have different morphological analyses for the same type of adjectives.

There should be a better analysis that explains the morphology of all such adjectives in the system. At this point, the categorial status of participles needs to be reconsidered. Let us discuss the relationship between participles and adjectives. On the one hand, all participial adjectives have a corresponding participle, either regular (e.g. *interesting*, *boring*, *tired*, *bored*) or irregular (e.g. *lost*, *hurt*, *drunk*, *broken*). On the other hand, participles have the distribution of adjectives, as discussed in chapter 4. Therefore, I propose that participles are adjectives.

If we were to distinguish participles and adjectives as separate categories, as we have done for the morphological analyses in this chapter, there does not seem to be a plausible single morphological explanation for all adjectives that are identical in form to participles to arise in the system. However, analysing participles as adjectives solves this morphological problem, which will be further explained in chapter 6. Besides, the analysis of participles being adjectives is compatible with the morphology of N-*ed* adjectives. We can analyse *-ed* to be an adjective-forming derivational suffix, which attaches to verbs and derives adjectives. The derived adjectives can be participles, which are event-denoting (e.g. *The chicken was cooked by Mary*, *Mary has cooked the chicken*), and prototypical adjectives, which are property-denoting (e.g. *The boy was very tired*, *The chicken seems uncooked*). Noun-*ed* adjectives (e.g. *bearded*, *feathered*, *gifted*), alongside V-*ed* adjectives, can be treated as occasional violations of the unitary base hypothesis, as mentioned above in section 5.2.

The next chapter will discuss the relationship between participles and adjectives in detail. Participles belong to the category of adjectives and are derived from verbs.

For instance, from the verb *charm*, we can derive a participle *charming* (e.g. *The boy is charming the audience*), which is an event-denoting adjective, and a prototypical adjective *charming* (e.g. *The boy is very charming*), which is a property-denoting adjective. Participles being adjectives is also compatible with the cases of individual lexicalisation, such as *drunk*. The verb *drink* derives into the adjective *drunk*. The participle *drunk* denotes an event (e.g. *The wine was drunk by Mary, Mary has drunk the wine*), and the lexicalised prototypical adjective *drunk* denotes a property (e.g. *Mary was drunk by lunchtime*). They are both adjectives, and it is merely the difference between event denotation and property denotation. However, *drinking*, which is also derived from the verb *drink*, can only be a present participle (e.g. *Mary is drinking the wine*), because *drinking* does not have property denotation.

Chapter 6. The categorial status of participles and adjectives

Traditional grammar and Huddleston & Pullum (2002) analyse participles as inflected forms of verbs. However, I have proposed that participles are adjectives in chapters 4 and 5. That is to say, participles are not inflected forms of verbs but are derived from verbs. In this chapter, I will argue in detail why participles belong to the category of adjectives.

6.1. Previous research on participles and prototypical adjectives of the same form

6.1.1. Participles are not adjectives but inflected verb forms

Huddleston & Pullum (2002) follow traditional grammars in analysing participles as inflected forms of verbs and therefore belong to the category of verbs. There are several reasons for this traditional analysis. Firstly, participles follow the inflectional paradigm, and every verb has a present participle form (*V-ing*) and a past participle form (either regular *V-ed* or in various ways irregular such as *drunk*, *brought*, *lost*, *broken*, *sent*). Secondly, participles do not denote properties, as prototypical adjectives do, but denote events, as prototypical verbs do. Moreover, thirdly, there are grammatical differences between participles and prototypical adjectives: prototypical adjectives are compatible with *seem* predication, degree adverb modification, *un-* negation, whereas participles are not; besides, they also differ in complementation, for instance, present participles take a direct object, whereas prototypical adjectives take a prepositional object.

Because of the grammatical differences, Huddleston & Pullum (2002: 78-71, 541-542, 1221, 1427-1447) distinguish participles from the adjectives that are of the same form (e.g. *interesting*, *boring*, *tired*, *drunk*) The differences are regarded as a justification for drawing a distinction between verbs and adjectives with words of this kind (Huddleston 2002b: 79). Similarly, Wasow (1977) shows that English has two sources for passives: some passive participles⁴⁴ are adjectives, derived in the

⁴⁴ The term ‘passive participle’ in Wasow (1977) specifically denotes the past participle in passive voice construction or when the past participle has a passive interpretation. When a past participle follows the predicate verb *have* and the combination expressing the perfect aspect, that past participle

lexicon because they have the distribution of adjectives; while others are inflected verbs because they have verbal properties and exhibit none of the syntactic behaviour characteristics of adjectives.

That is to say, under traditional analysis and the analysis of Huddleston & Pullum (2002) and Wasow (1977), for words of this kind, there is both a participle and a formally identical adjective. For instance, *The story is boring me to tears*, *The story is very boring*, **The story is very boring to tears*; *The wine was drunk by Mary*, *Mary seems drunk*, **The wine seems drunk by Mary*. Related to every such adjective is a participle, but not vice versa: there are participles that do not have a corresponding adjective. So under this view, some participles give rise to adjectives, synchronically or diachronically.

However, if participles were verbs, why is their distribution different from other verb forms but the same as that of adjectives?

As shown in (1), finite verb forms function as the predicate; and in (2), infinitive verb forms occur after modals or *to*.

(1)

- a. We discussed the plan.
- b. He enjoys the dessert.
- c. She played the piano.

(2)

- a. We must discuss the plan.
- b. He might enjoy the dessert.
- c. He asked her to play the piano.

However, as discussed in chapter 4, participles have the distribution of adjectives. Phrases headed by participles, like AdjPs, can function as 1) modifiers of nouns (e.g. *crying baby*, *fallen leaves*), 2) predicative complements (e.g. *The boy is playing the piano*, *The food was eaten*), 3) modifiers of clauses (e.g. *Walking home after work, he found a lost dog*; *Battered by the wind, John almost fell to his knees*).

is not a 'passive participle'. For instance, in *the discussed plan*, *The book was written by Tom*, the participle can be called 'passive participle'; whereas in *fallen leaves*, *The prisoner has escaped*, the participle cannot be called 'passive participle'.

6.1.2. Participles are adjectives

Freidin (1975) analyses the passive predicate as an AdjP – in which case the past participle would be labelled an adjective, as I have proposed. Freidin’s claim of participles being adjectives is supported by their overlap in distribution, which I have mentioned above and discussed in chapter 4.

Additional support comes from cases where there is a clear morphological distinction between adjectives (e.g. *open*, *empty*) and past participles (e.g. *opened*, *emptied*). If the adjective forms and the participle forms could not occur in the same syntactic context, then there would be some justification for assuming a categorial distinction – i.e. labelling one an adjective and the other a verb. However, this is not the case; compare:

- (3)
- a. The door was open at 5:00.
The door was opened by Jack.
 - b. The door open at 5:00 was closed at 6:00.
The door opened by Jack was closed by Paul.
 - c. the empty bottle
the emptied bottle

Thus, there is no syntactic motivation for making the distinction between adjectives and past participles a categorial one.

Freidin’s analysis could be argued against because of the grammatical differences between participles and prototypical adjectives. Past participles do not occur in the constructions where adjectives usually appear, compare *He seems intelligent* and **He seems helped*, *She is very lucky* and **She is very arrested*. Freidin (1975: 398-399) notices that certain adjectives may not occur in these constructions either (e.g. **The lizard was very dead*). Freidin’s explanation is that the combination of those adjectives and *seem* predication or degree adverb modification results in a semantic anomaly. However, he does not analyse what those adjectives are and what kind of semantic anomaly it is. I will, in section 6.3.2, provide a systematic explanation.

Cross-linguistically, there is research on the analysis of participle being adjectives rather than inflected verbs in other languages.

Booij (1996) distinguishes two types of inflection – inherent and contextual inflection. Contextual inflection is the kind of inflection that is dictated by syntax, such as person and number markers on verbs that agree with subjects and objects, agreement markers for adjectives, and structural case markers on nouns. Inherent inflection is the kind of inflection that is not required by the syntactic context, though it may have syntactic relevance. Examples are the number for nouns, the comparative and superlative degree of adjectives, and tense and aspect for verbs, infinitives and participles. Inherent inflection is more similar to derivation, and it may feed word-formation (Booij 1996: 2-3). Booij illustrates with Dutch data (1996: 4-5) that Dutch participles are similar to derivation in that they may have idiosyncratic meaning and sometimes lack a base, that is, they are also strongly subject to lexicalisation. Participles in Dutch have both verbal and adjectival properties: they have the same types of dependent elements as verbs, but their distribution is that of adjectives.

The Dutch data make it clear that participles are not prototypically inflectional since the traditional assumption is that inflection does not change the syntactic category of its input words.

Following Stephany (1982), Bybee (1985), Corbett (1987), and especially Plank (1994), Haspelmath (1996) demonstrates that there is a continuum from clear inflection to clear derivation and that the inflection/derivation distinction is not absolute but allows for gradience and fuzzy boundaries. Some linguists (e.g. Dressler (1989), Luraghi (1994)) have discussed inflection and derivation regarding prototypicality, pointing out that some types of affixes are prototypically inflectional, whereas others are prototypically derivational. Haspelmath (1996: 49-50) analyses the German participle *singend* ‘singing’ and finds good reasons to reject the view that the participle is a verb. Morphologically, German participles behave just like adjectives, sharing the same two types of inflection patterns. When functioning as attributive modifiers of nouns, participles, like prototypical adjectives, take inflectional endings according to case and number. Syntactically, German participles are always preposed, like other adjectives.

Participles in German have the same syntax and morphology as adjectives; and adjectives are not inflectional verb forms. Therefore, it is plausible to analyse that in

German, participles belong to the category of adjectives, but not inflected forms of verbs.

6.1.3. My analysis of participles as being adjectives

My analysis is in agreement with Freidin (1975) – participles belong to the category of adjectives. I will show that the grammatical differences between participles and adjectives that Huddleston & Pullum (2002) consider the justification for a categorial distinction are due to different semantics. The constructions where participles do not occur – in contrast to prototypical adjectives – are not available for adjectives in general, but a specific type of adjectives. Precisely, only adjectives that denote properties exhibit the behaviour that participles lack. Participles denote events, and therefore cannot occur in constructions that choose property-denoting adjectives. Besides, phrases headed by participles having the internal structure of VPs does not mean that participles are verbs. Participles belong to the category of adjectives and adjectives are theta-markers; additionally, participles are derived from verbs and denote events, i.e. participles have the argument structure representation of the embedded verb. Therefore, phrases headed by participles have the internal structure of VPs. The differences between participles and prototypical adjectives are not reliant on categorial status, and therefore do not invalidate my analysis of participles being adjectives.

Both participles and the prototypical adjectives that are identical in form belong to the category of adjectives. The prototypical adjectives, either regular (e.g. *interesting, boring, tired, bored*) or irregular (e.g. *lost, hurt, drunk, broken*) have property-denoting semantics. The participles are adjectives that have event-denoting semantics.

Meanwhile, we should not overlook an already-known subclass of adjectives, which is not property-denoting – associative adjectives. Associative adjectives denote entities, e.g. *dental decay, vernal equinox, criminal law*. Associative adjectives have striking similarity with participles. I will show that the differences between participles and prototypical adjectives closely mirror those between associative adjectives and prototypical adjectives. This then supports my argument that these

differences come from semantics, and do not conflict with an analysis of participles as belonging to the category of adjectives.

6.2. The relationship between participles and adjectives

6.2.1. Previous research on prototypical *V-ing* adjectives

Brekke (1988) attempts to define the set of verbs which regularly form true *V-ing* adjectives by introducing the Experiencer Constraint: only verbs with an object Experiencer argument can derive *V-ing* adjectives. Brekke's generalisation shows that *V-ing* forms of object Experiencer verbs (*amazing, interesting, boring, exciting*) consistently pass the test for being a prototypical adjective⁴⁵, in that they are emotive *V-ing* adjectives. In contrast, *V-ing* forms of verbs that denote physical processes (*crying, walking, running, sleeping*) consistently fail to be prototypical adjectives. A nice illustration is also provided by verbs that allow both a physical process reading and an emotion reading, where only the *V-ing* form of the latter can be a prototypical adjective (Brekke 1988: 170-172). Compare:

- (4)
- a. a very arresting thought/*police officer
 - b. His story/*leg is very moving.
 - c. She brought back a very stirring report/*spoon.

However, Brekke finds that there are also *V-ing* adjectives which are not derived from object Experiencer verbs, in contrast to his prediction, and chooses the term psychodynamic for these verbs. He classifies them into three major subdivisions: 1) "disposition" verbs, e.g. *a very understanding parent, a very shy and retiring woman, She is very forgiving*; 2) "manner" verbs, e.g. *a very fleeting impression, a very telling argument, a very lasting relation*; 3) "impact" verbs, e.g. *a very sparkling conversation, a very glittering performance* (Brekke 1988: 175- 177). They are not emotive *V-ing* adjectives.

⁴⁵ Some of the emotion object-Experiencer verbs do not derive *V-ing* adjectives. The reason for the non-existence of such *V-ing* adjectives may be the blocking effect (Aronoff 1976). There are different adjectives with a similar meaning, which block the formation of *V-ing* adjectives, e.g. *bothersome* – **bothering*, *delightful* – **delighting*, *impressive* – **impressing*, *angry* – **angering*, *peevish* – **peeving*, *repellent* – **repelling*.

According to Brekke, the “disposition” verbs require an animate subject (in most cases human) and are descriptive of the psychological character of that (human)being, as we can see from the given examples above.

In order for “manner” verbs to derive into *V-ing* adjectives, the nouns modified by the adjectives should have a psychological denotation. The meaning of some *V-ing* adjectives is not straightforward from the embedded verb.

(5)

- a. a very fitting tribute/*shoe
- b. Your argument/*sister is very telling.

In order to derive “impact” verbs into *V-ing* adjectives, those “impact” verbs must be under a metaphorical reading, and the *V-ing* adjectives have only the metaphorical interpretation.

(6)

- a. a very sparkling conversation/*wine
- b. The performance/*lamp is very glittering.

From Brekke’s analysis, we can see that the semantics of the verb alone is not decisive in making a *V-ing* form an adjective. Whether a *V-ing* form is a prototypical adjective or not depends on its own interpretation. Therefore, we should study the semantics of the *V-ing* form rather than the semantics of the embedded verb.

I will, in this section, reform Brekke’s generalisation on the verbs that form true *V-ing* adjectives. There is a difference between the semantics of participles and the semantics of prototypical adjectives. Prototypical adjectives have property-denoting semantics, whereas participles have event-denoting semantics. The difference between present participles and prototypical *V-ing* adjectives are purely due to their semantic difference, i.e. the differences do not distinguish separate categories. Both participles and prototypical adjectives belong to the category of adjectives. Participles are event-denoting adjectives (e.g. *The boy is charming the audience*), whereas prototypical adjectives are property-denoting (e.g. *The boy is very charming*). Certain participles, such as *charming*, can undergo a semantic shift and

gain property-denoting semantics, therefore becoming a prototypical adjective. The shift to prototypicality will be further discussed in section 6.3.2.2.

6.2.2. Participles belong to the category of adjectives

In agreement with Freidin's (1975) analysis of the passive predicate as being an AdjP, I have proposed that participles belong to the category of adjectives. The differences between participles and prototypical adjectives are purely due to their difference in semantics, which is not reliant on categorial status. From Brekke's (1988) generalisation on verbs that regularly form true *V-ing* adjectives, I reform the generalisation by distinguishing the semantics of prototypical adjectives and the semantics of participles. Prototypical adjectives have property-denoting semantics, whereas participles are adjectives that have event-denoting semantics.

Participles have the distribution of adjectives because phrases headed by participles have the same syntactic functions as AdjPs. Let us compare phrases headed by participles and phrases headed by prototypical adjectives.

(7) Attributive modifiers of nouns

- a. a crying baby, the discussed plan, fallen leaves
- b. a cute baby, the good plan, fresh leaves

(8) Predicative complements

- a. The baby is crying. The plan was discussed. The leaves have fallen.
- b. The baby is cute. The plan is good. The leaves are fresh.

(9) Postpositive modifiers of nouns

- a. someone sitting next to him, the glass filled with water
- b. someone happy, the boy desirous of fame

(10) Modifiers of clauses

- a. Walking home after work, Peter almost fell asleep.
- b. Furious about the insults, he stormed out of the room.

There is no distributional difference between participles and prototypical adjectives. There are indeed specific grammatical differences between participles and

prototypical adjectives.⁴⁶ I will explain these differences between them without appealing to a difference in categorial status.

Furthermore, from a morphological point of view, there are negated adjectives with the prefix *un-* whose unprefixated counterparts are not prototypical adjectives but participles, e.g. *unassuming, unending, unflinching, unrelenting, unsmiling, untaught, unseen, undiscussed*. The unprefixated part, such as *assuming, smiling, discussed*, etc., are not prototypical adjectives since we cannot have **a very assuming man, *She seems smiling, *a very discussed topic*. The negation prefix *un-*, which is not a category-changing prefix, only attaches to adjectives, and we can form negated adjectives from participles via *un-* prefixation. That is to say, participles belong to the category of adjectives.

Righthand-headedness in compounding also provides a similar argument. Word-formation exhibits a binary structure, consisting of a determinant (modifier) and a determinatum (modified). This kind of structure is called ‘syntagma’ (Kastovsky 1999; Marchand 1969). Compounding is a way of word-formation in which words form grammatical syntagmas, consisting of a determinant and a determinatum. Marchand (1974: 293) argues that “the determinatum represents the whole syntagma in that it can stand for it in all positions while the determinant cannot”. Moreover, it is characteristic of English that the determinant precedes the determinatum. For example, in compound adjectives like *colour-blind, air-tight, icy-cold, white-hot*, the category of the compound is identical with the righthand constituent.

(11)

- a. heart-breaking
breath-taking
earth-shaking
easy-going
good-looking
wide-spreading
- b. handwritten
homemade
sundried

⁴⁶ See chapter 4 about how participles and adjectives that are identical in form to participles are distinguished from each other.

highborn
readymade
well-spoken

The examples in (11) are compound adjectives in which the right-hand constituent is a participle. Because of the right-hand headedness of compounding, the category of the right-hand constituent should be identical with that of the compound. But the generalisation holds only if participles are adjectives.

6.2.3. Contrasting participles with prototypical adjectives

Participles belong to the category of adjectives; however, participles are distinct from prototypical adjectives. This section will show that participles are different from prototypical adjectives in the same way that other non-prototypical adjectives are different from prototypical ones. The differences are not distributional, i.e. they do not distinguish categories. Therefore, these differences do not invalidate the argument that participles belong to the category of adjectives.

6.2.3.1. Features exclusive to prototypical adjectives

Prototypical adjectives have several features that are not shared by participles. In contrast to participles, prototypical adjectives engage: 1) degree adverbs, such as *very*, *too*; 2) comparative and superlative forms; 3) negation prefix *un-*; 4) complementation with verbs like *seem*, *look*, *sound*, *feel*; 5) nominalisation via the suffix *-ness* or *-ity*. Let us illustrate these features by comparing prototypical adjectives that are in the form of *V-ing* with present participles, which are also in the form of *V-ing*.

Both present participles (e.g. *crying* baby) and prototypical *V-ing* adjectives (e.g. *interesting* book) can modify nouns attributively. However, prototypical *V-ing* adjectives can be modified by degree adverbs⁴⁷ and have comparative/superlative forms, whereas present participles do not. These differences show that prototypical

⁴⁷ Manner adverb modification is compatible with both property denotation (e.g. *He was purposefully silent*) and event denotation (e.g. *the hard-working student*), whereas degree adverbs can only modify adjectives with property denotation, because properties but not events can be described by degree.

adjectives are gradable, whereas participles are not. Gradability is one of the features of prototypical adjectives. It denotes a property that can be possessed in varying degrees. The degree can be questioned or indicated by using a degree adverb (Pullum & Huddleston 2002: 531), as well as by the comparative and superlative forms. Participles are not gradable, i.e. they cannot be modified by degree adverbs and do not have comparative forms.

(12)

- a. a very interesting book
- b. The other book is more interesting.
- c. How interesting is the book?

(13)

- a. *a very crying baby
- b. *She is more crying.
- c. *How crying is that baby?

However, there are ungradable adjectives. Associative adjectives are not gradable, e.g. **more feline*, **very vernal*, **more bovine*; “absolute” adjectives⁴⁸ are not gradable, e.g. **more total*, **very eternal*, **more complete*, etc. Thus, gradability is not a criterion for identifying adjectives. Therefore, the incompatibility with degree adverb modification or comparative forms does not invalidate the analysis of participles being adjectives.

The differences between participles and prototypical adjectives are due to their different semantics. Participles denote events, whereas prototypical adjectives denote properties. For instance, in *a sleeping boy*, the present participle *sleeping* denotes a more or less temporal event; whereas in *a charming boy* the prototypical adjective *charming* denotes a relatively permanent property of the boy, rather than the event that a boy charms someone. A boy who is charming someone is not necessarily charming, and a charming boy is not necessarily involved in the event of charming someone.

This semantic contrast is similar to the one between prototypical adjectives and the already-known subclass of adjectives that is not property-denoting. Associative

⁴⁸ For a definition of “absolute” adjectives and more examples, see (Pullum & Huddleston 2002: 531).

adjectives are adjectives that denote entities, not properties (Giegerich 2015: 19), e.g. *bovine tuberculosis*, *dental decay*, *vernal equinox*, *criminal law*. For instance, the associative adjective *dental* in *dental decay* does not denote the property of the decay, as prototypical adjectives such as *slow* or *terrible* would. *Dental* denotes the entity of the decay, identifying what is decaying: teeth.

Going back to the analysis of gradability, degree adverbs and comparative/superlative forms describe the degree of a property. Participles denote events, which cannot be described by degree. Therefore, participles are not gradable, i.e. they cannot be modified by degree adverbs and have no comparative/superlative form. For the same semantic reason, associative adjectives, which are entity-denoting, are also ungradable, e.g. **very dental decay*, **more vernal equinox*.

The different semantics also give rise to morphological differences between prototypical adjectives and participles. Prototypical adjectives can be negated via *un-* prefixation, whereas present participles often cannot. The negation prefix *un-* negates a property, therefore, selects property-denoting adjectives. Participles denote event, therefore cannot take the negation prefix.

(14)

- a. interesting – uninteresting
- b. exciting – unexciting
- c. surprising – unsurprising
- d. exciting – unexciting
- e. pleasing – unpleasing

(15)

- a. laughing – *unlaughing
- b. falling – *unfalling
- c. teaching – *unteaching
- d. crying – *uncrying
- e. walking – *unwalking

Associative adjectives are also not compatible with the negation prefix *un-*, (despite being adjectives), e.g. **undental decay*, **unvernal equinox*. Again, this is because they are not property-denoting.

There are examples when a present participle takes a negation prefix *un-*, which illustrates that participles cannot be verbs because the negating *un-* is not allowed with verbs (Poutsma 1923: 200). However, note that the outcome *un-V-ing* form is a prototypical adjective, which denotes a property. The negated forms are devoid of almost all verbal semantics of the present participles.

(16)

- a. His face is hard and unsmiling.
- b. The moor can be a very wild and unforgiving place in bad weather.
- c. He took secret pictures of his unknowing victims.
- d. People are extremely unthinking about such a number of important things.
- e. It is very unfeeling of him to leave his family.
- f. the unsleeping eye of justice

Prototypical adjectives can have the suffix *-ness* attached to form a noun, whereas present participles cannot.

(17)

- a. interesting – interestingness
- b. boring – boringness
- c. annoying – annoyingness
- d. amazing – amazingness

(18)

- a. laughing – *laughingness
- b. falling – *fallingness
- c. rising – *risingness
- d. walking – *walkingness

This feature is again the result of the property denotation of prototypical adjectives: the suffix *-ness* defines a property. Participles, due to their event denotation, do not take the suffix *-ness* because of their event denotation. Similarly, associative adjectives, denoting entities, also lack this feature, e.g. **dentalness of decay*, **vernalness of equinox*.

Both phrases headed by prototypical *V-ing* adjectives and phrases headed by present participles can function as the predicative complement of *be*. There is a difference in meaning, and they can be distinguished via degree adverb modification or

comparative forms. The meaning difference again results from their different semantics. A present participle denotes an event that the subject is involved in, and the combination of *be* taking a present participle complement expresses the progressive aspect of the event; whereas a prototypical *V-ing* adjective, as the predicative complement of *be*, denotes a property of the subject. The inability of present participles to occur after verbs that select property-denoting complements, such as *seem* (Fabb 1984; Huddleston 1984: 319), also illustrates their semantic difference. Compare:

(19)

- a. The book seems interesting.
- b. The story became boring.
- c. He looks charming
- d. The plan sounds exciting.

(20)

- a. *The prices seem falling.
- b. *She looks laughing.
- c. *The boy sounds crying.
- d. *The sun becomes rising.

Verbs such as *seem*, *appear*, *become*, *remain*, *look*, *sound*, etc. choose property-denoting adjectives as the complement. Like participles, associative adjectives, do not combine with these verbs either, because they denote entities but not properties, e.g. **The decay seems dental*, **The equinox seems vernal*. Associative adjectives cannot be predicates (**The decay is dental*), which will be discussed in section 6.3.1.1, but that is irrelevant to this particular argument.

I have shown that participles are indeed different from prototypical adjectives, in that they lack certain features of prototypical adjectives. However, the differences are due to their different semantics. The features that participles lack are not features of adjectives in general but those of a specific type of adjectives, namely prototypical ('ascriptive') adjectives, denoting properties (Ferris: 1993: 24).⁴⁹ It is the property-denoting semantics of ascriptive adjectives that credits those features. In contrast, participles have event-denoting semantics. It is the event-denoting semantics that

⁴⁹ Prototypical adjectives are ascriptive. They denote properties, ascribing those properties in intersective attribution to the head noun (Ferris 1993: 24).

makes participles illicit in contexts where only property-denoting adjectives are licensed. That is to say, the differences between participles and prototypical adjectives are not distributional and thus not reliant on categorial status. Participles are adjectives even though they are distinct from prototypical adjectives.

Furthermore, associative adjectives – the already-known subclass of adjectives that is non-ascriptive and denotes entities – have striking similarity with participles, which will be further analysed in section 6.3.1. Note that associative adjectives are synonymous with nouns (*dental decay = tooth decay, vernal equinox = spring equinox, financial advisor = finance advisor*, etc.). So if we called participles forms of verbs, on the strength of their event-denoting semantics, we ought to also call associative adjectives nouns, due to their entity-denoting semantics. Given that they are clearly not nouns, participles are not verbs.

In terms of syntactic distribution, there are also adjectives that are restricted in function. Some adjectives cannot be used predicatively, e.g. *utter darkness – *the darkness is utter, the latter option – *the option is latter, a total stranger – *the stranger is total, our main objective – *The objective is main*. Adjectives formed with the prefix *a-* cannot modify nouns attributively, e.g. *The child is asleep – *an asleep child, The man is alive – *an alive man, The child is alone – *an alone child*. Some adjectives with obligatory complements are also not used predicatively, e.g. *The minister is desirous of meeting with them – *the desirous minister*. Some adjectives can occur attributively, but with a different sense from the predicatively used one, e.g. *They are able to talk – the able workers, I am fond of him – fond memories, That person is responsible for the fiasco – the responsible person, I am sorry – a sorry sight*. Bolinger (1967) discusses the relationship between attributive adjectives and predicative adjectives in detail and analyses the reason why certain adjectives are not used attributively or predicatively. Although such adjectives are restricted in function, they are still categorially adjectives (Pullum & Huddleston 2002: 553-562). Similarly, some participles cannot be used attributively, e.g. **a born baby, *a coughed patient, *a cried child, *a laughed audience*, etc., but they belong to the category of adjectives despite their restriction in function.

6.2.3.2. Subcategory features of participles

Because of their event-denoting semantics, participles, unlike prototypical adjectives, are not compatible with degree adverb modification, comparative/superlative form, *seem* predication, and *-ness/-ity* suffixation, *un-* negation.

In addition, phrases headed by participles have the internal structure of VPs. For example, compare *The boy is running* and *The boy is charming*. We can easily tell that *running* is a present participle, *charming* is a prototypical adjective, not only because of the difference in meaning but also because of the structure of the complementation. Since *charm* is a transitive verb, then if *charming* is a present participle, following *be* as the predicative complement, it should take a direct object, as in *The boy is charming the audience*.

In a predicate, both predicatively used adjectives⁵⁰ and verbs are theta-markers and theta-mark the subject. For instance, in *He is happy* and *He runs/wrote a book*, both the adjective *happy* and the verb *runs/wrote* assign a Θ -role on the subject. Verbs, additionally, have an argument structure. Therefore the verb assigns a Θ -role on all of the arguments, e.g. in *He runs*, the subject *he*; in *He wrote a book* both the subject *he* and the direct object *a book*.

One question is if participles are adjectives, why do present participles, such as *writing* in *He is writing a book*, take a direct object, as transitive verbs do? The answer is: it is acceptable and plausible that adjectives can take NP-complement, i.e. direct object, as discussed in Maling (1983). There are cases where (prototypical) adjectives take a direct object, e.g. *worth*, *like*, *near* as in *This cake is worth the calories*, *She is/looks like her mother*, *Don't go any nearer the water*. Maling (1983) discusses such adjectives and provides strong arguments for analysing *near* as an adjective that takes an NP-complement. I merely argue that this class is larger and includes participles. Besides, the reason why present participles can take a direct object is well explained by the argument structure representation of participles, which comes from their event denotation.

⁵⁰ In *He is happy*, *happy* alone not *is happy*, is the predicate. The copular verb here is a grammatical word. *Is* is present purely to satisfy needs of the syntax and does not contribute to the semantic interpretation of the sentence in the same way semantically full lexical items do (Napoli 1989: 9).

Participles are adjectives and thus are theta-markers. Additionally, participles are derived from verbs and denote events, i.e. participles have a meaning that is directly derivative from the embedded verbs; thus, they have the argument structure representation of the embedded verbs. Because participles are theta-markers and have the argument structure representation of the embedded verbs, phrases headed by participles have the internal structure of VPs. Let us analyse the following examples.

(21)

- a. He is writing a book.
- b. He is charming the audience.
- c. He is running.

In (21a) *He is writing a book*, a Θ -role is assigned on the subject from the adjective *writing* because adjectives are theta-markers. Additionally, the present participle *writing* is an adjective derived from the verb *write*, and it denotes an event that the subject is involved in; thus, *writing* has the argument structure representation of the embedded verb. The phrase headed by the participle has the structure of VPs; therefore, *writing* assigns a Θ -role on all arguments. So the direct object *a book* in (21a) is kept.⁵¹

The analysis is the same for (21b). In comparison to (21b), where *charming* is an event-denoting adjective, *charming* in *He is charming* denotes a property of the subject. Even though the property-denoting adjective *charming* is also derived from the verb *charm*, it does not have argument structure representation, because its meaning is not directly derivative from the embedded verb. Due to the lack of argument structure, *charming* here assigns a Θ -role on the subject only. Furthermore, in contrast to the adjective *charming*, we can only have *He is happy* but not have **He is happy the audience*, because *happy*, unlike *charming*, is not derived from a verb and can only be a property-denoting adjective.

⁵¹ Note this analysis of participles, which are event-denoting adjectives, is in contrast to event-denoting nouns that are derived from verbs. For examples, in *The writing of a book is hard*, *writing* takes a prepositional object rather than a direct object, as the participle does. The reason of this contrast is that, according to Grimshaw (1990: 78-79), unlike verbs and adjectives, nouns are defective theta-markers. Event-denoting nouns, though having argument structure representation, cannot theta-mark without the help of a preposition. Therefore, the event-denoting noun *writing* requires the preposition *of* to transmit theta-marking from it to the direct object *a book*.

In (21c) *He is running*, the embedded verb of the participle is an intransitive verb. The event-denoting adjective assigns a θ -role on all arguments, i.e. the subject. However, this does not mean that the *V-ing* form of intransitive verbs is excluded from a being property-denoting adjective. For example, the *V-ing* form of the intransitive verb *last* in *Their relationship was lasting* can be either a present participle, which denotes the event that their relationship lasted, or it can be a prototypical adjective, which denotes the property of their relationship. When *lasting* is a present participle, it assigns a θ -role on all arguments, i.e. the subject. When *lasting* is an ascriptive adjective, it assigns a θ -role on the subject. *Lasting* being an ascriptive adjective can be proven by its function as the predicative complement of *seem* (*Their relationship seems lasting*) or by *very* modification (*a very lasting relationship*).

Adjectives derived from verbs can either denote events or denote properties. Only the event-denoting ones have the argument structure representation of the embedded verbs, i.e. the phrases headed by the adjectives have the internal structure of VPs. Let us compare the two types of adjectives that are derived from the same verbs.

(22)

- a. The mother is protecting/supporting her children.
- b. The mother is protective/supportive of her children.

Both *protecting* and *protective* are adjectives derived from the verb *protect*. In both examples, the subject is assigned a θ -role from the adjective. The present participle *protecting* denotes an event, and thus *protecting* has the argument structure representation of the embedded verb. Therefore, the phrase headed by *protecting* has the internal structure of VPs. In contrast, *protective*, though also derived from the verb, denotes a property of the subject, not an event. Thus, *protective* has no argument structure representation, i.e. there is no direct object for *protective* to assign on. The prepositional phrase *of her children* is a constituent of the *protective* property.⁵²

⁵² Note that argument structure is not only the property of having semantic arguments, but it is also about the relationship between semantic arguments and syntax. In the case of property-denoting adjectives derived from verbs, such as *protective*, *supportive*, there is a semantic argument, but there is no syntactic linking.

The analysis is the same when phrases headed by past participles function as the predicative complement of *have*, where the combination expresses the perfect aspect.

(23)

- a. He has written a book.
- b. He has run (for two hours)
- c. His right ankle has swollen.

In (23a), *written* assigns a Θ -role on the subject, because *written* is an adjective; additionally, because *written* is a past participle, an adjective that is derived from a verb and denotes an event, the phrase has the internal structure of VPs. Thus, *written* assigns a Θ -role on all arguments, including the direct object *a book*. In (23b, c), the embedded verb of the past participle is an intransitive verb. The event-denoting adjectives *run* and *swollen* assign a Θ -role on all arguments, i.e. the subject.

In comparison to (23c), in *His right ankle is/seems swollen*, *swollen* is an ascriptive adjective, denoting the property of his right ankle, and it assigns a Θ -role on the subject. The distinction between the past participle *swollen* and the ascriptive adjective one is a matter of different semantics. The past participle *swollen* can undergo a semantic shift and gain property-denoting semantics, thus becoming an ascriptive adjective. I will discuss the semantic shift in detail in section 6.3.2.2.

Adjectives are theta-markers and theta-mark the predicate subject. Participles are event-denoting adjectives that are derived from verbs, and thus have the argument structure representation of the embedded verbs. Therefore, past participles theta-mark all the arguments, and phrases headed by past participles have the structure of VPs. In contrast, ascriptive adjectives denote properties, and thus even if they are adjectives derived from verbs, they have no argument structure because their meaning is not directly derivative from the verbs.

The analysis of the internal phrase structure is slightly different when phrases headed by past participles function as the predicative complement of the verb *be*, with the combination expressing the passive voice, because the argument structure representation of passive predicates has suppressed argument positions. The subject of the embedded verb of the past participle is suppressed. Suppressed positions cannot be satisfied by arguments, nor can they theta-mark arguments. They can, however, license argument adjuncts, i.e. an agentive *by* phrase (Grimshaw 1990:

107-118). As in (24) the NP followed *by* is the suppressed subject of the embedded verb.

(24)

- a. The door was closed (by his father).
- b. The chicken was cooked (by my grandmother).

Without the *by* phrase that indicates the agent of the event, the sentences in (24) are ambiguous, with either an event interpretation or a property interpretation. For example, *The door was closed* can denote the event that someone closed the door, where *closed* is a past participle; the example can also denote the property of the door, i.e. that the door is not open, where *closed* is an ascriptive adjective. Similarly, *cooked* in *The chicken was cooked* can be either a past participle, denoting the event that someone cooked the chicken, or a property-denoting adjective, which means ‘not raw’.

Because participles are derived from verbs and denote events, phrases headed by past participles have the internal structure of VPs. Some past participles that follow the predicate verb *be*, unlike prototypical adjectives, can take complements. The complementation is an illustration of the internal phrase structure.

(25)

- a. Tom was considered a loyal friend.
- b. She was considered lucky.
- c. He was known to be an alcoholic.

In (25a), the adjective *considered* denotes the event that someone considered Tom a loyal friend. Similarly, in (25b), the adjective denotes the event that someone considered her lucky, and in (25c), the adjective denotes the event that someone knew him to be an alcoholic.

Similarly, if the embedded verb of a past participle is ditransitive, then an NP as the indirect object following that past participle also illustrates that past participles have the argument structure representation of the embedded verbs, e.g. *He was given ten pounds*, *He was awarded the Nobel prize for literature*.

6.3. The category of adjectives

Prototypical adjectives are called ascriptive adjectives, as mentioned in section 6.2.3.1. Ascriptive adjectives denote properties, ascribing those properties in the intersective attribution⁵³ to the entity instantiated by the head noun (Ferris 1993: 24). There are also non-prototypical adjectives that belong to this category. Participles and associative adjectives are adjectives, though they are different from prototypical adjectives in specific ways due to their semantics.

In the category of adjectives, ascriptive adjectives are considered the default adjectives and have the adjectival semantics of denoting properties. The other two are of a category mismatch – associative adjectives are adjectives with the nominal semantics of denoting entities, participles are adjectives with the verbal semantics of denoting events. This section compares the non-prototypical adjectives with the default adjectives – analysing their non-prototypical features, their ability and tendency towards prototypicality. We can see a parallel between associative adjectives and participles.

6.3.1. Comparison of associative adjectives and ascriptive adjectives

6.3.1.1. Contrasts

In contrast to ascriptive adjectives, which have property-denoting semantics, associative adjectives are entity-denoting. Entities are prototypically denoted by nouns. Associative adjectives are synonymous with the nouns from which they synchronically derived (*finance* advisor – *financial* advisor, *autumn* equinox – *autumnal* equinox), or with which they partner semantically (*tooth* decay – *dental* decay, *cattle* disease – *bovine* disease). The suffixes of derived associative adjectives are semantically empty (Kastovsky 1982; Levi 1978; Warren 1984).

⁵³ We do not consider non-intersective attribution here. Ascriptive attribution is typically intersective. There is non-intersective attribution, such as intensional attribution (*a false friend*; it is a defining characteristic of a false friend that such a person is not actually a friend.) As another example, *a heavy smoker* allows not only intersective reading ('a smoker who is a heavy person'), but also subsective reading ('someone who smokes heavily'). With subsective attribution, the attribute ascribes a property merely to a certain aspect of the semantics of the head noun, for example to the way a smoker smokes (Giegerich 2015: 6,7,13,14). Therefore, *a heavy smoker* is not necessarily heavy, and the subsective attribute adjective *heavy* cannot be used predicatively, despite being an ascriptive adjective.

Associative adjectives constitute a mismatch between the lexical category of adjectives and the semantics typically associated with nouns. The nominal semantics give rise to the non-prototypical behaviours of associative adjectives. In comparison to ascriptive adjectives, associative adjectives lack certain features.

The relation between entity-denoting adjectives and the modified head noun is not ‘is’, as it is in the ascriptive attribution, but ‘is associated with’. Therefore, for *dental decay*, *vernal equinox*, *bovine tuberculosis*, *criminal law*, *mental health*, the interpretation is: this decay is associated with teeth, this equinox is associated with spring, this tuberculosis is associated with cattle, this law is associated with crime, the health is associated with the mind.

Associative adjectives cannot be used predicatively. The nature of the semantic relationship that the verb *be* establishes between the subject and the predicate requires that the predicate construction must have intersective interpretation. Associative adjectives constitute a major subclass among the intrinsically non-intersective adjectives. Thus, associative adjectives are unable to function as the predicate complement of *be* (Giegerich 2015: 7). Besides, associative adjectives, being entity-denoting, have the semantics of nouns. Associative adjectives have the subcategory features of nouns; nouns are not theta-markers. Therefore, associative adjectives, like nouns, cannot theta-mark. For example, *dental* in *dental decay* cannot be used predicatively as in **The decay is dental*, because *dental* does not assign a θ -role on *the decay*.

Because associative adjectives cannot be used predicatively, and because they are not property-denoting, they cannot function as the predicative complement of *seem* either, which selects property-denoting adjectives.

(26)

- a. dental decay – **The decay is/seems dental.*
- b. vernal equinox – **The equinox is/seems vernal.*
- c. bovine tuberculosis – **The tuberculosis is/seems bovine.*
- d. criminal law – **The law is/seems criminal.*
- e. mental health – **The health is/seems mental.*

Associative adjectives are not gradable because of their entity-denoting semantics. Thus, they have no comparative/superlative form and cannot be modified by degree adverbs, such as *very*, *too*.

(27)

- a. *a very dental decay
- b. * more dental decay
- c. *a more vernal equinox
- d. *the most bovine tuberculosis
- e. *a very mental health
- f. *the more criminal law

Associative adjectives cannot have the suffix *-ness* or *-ity* attached and be derived into a noun, because such suffixes, which define a property, attach to property-denoting adjectives only.⁵⁴

(28)

- a. *the dentalness of the decay
- b. *the vernalness of the equinox
- c. *the bovineness of the tuberculosis
- d. *the criminalness/criminality of the law
- e. *the mentalness of the health

Similarly, the negation prefix *un-*, which negates a property, also cannot attach to associative adjectives, e.g. **the undental decay*, **the unvernal equinox*, **the unbovine tuberculosis*.

All these limitations closely mirror those of participles, which supports my argument that these limitations are due to the semantics of the subcategories of adjectives, and thus do not conflict with an analysis of participles as belonging to the category of adjectives.

⁵⁴ *Criminalness/criminality*, *mentalness/mentality* do exist, but only when they are derived from the ascriptive adjectives *criminal* and *mental*. I will discuss this in section 6.3.1.2.

6.3.1.2. Tendency towards prototypicality

According to Leitzke (1989), Giegerich (2005, 2015) and Koshiishi (2011), it is common for individual associative adjectives to acquire ascriptive senses after a semantic shift. Associative adjectives becoming ascriptive adjectives is a case to case shift phenomenon, and the direction of a semantic shift is from basic (associativeness) to prototypicality (ascriptiveness). Leitzkel (1989: 139 ff.) addresses this discussion in detail.

Let us take the adjectives *bovine*, *criminal* for example. The semantic shift is from the basic associative meaning of ‘related to the ox, cow’ as in *bovine tuberculosis*, to the extended ascriptive sense of ‘dull like a cow’ as in *a bovine crowd of people*, where *bovine* is an ascriptive adjective. The semantic shift is from ‘related to crime’ as in *criminal law*, to ‘crooked, guilty of crime’ as in *He is very criminal*, where *criminal* is an ascriptive adjective. The direction of the semantic shift is also attested by the data from OED. The associative sense of *criminal* is first quoted in c1400, and the ascriptive sense of *criminal* is first quoted in 1489. The associative *bovine* is first quoted in 1845, and its ascriptive sense is first quoted in 1855. Note that such a semantic shift is a case to case phenomenon. Not every associative adjective has an ascriptive counterpart, for example, *phocine*. We do not say **He is rather phocine* to mean that he is rather seal-like.

Once an associative adjective becomes an ascriptive one, for those that are denominal adjectives, the adjective-forming suffixes are no longer semantically empty and have denotations more specific than merely being associated to the nouns that they are derived from. Compare *criminal law* and *criminal man*, in the associative *criminal*, the suffix *-al* adds nothing to the semantics of the base noun *crime*, whereas the ascriptive *criminal* means more than crime but denotes the property that is characteristic of crimes.

When an associative adjective becomes an ascriptive adjective, it naturally gains the features of ascriptive adjectives. Let us compare the associative adjective *criminal* in *criminal law* and the ascriptive one in *criminal man*.

(29)

- a. *That law is criminal.
That man is criminal

- b. *That law seems criminal.
That man seems criminal
- c. *a very criminal law
a very criminal man
- d. *the criminalness/criminality of that law
the criminalness/criminality of that man

The features of ascriptive adjectives, therefore, can disambiguate adjectives which are subject to the associative-ascriptive ambiguity. For instance, *criminal lawyer* is ambiguous. The associative interpretation is ‘a lawyer who is specialised in criminal law’, and the ascriptive interpretation is ‘a crooked lawyer’. However, *criminal* in *The lawyer is very criminal* is an ascriptive adjective without ambiguity. In the military force jargon *friendly fire*, which means ‘gunfire associated with one’s own side’, *friendly* is an associative attribute. *Friendly fire* can be ambiguous (albeit facetiously so), since *friendly* also has an ascriptive sense, in most cases. However, when *friendly* is attached to the suffix *-ness*, as in *the friendliness of the fire*, the attribute is unambiguously ascriptive, because the suffix *-ness* selects property-denoting adjectives; when *friendly* is in comparative form, as in *the friendlier fire*, the attribute is ascriptive, because associative adjectives are not gradable.

The situation is similar with collateral adjectives. Collateral adjectives are a subset of associative adjectives which have a semantically corresponding noun (e.g. *dental – tooth, mental – mind, bovine – cattle, feline – cat*). Many of such associative adjectives can undergo a semantic shift and gain property-denoting semantics. The associative adjective *dental* in *dental decay* can undergo a semantic shift and become an ascriptive one as in *dental fricative*, denoting the property of the fricative, described in terms of its place of articulation. When *dental* is an attribute with the ascriptive sense, it has the features of ascriptive adjectives, e.g. *The fricative is dental*, in contrast to **The decay is dental*. There is a group of ‘animal-name’ associative adjectives, which are prone to becoming ascriptive adjectives and denoting a property that is connected with the animal (Koshiishi 2011: 164). The ascriptive version is of a metaphorical nature. For instance, in *She has a feline face*, *feline* means ‘having graceful looks or movements like a cat’, and in *a bovine crowd of people* means ‘dull, unexcited like a cow’.

The ascriptive features again can disambiguate examples like *mental hospital*, which has two interpretations. *Mental hospital* can mean ‘hospital that is associated with the mind, where people who are mentally ill receive treatment’, and *mental* is an associative attribute; when *mental* undergoes a semantic shift and becomes property-denoting, *mental hospital* means ‘crazy hospital’. When *mental* is attached to the suffix *-ness*, as in *the mentalness of the hospital*, *mental* is unambiguously an ascriptive adjective, meaning ‘crazy’.

Negation enforces property-denoting semantics, for instance, in *an ungrammatical sentence*, *an illegal minefield*, *an unemotional voice*, the attribute must be ascriptive; whereas *grammatical function*, *legal system*, *emotional support* are of associative attribution.

Furthermore, it is often the case that ascriptiveness is the default interpretation for Adj-Ns, and that associativeness is a more specific and hence non-default interpretation. The Elsewhere Condition (Giegerich 2001; Kiparsky 1982) predicts that associative Adj-N must be generated before the ascriptive alternative is; and if it arises, it will block the latter interpretation (Giegerich 2005: 585). Placing the associative version of *criminal lawyer*, *mental hospital* in the lexicon expresses this ordering.⁵⁵ Since ascriptiveness is the default interpretation, associative adjectives tend to become ascriptive adjectives – the prototypical adjectives. For instance, *friendly* can only be associative when it is the attribute in the military jargon *friendly fire*, and it is mostly used as an ascriptive adjective as in *Mary is very friendly to me*. *Neighbourly* is barely used as an associative adjective to mean ‘associated with neighbour’, but is generally used in its ascriptive sense that denotes the property which is characteristic of a good neighbour. *Autumnal* is only associative when combining with *equinox*, but when we talk about *autumnal weather*, *autumnal* is an ascriptive adjective, denoting the property of the weather, which is characteristic of autumn.

⁵⁵ If it is true that *criminal lawyer* is unlikely to mean ‘crooked lawyer’, then this is a case of homonymy blocking (Bauer 1988: 82; Giegerich 2001).

6.3.2. Comparison of participles and ascriptive adjectives

6.3.2.1. Contrasts

Present participles are derived from verbs via *-ing* suffixation and past participles are derived from verbs via *-ed* suffixation or in various irregular forms (e.g. *drunk, lost, hurt, broken*). Participles are event-denoting adjectives, which constitutes a mismatch between the lexical category of adjectives and the semantics typically associated with verbs. The verbal semantics give rise to the non-prototypical behaviours of participles. In comparison to ascriptive adjectives, which denote properties, participles lack certain features that are limited to property-denoting adjectives.

Participles have event-denoting semantics; they do not denote properties. Therefore, they are not gradable, i.e. they have no comparative/superlative form and cannot be modified by degree adverbs. They cannot function as the predicative complement of the verbs that select property-denoting complements. The suffix *-ness*, which attaches to property-denoting adjectives, is not applicable to participles.

(30)

- a. *a very sleeping beauty
- b. *a very stolen wallet
- c. *a very escaped prisoner

(31)

- a. *a more walking man
- b. *a more answered question
- c. *more fallen leaves

(32)

- a. *The baby seems crying.
- b. *The plan seems discussed.
- c. *The guests seem departed.

(33)

- a. *the walkingness of the man
- b. *the discussedness of the plan
- c. *the fallenness of leaves

The negation prefix *un-*, which negates a property, is not compatible with participles, e.g. **uncrying baby*, **unwalking man*. There are negated adjectives whose unprefix part is a participle, e.g. *an unsmiling girl*, *an unanswered question*. However, the outcomes are ascriptive adjectives, denoting properties; thus, the negated adjectives are devoid of all verbal semantics. For instance, *unsmiling* denotes the property of the girl, not the absence of the event.

We can see the parallel to associative adjectives, which have the same non-prototypical behaviours, as discussed in section 6.3.1.1.

AdjPs headed by participles can function as the predicative complement of the verb *be*. Though *be* also selects AdjPs headed by ascriptive adjectives as its predicative complement, they have different semantics from participles. Ascriptive adjectives denote a property of the subject, as in *The dress is pretty*, where *pretty* denotes the property of *the dress*; whereas participles denote an event that the subject is involved in. The combination of the predicate verb *be* and a present participle expresses the progressive aspect of the event, as in *The beauty is sleeping*, where *sleeping* denotes the event that *the beauty* is involved in. Past participles can also follow the verb *be* as its predicative complement, e.g. *The plan was discussed*, where the past participle denotes the event that someone discussed the plan, and the combination of the predicate verb *be* and the past participle expresses the passive voice.

Because present participles belong to the category of adjectives, the progressive aspect is expressed by *be* + Adj. Then this means English does not have the progressive aspect as a grammatical category of verbs. I analyse it as a knock-on effect for other areas of English morphosyntax⁵⁶; note that other Germanic languages do not have the progressive aspect either.

Because of the differences discussed before, we can distinguish a present participle (e.g. *He is charming the audience*) from its ascriptive counterpart (e.g. *He is charming*). There is also a phrase structural analysis that explains why *charming* in *He is charming* cannot be a present participle. Because participles are adjectives that are derived from verbs and have a meaning directly derivative from the embedded verbs, phrases headed by participles have the internal structure of VPs. The verb

⁵⁶ As discussed in section 4.2.1, *be* + present participle is grammaticalised as an expression of the progressive aspect, but this is not grammatically arbitrary. The progressive aspect is analysed as the composition of the predicate verb *be* and the event-denoting semantics of present participles.

charm is a transitive verb and therefore requires a direct object. In *He is charming*, there is no NP following *charming* as the direct object, so *charming* is not a present participle but an ascriptive adjective.

Cases with past participles, following the predicate verb *be*, can be ambiguous since we cannot tell from the surface structure whether it is a past participle or the corresponding ascriptive adjective. For example, *The chicken was cooked* is ambiguous. Here, *cooked* can be a past participle, denoting the event that someone cooked the chicken; *cooked* can also be an ascriptive adjective, denoting the property of the chicken, that the chicken is not raw. The features of ascriptive adjectives can disambiguate the interpretation of the adjectives. For instance, in *The chicken seemed cooked*, *cooked* must be an ascriptive adjective. In addition, the agentive *by* phrase is an illustration of the passive voice construction. Therefore, *cooked* in *The chicken was cooked by my mother* is a past participle without ambiguity.

Phrases headed by past participles can also function as the predicative complement of the verb *have*, e.g. *The prisoners have escaped*. The participle denotes an event that the subject is involved in, and the composition of the predicate verb *have* and the event-denoting semantics of the past participle expresses the perfect aspect. The past participle can also modify a noun attributively, e.g. *escaped prisoners* (with the meaning that the prisoners have escaped). Here are some examples of a past participle as an attributive modifier, the attribute having the same meaning as when the participle functions as the predicative complement of *have*, i.e. expressing the perfect aspect of an event.

(34)

- a. escaped prisoners
The prisoners have escaped
- b. fallen leaves
The leaves have fallen.
- c. departed guests
The guests have departed
- d. disappeared civilisation
The civilisation has disappeared.
- e. bloomed flowers

The flowers have bloomed.

f. faded memory

The memory has faded.

All past participles can follow the predicate verb *have*, with the combination expressing the perfect aspect. However, not all past participles can modify nouns attributively with an interpretation of the perfect aspect of an event denoted by the participle.⁵⁷ There are restrictions on the verbs. The past participles of transitive verbs or unergative intransitive verbs⁵⁸ are excluded from this use. For example, an author who has written many books is not called a **written author*, an organiser who has planned the conference is not a **planned organiser*, a baby who has cried is not a **cried baby*, a patient who has coughed is not a **coughed patient*. Only the past participle of unaccusative intransitive verbs can function as the attributive modifier of nouns with a meaning of the perfect aspect of an event denoted by the participle. For examples, the prisoners who have escaped can be called *escaped prisoners*, and the leaves that have fallen can be called *fallen leaves*. All the examples in (34) are the past participles of unaccusative verbs, the subjects of which are the themes which undergo the motion or the change of state specified by the verb.

6.3.2.2. Tendency towards prototypicality

Similar to the associative-to-ascriptive shift discussed in section 6.3.1.2, individual participles can also undergo a semantic shift and acquire property-denoting semantics, and they have the tendency to become prototypical adjectives.

The direction of the semantic shift can be attested by data from OED. For instance, the ascriptive adjective *boring* is first quoted in 1840, whereas the verb *bore* is first quoted in 1768, though the earliest example from OED that use *boring* as present participle is in 1853.⁵⁹ Like the associative-to-ascriptive shift, the shift from

⁵⁷ As mentioned in section 4.2.1, although these past participles are restricted in function, they are still categorially adjectives, just as that some ascriptive adjectives cannot be used attributively either, e.g. **an asleep child*, **an alone child*, etc.

⁵⁸ Syntactic analysis in a variety of theoretical frameworks has established that intransitive verbs are of two types, unaccusative and unergative. The single argument of an unaccusative verb is syntactically equivalent to the direct object of a transitive verb, whereas the single argument of an unergative verb is syntactically equivalent to the subject of a transitive verb (Sorace 2000).

⁵⁹ Similarly, the ascriptive adjective *amazing* in 1704 – the verb *amaze* in 1593, the ascriptive adjective *amusing* in 1826 – the verb *amuse* in 1480, the ascriptive adjective *entertaining* in 1582 –

participial to ascriptive is also a case to case phenomenon. Not every participle has a corresponding ascriptive adjective, for example, *drinking* (compared to *drunk* as in *She is drunk*). We do not say **He is very drinking* to mean that he has a specific property that is related to *drink*.

In chapter 4, we have distinguished prototypical adjectives that are in the form of participles from their participle counterparts. Those are the cases where participles have undergone the semantic shift and then become ascriptive adjectives.

Here are some examples of participles undergoing a semantic shift and gaining property-denoting semantics, becoming ascriptive adjectives; they are used as ascriptive adjectives rather than participles by default because of the tendency towards prototypicality:

(35) present participles to ascriptive adjectives

amazing, annoying, boring, charming, disturbing, embarrassing, exciting, exhausting, fascinating, frustrating, frightening, interesting, intriguing, irritating, misleading, perplexing, relaxing, surprising, tiring, vexing

(36) past participles to ascriptive adjectives

amazed, annoyed, bored, charmed, disturbed, embarrassed, excited, exhausted, fascinated, frightened, frustrated, interested, intrigued, irritated, perplexed, relaxed, surprised, tired, vexed, lost, broken, hurt, drunk

The semantic shift credits the participles property-denoting semantics, and thus the participles become ascriptive adjectives. They also gain the features of ascriptive adjectives. Firstly, they can be gradable. Thus they can be modified by degree adverbs such as *very*, and have comparative/superlative form.

(37)

- a. a very interesting story; His story is more interesting.
a very boring journey; This journey was more boring.
- b. a very tired girl, The boy is more tired.
very excited audience, The performer is more excited.

the verb *entertain* c1540; the ascriptive adjective *misleading* 1599 – the verb *mislead* OE; the ascriptive adjective *irritating* 1707 – the verb *irritate* 1531, etc.

Secondly, the AdjPs can function as the predicative complement of verbs that select property-denoting complements, such as *seem*, *look*, *sound*.

(38)

- a. The story seems interesting.
The journey sounds boring.
- b. The girl looks tired.
The audience seems excited.

Because of the property-denoting semantics, the adjectives can take the suffix *-ness* and be derived into nouns – *interestingness*, *boringness*, *tiredness*, *excitedness*, for instance:

(39)

- a. Is writing style related to readers' assessments of a story in terms of its interestingness, dullness and other story characteristics?
- b. Words cannot describe the extent of its awful boringness.
- c. She pleaded tiredness and went to bed early.
- d. Thank you all for your excitedness.

In addition, negation enforces ascriptiveness. The negated adjectives are devoid of verbal semantics of the participles. For instance, in *a smiling girl*, *smiling* is a present participle and denotes the event, but *an unsmiling girl* does not denote the absence of the event, but rather the property of the girl, which is serious or unfriendly. Similarly, we cannot say **I am unchallenging you*, or **The chicken was uncooked by his grandmother*. Negated adjectives, such as *unassuming*, *unending*, *unfeeling*, *unflinching*, *unrelenting*, *unsleeping*, *untaught*, *unseen*, *unfed*, *unknown*, *unanswered* are all ascriptive adjectives, denoting properties, even though the unprefixed counterparts are participles, which are event-denoting. Note that not all participles allow the attachment of a negation prefix and then become ascriptive adjectives. For instance, **an unlaughing girl*, **an uncrying baby*, **the unrising sun* are ungrammatical because the negated forms do not denote properties.

The features of ascriptive adjectives can disambiguate the participles and the corresponding ascriptive adjectives. For some cases, there is also a difference in the internal structure of the AdjPs. For instance, in *He is charming the audience*, *charming* takes a direct object, whereas in *He is charming*, there is no NP following.

Participles, which are derived from verbs and have a meaning directly derivative from the verbs, have argument structure. Ascriptive adjectives that are derived from verbs, however, do not have argument structure, because their meaning is not directly derivative from the verbs, i.e. they do not denote events, but rather properties. Therefore, the adjective *charming* in *He is charming* cannot be a present participle. If the adjective *charming* were a present participle, it would take a direct object, as in *He is charming the audience*.

Once a participle undergoes a semantic shift, gains property-denoting semantics, and becomes an ascriptive adjective, it is no longer event-denoting. Meanwhile, it also loses its subcategory features, i.e. the internal phrase structure of VPs. When the present participle *charming* as in *He is charming the audience* becomes the ascriptive adjective *charming* as in *He is charming*, *charming* no longer takes a direct object, because the phrase headed by the ascriptive adjective does not have the internal structure of VPs.

Here are some more examples that illustrate the semantic and the accompanying phrase structural differences in the present participle – ascriptive adjective pair. Since AdjPs headed by participles have the internal structure of VPs, then if the embedded verb is a transitive verb, it is unambiguous whether a *V-ing* form is a present participle or the ascriptive adjective that is of the same form.

(40)

- a. This was disturbing her.
What he said was disturbing.
- b. The noise is annoying the neighbours.
The noise is annoying.
- c. The storm was frightening the kids.
The storm was frightening.
- d. He is misleading the students.
His instruction is misleading.
- e. He is disappointing everyone.
He is disappointing.

If the present participle is derived from an intransitive verb, such as *lasting* in *The relationship is lasting*, there is no difference in the internal structure of the AdjP.

Therefore, whether the adjective *lasting* is a present participle or an ascriptive adjective is ambiguous; *lasting* can either denote an event or denote a property. The features of ascriptive adjectives are the main criteria to disambiguate the present participle *lasting* and the ascriptive adjective one.

Cases with past participles can also be ambiguous since we cannot tell from the surface structure of the phrase, whether it is a past participle or the corresponding ascriptive adjective that has undergone a semantic shift. For example, *The chicken was cooked* is ambiguous. The adjective *cooked* can be a past participle, denoting the event that someone cooked the chicken; *cooked* can also be an ascriptive adjective, denoting the property of the chicken, that the chicken is not raw. *My car was broken* can also have two interpretations. It can describe the event that someone or something broke my car, where *broken* is a past participle, or it can describe the property of the car, that the car cannot function as a car, and *broken* is an ascriptive adjective. The features of ascriptive adjectives can disambiguate the interpretation of the adjectives. For instance, in *The chicken seemed cooked*, *My car was unbroken*, the adjectives must be ascriptive adjectives, denoting properties.

In addition, the agentive *by* phrase, which denotes the agent of an event denoted by the participle, is a sign of the passive voice construction. Therefore, *cooked* and *broken* in *The chicken was cooked by my mother* and *My car was broken by a crazy man* are past participles without ambiguity.

Here are some more examples that illustrate the semantic and phrase structural differences in the past participle – ascriptive adjective pair. The features of the ascriptive adjectives and the agentive *by* phrase can distinguish the past participles from the identical ascriptive adjectives.

(41)

- a. The parcel seems opened.
The parcel was opened by my mother.
- b. The door seems closed.
The door was closed by the strong wind.
- c. His homework seems finished.
His homework was not finished by himself but his grandmother.
- d. The dinner seems prepared.

The dinner was prepared by Mary.

The combination *have* + past participle expresses the perfect aspect of the event that the participle denotes. The combination *be* + past participle expresses the passive voice of the event that the participle denotes. The compositionality cannot be mixed, as is shown in the ungrammaticality of **The book has written by him*, **He was written the book*, **The baby was cried*, **The patient was coughed*. The following set of data seem to be contradictory.

(42)

- a. My ankle has swollen.
My ankle is swollen.
- b. The lettuce has wilted.
The lettuce is wilted.
- c. The lake has frozen.
The lake is frozen.
- d. The hangover has gone.
The hangover is gone.
- e. Your credit card has expired.
Your credit card is expired.
- f. Your ice cream has melted.
Your ice cream is melted.

At a closer look, the ‘past’ participles (the *V-ed* form or the irregular forms) in (42) that follow both the predicate verb, *have* and *be*, are also compatible with *seem* predication, *-ness* suffixation and *very* modification (if they are gradable⁶⁰). When the *V-ed* form (or the irregular form) follows *have*, it is a past participle, and the combination expresses the perfect aspect of an event denoted by the past participle. The same form that follows *be* is no longer a past participle, and the combination does not express the passive voice; the *V-ed* form (or the irregular form) is, instead, an ascriptive adjective that has undergone a semantic shift from the past participle.

(43)

- a. Her ankle seems very swollen.

⁶⁰ The ascriptive *expired* is not gradable. Like *dead*, *complete*, etc. *expired* is an absolute adjective, i.e. an ungradable ascriptive adjective.

- b. The lettuce seems wilted.
- c. the frozenness of the lake.
- d. The hangover seems gone now.
- e. His credit card seems expired.
- f. the meltedness of the ice

6.3.3. The parallel between associative adjectives and participles

In the category of adjectives, ascriptive adjectives are the default adjectives; in comparison to ascriptive adjectives, associative adjectives and participles are non-prototypical adjectives. The non-prototypical behaviours of participles and those of associative adjectives are parallel, as shown in table 3.

Associative adjectives <i>dental decay</i>	Features of ascriptive adjectives	Participles <i>a crying baby</i>
No <i>*The decay seems dental.</i>	the predicative complement of seem	No <i>*The baby seems crying.</i>
No <i>*very dental decay</i>	degree adverb modification	No <i>*a very crying baby</i>
No <i>*a more dental decay</i>	comparative form	No <i>*a more crying baby</i>
No <i>*the dentalness of the decay</i>	-ness suffixation	No <i>*the cryingness of the baby</i>
No <i>*undental decay</i>	un- prefixation	No <i>*an uncrying baby</i>
No <i>*The decay is dental.</i>	the predicative complement of be	Yes – verbal semantics <i>The baby is crying.</i>

Table 3. Parallel defects of associative adjectives and participles.

The parallel defects of associative adjectives and participles show that their non-prototypical behaviours have the same reason – they have different semantics from ascriptive adjectives. Both associative adjectives and participles are cases of

category mismatch. Associative adjectives are adjectives with the semantics of nouns; participles are adjectives with the semantics of verbs. Ascriptive adjectives have property-denoting semantics, whereas associative adjectives are entity-denoting, and participles are event-denoting. The different semantics explain why neither participles nor associative adjectives are compatible with the features that are exclusive to ascriptive adjectives. It is the property-denoting semantics of ascriptive adjectives and the gradability that often comes along with it that licence *seem* predication, *-ness* suffixation, *un-* negation, degree adverb modification and comparative/superlative forms.

The parallel between associative adjectives and participles is also reflected in their ability and tendency to undergo a semantic shift, therefore gaining property-denoting semantics and becoming ascriptive adjectives. The semantic shift is applied on an item-by-item basis. After the semantic shift, associative adjectives become ascriptive adjectives and are no longer entity-denoting; participles become ascriptive adjectives and are no longer event-denoting; they naturally also gain the features of ascriptive adjectives, as shown in table 4.

Associative adjectives →	Ascriptive adjectives		← Participles
criminal law	the criminalness of that man	The boy is very charming.	The boy is charming the audience.
friendly fire	He seems very friendly.	The story sounds boring.	The story is boring me to tears.
emotional support	his unemotional voice	his unsmiling face	a smiling boy

Table 4. Tendency towards prototypicality.

Associative adjectives have the tendency to shift towards prototypicality, becoming ascriptive adjectives, e.g. *a friendly person*, *a criminal man*, *autumnal colour*. The example *criminal lawyer* can be ambiguous because the adjective *criminal* has both an associative and an ascriptive interpretation. The associative adjective *criminal* is entity-denoting, and *criminal lawyer* means ‘lawyer who is specialised in criminal

law'.⁶¹ When the associative adjective *criminal* undergoes a semantic shift and gains property-denoting semantics, it becomes an ascriptive adjective, and *criminal lawyer* has the meaning of 'crooked lawyer'. Under the ascriptive sense, in contrast to the associative one, *criminal* can be used predicatively and is compatible with *seem* predication (*The lawyer is/seems criminal*), *-ness* or *-ity* suffixation (*the criminality/criminalness of the lawyer*), and it is gradable (*The lawyer seems very criminal*).

Similarly, participles also have the capability and tendency to become ascriptive adjectives. For instance, *boring*, *interesting*, *amazing*, *tiring*, *tired*, *bored*, *excited*, *embarrassed* are ascriptive adjectives by default because of their tendency towards prototypicality. In *a boring movie*, *boring* is an ascriptive adjective which has undergone a semantic shift from the present participle *boring*, as in *The soap opera is boring me to tears*. Because of its property-denoting semantics, *boring* is compatible with *seem* predication and is gradable (*The movie seems very boring*), and it can be derived into a noun via *-ness* suffixation (*Words cannot describe its awful boringness*).

Negation enforces ascriptiveness on associative adjectives and participles. Adjectives without the negation prefix *un-* are not necessarily property-denoting, i.e. they can be associative adjectives or participles, whereas the negated counterparts must be property-denoting, e.g. *illegal*, *ungrammatical*, *unrelenting*, *unsmiling*, *uncooked*, and *unfed* are all ascriptive adjectives.

Because participles are derived from verbs and have a meaning that is directly derivative from the verbs, participles have the argument structure representation of the embedded verbs. Therefore, AdjPs headed by participles have the internal structure of VPs. For instance, in *The movie is boring me to tears*, the participle *boring* takes a direct object and keeps the structure of the fixed expression 'bore someone to tears'. After the semantic shift, *boring* becomes an ascriptive adjective and thus does not denote an event. Therefore it has no argument structure, e.g. in *The movie is boring*.

⁶¹ Note that the common/default interpretation of *criminal lawyer* is associative. The reason is that ascriptiveness is the default interpretation for Adj-Ns, and that associativeness is a more specific and hence non-default interpretation, then the associative Adj-N must be generated before the ascriptive alternative is; and if it arises, it will block the latter interpretation (Giegerich 2005). This ordering is predicted by the Elsewhere Condition (Giegerich 2001; Kiparsky 1982).

In summary, associative adjectives and participles are adjectives with parallel defects. They lack the features of ascriptive adjectives because of their subcategory semantics. Meanwhile, associative adjectives and participles have the ability and tendency to undergo a semantic shift and gain property-denoting semantics, therefore becoming ascriptive adjectives. Once they become ascriptive adjectives, they also obtain the features of ascriptive adjectives.

6.4. The morphology of participles and adjectives

From the perspective of morphology, multiple phenomena support the analysis of participles as being adjectives. Firstly, participles being adjectives explains the categorial status of adjectives with *un-* negation whose unprefix part is a participle and compound adjectives in which the righthand constituent is a participle, as discussed in section 6.2.2. Secondly, this analysis provides a consistent explanation for the morphology of prototypical adjectives that are identical in form to participles.

If we were to draw a categorial distinction between participles and adjectives, analysing participles as inflected forms of verbs, there does not seem to be a plausible single morphological explanation for all adjectives that are in the form of participles to arise in the system. Chapter 5 has discussed three possible analyses, under the assumption that participles are inflected verb forms. First, the adjectives are derived from verbs via *-ed*, *-ing* suffixation. Second, the adjectives are converted from the corresponding participles. Third, the participles are historically lexicalised into adjectives. There are problems with each analysis.

6.4.1. Participles are adjectives derived from verbs

Assuming participles are not adjectives but inflected forms of verbs, if we say that *-ing*, *-ed* (apart from being inflectional for participles) are derivational suffixes deriving adjectives, such as *interesting*, *boring*, *tired*, *excited*, then that does not explain adjectives such as *drunk*, *lost*, *broken*, *hurt*, which do not have the suffix. If we say that *drunk*, *lost*, *broken*, *hurt* are conversions of irregular participles into adjectives, then that does not explain all V-*ing* and V-*ed* adjectives, because conversion, as a derivational process, cannot operate on regularly inflected forms

(Kiparsky 1982: 5). Individual diachronic lexicalisation of participles into adjectives seems to be the only answer, but for that, the phenomenon is too widespread, too unified, and too predictable. The analysis of participles belonging to the category of adjectives solves this morphological problem.

Both participles and the corresponding ascriptive adjectives are derived from verbs. There is a semantic difference between event denotation and property denotation, and a matter of semantic shift towards prototypicality. For instance, the verb *charm* can be derived into the adjective *charming*, either event-denoting (e.g. *The boy is charming the audience*) or property-denoting (e.g. *The boy is very charming*). However, the adjective *drinking*, which is also derived from the verb *drink*, is only a present participle, denoting an event, because *drinking* does not have property denotation. The cases of individual lexicalisation, such as *drunk*, also fit the analysis. The participle *drunk* denotes an event (e.g. *The wine was drunk by Mary*), and the ascriptive adjective *drunk* denotes a property (e.g. *Mary was drunk by lunchtime*).

Some participles can undergo a semantic shift and gain property-denoting semantics, and they tend to become prototypical adjectives. Adjectives such as *amazing*, *boring*, *charming*, *interesting*, *relaxing*, *disappointed*, *embarrassed*, *exhausted*, *tired*, *drunk* are examples of participles undergoing a semantic shift and becoming ascriptive adjectives; they are used as ascriptive adjectives by default rather than as participles because of their tendency towards prototypicality.

Additionally, the analysis of participles as being adjectives is compatible with the morphology of N-*ed* adjectives. We can simply analyse *-ed* to be an adjective-forming derivational suffix, which attaches to verbs and derives adjectives, including participles (e.g. *The chicken was cooked by Mary*, *The money was donated to the school*), and ascriptive adjectives (e.g. *The boy was very tired*, *The child seems bored*). N-*ed* adjectives (e.g. *bearded*, *feathered*, *gifted*), alongside V-*ed* adjectives, can be treated as occasional violations of the unitary base hypothesis.

6.4.2. Summary of the derivational suffixes *-ing* and *-ed*

There are two derivational suffixes *-ing*: an adjective-forming suffix *-ing* and a noun-forming suffix *-ing*. There is one derivational suffix *-ed*⁶², and it is an adjective-forming suffix.

The adjective-forming suffix *-ing* attaches to verbs and derives adjectives, denoting either events or properties. The event-denoting V-*ing* adjectives are present participles (e.g. *a running man*, *He is writing a book*, *He is charming the audience*). The property-denoting V-*ing* adjectives are ascriptive adjectives (e.g. *a boring story*, *The story is interesting*, *He is charming*).

Similarly, the adjective-forming suffix *-ed* attaches to verbs and derives adjectives, denoting either events or properties. The event-denoting V-*ed* adjectives are past participles (e.g. *The movie was played on Monday morning*, *The chicken was cooked by Mary*, *His credit card has expired*). The property-denoting V-*ed* adjectives are ascriptive adjectives (e.g. *a tired boy*, *The boy is bored*, *His credit card is expired*).

The suffix of event-denoting adjectives, i.e. participles, is semantically empty, which is similar to the suffix of derived associative adjectives, adding nothing to the semantics of the embedded noun (Kastovsky 1982; Levi 1978; Warren 1984). The suffix *-ing* or *-ed* adds nothing to the semantics of the embedded verb. The semantics of participles is not provided by their morphology, i.e. the derivational suffix, but instead originate in the embedded verbs, denoting events.⁶³ Participles, the event-denoting adjectives, can undergo a semantic shift and gain property-denoting semantics, therefore becoming ascriptive adjectives. Ascriptive V-*ing* or V-*ed* adjectives, unlike the corresponding participles, do not denote events but properties, compare *He is charming the audience* and *He is charming*, *Your credit card has expired* and *Your credit card seems expired*.

The second derivational suffix *-ing* attaches to verbs and derives nouns. If the derived V-*ing* nouns have a meaning that is directly derivative from the embedded

⁶² Note that *-ed* can also be an inflectional suffix, and the V-*ed* forms are past tense form of verbs.

⁶³ Typically, derived adjectives are formed by combining a stem with a derivational suffix that has property denotation, e.g. *hate* – *hateful*, *act* – *active*, etc. Participles and ascriptive adjectives can be distinguished by the fact that the former are event-denoting, the latter property-denoting. I argue that the property denotation is encoded in the derivational suffixes *-ing* and *-ed*, whereas the suffixes in participles *-ing* and *-ed* have no such property denotation; the event denotation comes from the embedded verbs.

verbs, describing events, they are either gerunds (e.g. *Drinking water regularly is healthy*, *Building the bridge took three years*) or associated V-ing nominals (e.g. *The regular drinking of water is healthy*, *The gathering of ideas for the project took a month*). If the derived V-ing nouns do not have a meaning that is directly derivative from the embedded verbs, they are lexical V-ing nouns, denoting entities (e.g. *a tall building*, *several paintings*, *Our annual gathering takes place in London next year*). The lexical V-ing nouns are individually lexicalised in the history of English.

The suffix of gerunds and associated V-ing nominals is semantically empty. It adds nothing to the semantics of the embedded verbs. The semantics of gerunds and associated V-ing nominals is not provided by their morphology, i.e. the derivational suffix, but instead originate in the embedded verbs, describing events. In contrast, the suffix of lexical V-ing nouns is not semantically empty; the suffix denotes the entity that is to some extent related to the embedded verbs. The lexical V-ing nouns and the corresponding associated V-ing nominals have different denotations, compare *The building of the bridge took three years* and *a tall building*, *The saving of such a big amount of money is hard* and *He put all his savings to the stock market*.

Adjectives prototypically denote properties, and nouns prototypically denote entities. Therefore, V-ing or V-ed adjectives such as *interesting*, *boring*, *charming*, *bored*, *tired*, *excited* are ascriptive adjectives by default, rather than the participles; V-ing nouns such as *building*, *feeling*, *finding*, *funding*, *meeting* are the lexical nouns by default, rather than the associated V-ing nominals or the gerunds.

6.5. Summary

This chapter has reconsidered and analysed the categorial status of participles. I have shown that there is no distributional distinction between participles and adjectives, and therefore proposed that participles belong to the category of adjectives, though participles are indeed different from prototypical adjectives in specific ways.

I have analysed the distinction between participles and prototypical adjectives. The differences that distinguish participles and prototypical adjectives from each other are due to the fact that they have different semantics. Participles are event-denoting, whereas prototypical adjectives are property-denoting. However, semantic difference

does not entail a difference that distinguishes categories. Besides, there is a striking similarity between associative adjectives and participles. Unlike prototypical adjectives, participles and associative adjectives are not compatible with *seem* complementation, degree adverb modification, comparative/superlative forms, *-ness* suffixation and *un-* negation. The features that participles and associative adjectives lack are available not to adjectives in general but a specific type of adjectives – ascriptive adjectives; and these features are connected with the property denotation of ascriptive adjectives. This similarity supports my argument that the differences are purely semantic and are not in conflict with the analysis of participles belonging to the category of adjectives. In addition, both associative adjectives and participles can undergo a semantic shift, and then gain property-denoting semantics. The symmetry captures a remarkable property of syncretism between a large class of prototypical adjectives (e.g. *charming, boring, bored, cooked, drunk*) and the class of participles.

This chapter has also solved the morphological problem in chapter 4. If participles and adjectives were separate categories, participles being assumed inflected verb forms, there is no morphological analysis that explains the formation of adjectives that are identical in form to participles in a satisfactory manner, including derivational *-ing* and *-ed* suffixation, conversion from participles, and individual diachronic lexicalisation. However, analysing participles as adjectives that are derived from verbs provides a consistent explanation. Under this analysis, the distinction between participles and the corresponding prototypical adjectives is merely a semantic difference between event-denotation and property-denotation, and a matter of a semantic shift towards prototypicality.

From the perspective of morphology in general, the analysis of participles being adjectives explains the categorial status of adjectives negated via *un-* whose unprefixed part is a participle and adjective compounds whose righthand constituent is a participle, since both *un-* negation and compounding preserve the category of the head. Besides, the analysis is supported by the morphology of adjectives that are identical in form to participles.

My argument that the main distinction between participles and prototypical adjectives is of a semantic nature can also be applied to German. The semantic shift from event denotation to property denotation can also be found in German adjectives.

Prototypical adjectives that are identical in form to participles have property-denoting semantics, for example, *überzeugend* ‘convincing’ – *überzeugen* ‘to convince’, *dringend* ‘urgent, pressing’ – *dringen* ‘to urge sth’, *verschwiegen* ‘discreet, concealed’ – *verschweigen* ‘to conceal’, etc. The property-denoting adjectives that are of the participle form have the features of prototypical adjectives, in contrast to participles, which are event-denoting. Compare **das sehr schlafende Kind* ‘*the very sleeping child’ and *eine sehr überzeugende Argumentation* ‘a very convincing argument’.

Chapter 7. Distinguishing gerunds from present participles

In previous chapters, I have discussed several types of *V-ing* forms, analysing their syntactic distribution and morphology. *V-ing* forms can be realised as different lexical categories, from deverbal nouns⁶⁴ (e.g. *His rapid writing of the book astonished us.*) to deverbal prototypical adjectives (e.g. *extremely interesting, very boring*). Among these categories, it is nontrivial to decide the categorial status of gerunds and present participles and to distinguish them from each other. Both gerunds and present participles are in the form of *V-ing*, and phrases headed by both of them have the internal structure of VPs. Also, gerunds and present participles can appear in similar combinations, for instance, compare *The kids discussed visiting their grandmother* and *The kids kept visiting their grandmother*. Because of their being superficially identical, Huddleston & Pullum (2002) conflate gerunds and present participles into one inflectional form of the verb marked by the suffix *-ing* and call it ‘gerund-participle’. However, if gerunds and present participles were a single category, how should we handle the significant differences between them, which have been discussed in chapters 3 – 6? Besides, if ‘gerund-participle’ were one single category, where should we group past participles, which have the same distribution as present participles, as discussed in chapters 4 and 6?

Chapters 3 and 4 discuss the distribution of gerunds and participles, respectively; chapter 5 discusses their morphology; chapter 6 analyses the categorial status of participles. This chapter aims to distinguish gerunds and present participles from each other by comparing their syntactic distribution. I will argue that gerunds and present participles do not belong to the same category, because they are different in syntactic distribution, i.e. there is a categorial distinction between them. Therefore, gerunds and participles belong to separate categories and cannot be conflated into a single category of ‘gerund-participle’.

⁶⁴ There are also lexical nouns in the form of *V-ing*, such as *a tall building, a long meeting, two nice paintings*, etc., but this is not the focus of this thesis, and will not be discussed here.

7.1. Introduction

Although gerunds and present participles are identical in form, they differ in syntactic distribution – gerunds have the distribution of nouns, whereas present participles have the distribution of adjectives. Phrases headed by gerunds and phrases headed by present participles both have the internal structure of VPs, but their syntactic functions are different. Phrases headed by gerunds are NPs, whereas phrases headed by participle are AdjPs. Thus, there is a categorial distinction between them. Gerunds belong to the category of nouns (but also inherit selectional features from the category of relationals, a supercategory which includes gerunds, adjectives and verbs). Present participles belong to the category of adjectives.

Gerunds are traditionally seen as verbal nouns, meaning that their internal syntax is that of a VP, and their external syntax is that of an NP (Declerck 1991; Heyvaert 2003; Hudson 2007: Ch.4; Jespersen 1940; Lees 1966; Ross 1972). Present participles can occupy the adverbial and adjectival position (Declerck 1991; Jespersen 1940; Kortmann 1995) and are thus distinct from gerunds. The traditional treatment of gerunds and present participles is compatible with the historical analysis.

As briefly introduced in section 1.3, gerunds and present participles are originally different categories. Gerunds have the suffix *-ung/ing* in Old English and present participles have the suffix *-ende* in Old English. Before gerunds and present participles were merged to *V-ing* around 1200, they still belong to different categories not only because of different morphology and phonology but also because of different functions and characteristics. While the gerund is a pure noun in its origin, its verbal behaviour is manifested in various grammatical properties. Notably, their acquisition of the ability to be distinguished in aspect and voice represents a further approximation to a completely verbal nature (Jespersen 1978: 185; Kisbye 1971: 59; Mustanoja 1960: 573). A major distinctive feature of present participles is their nature as being either verbal or adjectival. However, a process of restriction can be generated by continual adjectival use of a form, resulting in the participle becoming an adjective proper (Callaway 1901: 141-142). Callaway's treatment of the appositive participles (Callaway 1901) and the absolute participles in Anglo-Saxon (Callaway 1889) is valuable and helpful in seeing that present participles are considered in its original state as being clearly separated from gerunds. In Older

Scots, there also exists a distinction in surface forms between gerunds and present participles – gerunds end in *-ing*, whereas present participles end in *-and*.

Historically, gerunds and present participles have different sources, but in Modern English, the forms are identical. Huddleston & Pullum (2002) claim that no verb shows any difference in form between the constructions with a gerund (e.g. *Destroying the files was a serious mistake.*) and with a present participle (e.g. *The train to Bath is now approaching Platform 3.*). The historical difference is of no relevance to the analysis of the current inflectional system (Huddleston 2002b: 80-82). Huddleston & Pullum (2002) state that concerning inflection, no verb inflectionally distinguishes between gerunds and participles, thus the inflectional suffix *-ing* added to the verb stem is formally the same for gerunds and present participles. Therefore, Huddleston & Pullum (2002) oppose the traditional position, arguing that gerunds and present participles can be conflated into a single category of ‘gerund-participle’. Huddleston & Pullum (2002) also argue that “from a purely syntactic point of view no viable distinction can be drawn between the bracketed clauses in [i] and those in [ii]: we refer them all as gerund-participial clauses”.

“i. [gerund]

- a. [Inviting the twins] was a bad mistake.
- b. We are thinking of [giving them one more chance].
- c. I remember [seeing them together]
- d. She found [talking to Pat] surprisingly stressful.

ii. [present participle]

- a. Those [living alone] are most at risk.
- b. [Not having read his book,] I can’t comment.
- c. She is [mowing the lawn].
- d. We saw him [leaving the post office].
- e. I caught them [reading my mail].”

(Huddleston 2002a: 1220)

I will show in this chapter that, also from a syntactic point of view, gerunds, as shown in the [i], and present participles, as shown in [ii], can be distinguished from each other. Despite the formal similarity between gerunds and participles or between phrases headed by gerunds and phrases headed by present participles, there is a distributional difference between gerunds and present participles, because the syntactic functions of phrases headed by gerunds are distinct from the syntactic functions of phrases headed by present participles. Gerunds have the distribution of

nouns, since phrases headed by gerunds occur in positions that allow NPs; in contrast, present participles have the distribution of adjectives, since phrases headed by present participles occur in positions that allow AdjPs. Therefore, we have diagnostics to distinguish whether a *V-ing* form is a gerund or a present participle. Some positions are unambiguously for NPs, which means that the *V-ing* form must be a gerund, some positions allow only AdjPs, which means that the *V-ing* form must be a present participle. There are also ambiguous cases, where the *V-ing* form can be either a gerund or a present participle, depending on how it is interpreted. The suspended contrast is accompanied with syntactic and semantic differences, which supports my argument that gerunds and present participles are distinct.

In previous chapters, gerunds have been contrasted with associated *V-ing* nominals, which are common nouns derived from verbs; participles have been contrasted with prototypical adjectives, which have property-denoting semantics.

Both gerunds and associated *V-ing* nominals have the distribution of nouns and thus belong to the category of nouns. Both of them are nouns derived from verbs and have a meaning directly derivative from the verbs. However, there is a structural difference between phrases headed by them. The internal structure of phrases headed by associated *V-ing* nominals is that of ordinary NPs, like other NPs headed by common nouns. In contrast, phrases headed by gerunds have the internal structure of VPs. I have explained in chapter 3 that gerunds belong to the category of nouns and also inherit selection features from relationals. Gerunds inherit their syntactic distribution from nouns, and thus they are categorially nouns. Gerunds, like associated *V-ing* nominals, are derived from verbs and describe events and thus have argument structure representation. However, nouns are not theta-markers, thus associated *V-ing* nominals cannot theta-mark on their own. Associated *V-ing* nominals can only take NP complements with the help of a preposition (e.g. *His dangerous driving of the car made us nervous*). Gerunds, additionally, inherit selectional features from relationals, that is why gerunds are theta-markers and are modified by adverbs. So gerunds can theta-mark all the arguments on their own, and phrases headed by gerunds have the internal structure of VPs (e.g. *His driving the car dangerously made us nervous*). Therefore, the VP structure of phrases headed by gerunds is not in conflict with the syntactic distribution of gerunds, i.e. that gerunds belong to the category of nouns.

Present participles have the distribution of adjectives and thus belong to the category of adjectives, though participles are different from prototypical adjectives in specific ways. I have explained in chapter 6 that the distinction between participles and prototypical adjectives is due to their different semantics. Thus there is no distributional distinction between them. Prototypical adjectives have property-denoting semantics, whereas participles have event-denoting semantics. Participles lack the features of prototypical adjectives. The features are related to the property denotation of prototypical adjectives. Phrases headed by participles have the internal structure of VPs because participles are adjectives derived from verbs and have a meaning that is directly derivative from the verbs. Adjectives are theta-markers, and thus participles are theta-markers; participles are derived from verbs and denote events, and thus participles have argument structure representation. Therefore, participles, like their embedded verbs, can theta-mark all the arguments, i.e. phrases headed by participles have the internal structure of VPs. If an adjective is not derived from a verb, or a deverbal adjective does not have a meaning that is directly derivative from the embedded verb, that adjective does not have argument structure representation, and thus the AdjP does not have the internal structure of VPs (compare *He is charming the audience* and **He is happy the audience*). The phrase headed by the ascriptive adjective *charming* (e.g. *He is charming*) does not have the internal structure of VPs, because property-denoting adjectives do not have argument structure representation, even though the ascriptive adjective *charming* is also derived from the verb. The point is that the VP structure of phrases headed by participles is not in conflict with the analysis of participles being adjectives.

In summary, although both gerunds and present participles are in the form of *V-ing*, they belong to separate categories, because they have distinct syntactic distribution. Gerunds have the distribution of nouns and belong to the category of nouns, whereas present participles have the distribution of adjectives and belong to the category of adjectives. Although phrases headed by gerunds and phrases headed by present participles both have the internal structure of VPs, this does not make them the same category. Besides, the explanation for the internal VP structure of phrases headed by gerunds is different from that of phrases headed present participles. Both gerunds and present participles are derived from verbs and have a meaning directly derivative from the verbs; thus, they have argument structure representation of the embedded

verbs. However, the reason that participles are theta-markers and are modified by adverbs is that they belong to the category of adjectives; whereas the reason that gerunds are theta-markers and are modified by adverbs is that they inherit selectional features from relationals.

7.2. Simple cases

There are clear-cut cases where we can tell whether a *V-ing* form is a gerund or a present participle. There are syntactic proofs for the distinction because certain positions in a sentence or certain combinations only allow gerunds, not present participles, and the other way around. Gerunds are nouns, in that phrases headed by gerunds can occur in argument positions or other positions that allow NPs, such as subjects, objects, complements of prepositions, whereas phrases headed by present participles cannot. Present participles are adjectives, because phrases headed by present participles, like other AdjPs, can function as modifiers of nouns, modifiers of clauses, predicative complements, whereas phrases headed by gerunds cannot.

Huddleston & Pullum's (2002) argument for a single category of 'gerund-participle' is that gerunds and participles are in complementary distribution. However, both gerunds and present participles can follow the verb *be*. For instance, a) *His hobby is playing the piano* (gerund) and b) *His brother is playing the piano* (present participle). This parallel then undermines complementarity, and thus participles and gerunds being in the complementary distribution is a non-argument. Note that in a), *his hobby* is in the category denoted by *playing the piano*, and in b), *his brother* is the agent of *playing the piano*. Therefore gerunds and present participles must be in different categories. The structures of the two *be* + *V-ing* combinations are actually different, which will be analysed in section 7.2.3.

7.2.1. Gerunds only

Gerunds have the distribution of nouns. Phrases headed by gerunds, like other NPs, can function as the subject of a sentence. If a phrase headed by a *V-ing* form functions as the subject of a sentence, *V-ing* is a gerund, not a present participle.⁶⁵

(1)

- a. Playing the piano is his hobby.
- b. Drinking water regularly is good for your health.
- c. Fiona's telling lies upset her boyfriend.

NPs headed by gerunds can function as the direct object or the indirect object. Phrases headed by gerunds as the direct object must be distinguished from phrases headed by present participles as the predicative complement of aspectual verbs, although they have the superficially same combination Verb + *V-ing*. Section 7.3 provides a detailed analysis.

If a phrase headed by a *V-ing* form functions as the direct object that takes an object complement, as examples in (2), or the indirect object of a ditransitive verb, as examples in (3), the *V-ing* form is a gerund. The gerund status of the *V-ing* form is evident because the phrase that *V-ing* heads is in the argument position. It can be tested by passivisation, *it*-clefting, etc., which illustrates the distributional difference between gerunds and present participles. Phrases headed by gerunds are NPs, thus can be passivised, undergo *it*-clefting, whereas phrases headed by present participles cannot.

(2)

- a. The situation made obtaining a loan virtually impossible.
Obtaining a loan was made virtually impossible.
It is obtaining a loan that the situation made virtually impossible.
- b. Tom considered solving this problem his priority.
Solving this problem was considered Tom's priority.
It is solving this problem that Tom considered his priority.

⁶⁵ *Flying planes can be dangerous* is ambiguous. *Flying* can either be a gerund or a present participle. It is easy to disambiguate, because the head of the subject is different. When *flying* is analysed as a gerund, the gerund is head of the subject NP, and *planes* is the direct object of the gerund; when *flying* is analysed as a present participle, *planes* is the head of the subject NP, and *flying* is the attributive modifier of the head noun *planes*.

(3)

- a. She gives playing the piano all her energy and time.

Playing the piano is given all her energy and time.

It is playing the piano that she gives all her energy and time.

- b. We have given moving to Sydney a great deal of thought.

Moving to Sydney has been given a great deal of thought.

It is moving to Sydney that we have given a great deal of thought.

NPs headed by gerunds can function as the complement of prepositions. The prepositional phrase can either function as a complement (as in 4a-c) or an adjunct (as in 4d-e). The *V-ing* form following a preposition is a gerund, not a present participle, because prepositions require an NP complement.

(4)

- a. We should concentrate on solving the problem.

- b. She is good at playing the piano.

- c. Can we depend on him coming in on Sunday?

- d. He went home before finishing his work yesterday.

- e. We should have breakfast before going to school.

7.2.2. Present participles only

Like other adjectives, present participles can head phrases that function as modifiers of clauses, whereas gerunds, which have the distribution of nouns, cannot. If a phrase headed by a *V-ing* form modifies a clause, *V-ing* is a present participle.

(5)

- a. Driving home after work, I accidentally ran a red light.

- b. Standing on the chair, he can touch the ceiling.

- c. Having won the match, Susan jumped for joy.

- d. Having taken the wrong train, Lucia found herself in Stirling, not in Glasgow.

Phrases headed by present participles can modify nouns, either as postmodifiers or premodifiers. If a phrase headed by a *V-ing* form functions as a postmodifier of a noun, *V-ing* can either be an ascriptive *V-ing* adjective, e.g. *We will figure out*

something interesting, *It is hard to find someone really charming*, or a present participle, e.g. *The girl sitting next to Tom is my sister*, *We have to look for someone carrying an umbrella*. If a V-ing form modifies a noun attributively, it can either be an ascriptive V-ing adjective, e.g. *an interesting story*, *a boring movie*, *a tiring journey*, *exciting news*, or a present participle, e.g. *falling leaves*, *boiling water*, *sparkling water*, *sleeping baby*. How to distinguish present participles from ascriptive V-ing adjectives has been discussed in chapters 4 and 6. There is a third possibility of a V-ing form modifying nouns attributively, namely compounds such as *drinking water*, *washing machine*, *baking powder*, *sleeping pill*. However, such a V-ing form has the distribution of nouns, as we can see that *drinking water* is ‘water for drinking’, not ‘water that drinks/is drinking’. Whether V-ing as the first constituent of such associative compounds is a gerund or an associated V-ing nominal needs further analysis, which is performed in chapter 8.

Present participles can follow predicatively used ascriptive adjectives, and the phrase headed by the present participle functions as the adjective’s complement. Phrases headed by gerunds are NPs and do not have this function, because predicatively used ascriptive adjectives cannot take an NP complement⁶⁶, e.g. **Peter was busy all these letters*, **I am happy the audience*.

(6)

- a. Peter was busy writing letters.
- b. We are fortunate having aunt Daisy as our babysitter.
- c. What will happen if we are late paying taxes?
- d. He felt awful doing that.

Present participles can also follow certain verbs of broad meaning in respect of posture or motion, such as *sit*, *stand*, *come*, *go*, with the phrase headed by the participle functioning as the depictive complement. The matrix verbs are intransitive verbs. Therefore, the following V-ing form cannot be a gerund, heading a phrase as the direct object.

(7)

- a. He stood waiting patiently.

⁶⁶ There are exceptions, such as the ascriptive adjective *worth*. For instance, *This matter is worth our attention*, *The dessert is worth the calories*. Phrases headed by gerunds, like other NPs, can also be the complement of *worth*, e.g. *The movie is worth watching*.

- b. She came running in great haste.
- c. They went hurrying breathlessly.

7.2.3. *Be + V-ing*

Both gerunds and present participles can occur after the verb *be*; however, phrases headed by them have different functions. Phrases headed by gerunds that follow *be* function as the subject complement; whereas phrases headed by present participles that follow *be* function as the predicative complement of *be*, and the combination expresses the progressive aspect. Compare:

(8)

- a. My hobby is playing the piano.
- b. My son is playing the piano.
- c. My goal is changing every day.

In (8a), *playing the piano* equals *my hobby*, and *playing the piano* is an NP headed by a gerund, functioning as the subject complement. The NP headed by the gerund can be replaced by an NP headed by a common noun, proper noun or pronoun, e.g. *the dog* in *The fastest animal is the cheetah*, *Peter* in *The tallest student is Peter*, *him* in *The tallest student is him*. In (8b), *my son* is the agent of *playing the piano*, and *playing the piano* is an AdjP headed by a present participle, functioning as the predicative complement of *is*, and the sentence expresses the progressive aspect. The two sentences with *is playing the piano* are different in meaning and structure. The distributional difference between the two *playing* can be tested by reversing the sentence or asking a question. (8c) is ambiguous, whether *changing* is a gerund or a present participle depends on the interpretation of the sentence. One meaning is ‘my goal stays the same, which is that I want to change every day’, and *changing* is a gerund; the other meaning is ‘my goal does not stay the same, it keeps changing’, and *changing* is a present participle. The tests can disambiguate meaning.

(9)

- a. Playing the piano is my hobby.
- b. *Playing the piano is my son.
- c. Changing every day is my goal.

- (10)
- a. – What is your hobby?
– My hobby is playing the piano.
 - b. – *What is your son?
– My son is playing the piano.
 - c. – What is your goal?
– My goal is changing every day.

The NP *playing the piano* in (8a) is the subject complement of *is*. The subject *my hobby* equals *playing the piano*. Thus, the subject and the subject complement can be reversed, as shown in the reversed sentence (9a), in which the NP headed by the gerund functions as the subject of the sentence. In contrast, the AdjP *playing the piano* cannot be reversed, as in (9b). The subject *my son* does not equal *playing the piano*; the subject is the agent of the event/action, i.e. the person who plays the piano. Another test is the question targeting the phrase headed by the V-ing form. *My hobby is playing the piano* can be the answer of the question ‘What is your hobby?’; however, the question ‘What is your son?’ does not correspond to the answer *My son is playing the piano*, which should be the answer of ‘What is your son doing?’. The appropriate question contains a present participle *doing*, in combination with *is*, and the phrase functions as the predicative complement of *is*, with the construction expressing the progressive aspect. In (9c) and (10c), *changing* is unambiguously a gerund, because it is the NP *changing every day* that can be reversed to the subject position and be the answer of ‘What is your goal?’, not an AdjP.

The combination of *be* + V-ing is realised as two different structures, which correspond to the different syntactic distribution of gerunds and present participles. Phrases headed by gerunds that follow *be*, like other NPs that follow *be*, function as the subject complement, and they can be moved to the subject position. In contrast, phrases headed by present participles, like other AdjPs, function as the predicative complement of *be*, and the composition of the predicate verb *be* and the event-denoting semantics of present participles expresses the progressive aspect. A third type of V-ing form is ascriptive V-ing adjectives, with the AdjP also functioning as the predicative complement of *be*. The difference between *be* + present participle and *be* + ascriptive V-ing adjective is analysed in chapters 4 and 6. Present

participles are event-denoting, whereas ascriptive *V-ing* adjectives are property-denoting.

Huddleston & Pullum (2002: 1255-1256) do point out the difference between the two constructions by disambiguating the advertising slogan *Our business is working for you* – as a specifying construction, this identifies what *our business* is (‘working for you is our business’); with *be* a marker of progressive aspect, it says what *our business* is doing. Despite the distinction, both are analysed as ‘gerund-participle’ there.

7.3. Direct objects vs predicative complements

The combination of a verb (other than the verb *be*) and a directly following *V-ing* form can be realised as different constructions, depending on the predicate verb and the complementation. Since gerunds and present participles have different syntactic distributions, the status of the *V-ing* form that follows the predicate verb can be analysed.⁶⁷ If the phrase headed by a *V-ing* form functions as the direct object of transitive verbs, *V-ing* is a gerund; if the phrase headed by a *V-ing* form functions as the predicative complement of aspectual verbs, *V-ing* is a present participle.

7.3.1. The diagnostics for gerunds

Transitive verbs take a phrase headed by a gerund as their direct object. Aspectual verbs, which are subject raising intransitive verbs, take a phrase headed by a present participle as their predicative complement. The distributional difference between gerunds and present participles in the combination *V + V-ing* can be tested (Bresnan 2001: 267-301). Since phrases headed by gerunds are NPs and exhibit the syntactic behaviour of NPs, they can undergo a wide range of NP movements, whereas phrases headed by present participles cannot. Therefore, we can distinguish gerunds and present participles from each other when they directly follow a predicate verb, with the help of a series of syntactic tests. Let us see how the gerund *visiting* in *The*

⁶⁷ Ascriptive *V-ing* adjectives can also follow certain verbs (e.g. *get*, *appear*, *seem*, *look*, *sound*, etc.), with the AdjPs functioning as the predicative complement. This has been discussed in chapters 4 and 6; here we focus on the comparison of gerunds and present participles.

kids discussed visiting the museum is distinguished from the present participle *visiting* in *The kids kept visiting the museum*.

Firstly, phrases headed by gerunds, functioning as the direct object, can be passivised⁶⁸, whereas phrases headed by present participles, as the predicative complement, cannot.

(11)

- a. Visiting the museum was discussed (by the kids).
- b. *Visiting the museum was kept (by the kids).

Passivisation involves the alternation of the subject and the object. In *The kids discussed visiting the museum*, *visiting* is a gerund and the phrase *visiting the museum* is the direct object of the predicate verb *discussed*. In the passive sentence (11a), the phrase is passivised and occurs in the subject position. Phrases headed by gerunds have the same function as other NPs, such as NPs headed by common nouns, e.g. *The kids discussed the plan*, *The plan was discussed (by the kids)*. In contrast, the phrase headed by the present participle in (11b) *visiting the museum* cannot be passivised, which is the same as other AdjPs. Phrases headed by ascriptive adjectives that function as the predicative complement cannot be passivised, e.g. *The kids kept quiet when I told them stories* – **Quiet was kept by the kids when I told them stories*, *The kids look very sleepy* – **Very sleepy was looked by the kids*.

Phrases headed by gerunds can undergo *it*-clefting, whereas phrases headed by present participles cannot.

(12)

- a. It was visiting the museum that the kids discussed.
- b. *It was visiting the museum that the kids kept.

(12a) is parallel to the sentence with an NP headed by a common noun, e.g. *It was the plan that the kids discussed*. The verb *keep* can also be followed by an NP, and the NP can undergo *it*-clefting, e.g. *We kept the present*, *It was the present that we kept*. However, the *keep* that is followed by an NP is a transitive verb, not an

⁶⁸ There are transitive verbs that are excluded from the passivisation, even though they take an NP as the direct object, such as *resemble*, *fit*, *weigh*: *Mary resembles Rose* – **Rose is resembled by Mary*; *The dress fits her* – **She is fitted by the dress*; *That picnic basket weighs a ton* – **A ton is weighed by that picnic basket*. These are exceptions.

aspectual verb that takes phrases headed by present participles as the predicative complement. *Keep* + NP and *keep* + present participle are two different constructions and have different meanings. In the combination *keep* + NP, the NP is the direct object of the transitive verb *keep*, which means ‘retain the possession of’. The combination *keep* + present participle is a subject raising structure; the phrase headed by the present participle is the predicative complement of the aspectual verb *keep*, which names an event that occurs continuously or habitually. The analysis of present participles with aspectual verbs parallels that of other adjectives, such as ascriptive adjectives; the phrase headed by an ascriptive adjective can also function as the predicative complement, and cannot undergo *it*-clefting. For example, *The kids must keep quiet* – **It is quiet that the kids must keep*, *The kids look very sleepy* – **It is very sleepy that the kids look*.

Phrases headed by gerunds can undergo “*tough*-movement”, whereas phrases headed by present participles cannot.

(13)

- a. Visiting the museum was pleasant for the kids to discuss.
- b. *Visiting the museum was pleasant for the kids to keep.

NPs allow “*tough*-movement”. Compare (13a) and a sentence with an NP headed by a common noun, e.g. *This topic is pleasant for us to discuss*. The phrase headed by the present participle does not allow such NP movement, as shown in (13b). Similarly, when a phrase headed by a present participle functions as the predicative complement of *be*, the sentence that expresses the progressive aspect *The kids were visiting the museum* cannot generate **Visiting the museum was pleasant for the kids to be*. Again, AdjPs headed by ascriptive adjectives are not available for such movement either, e.g. *The kids looked sleepy* cannot generate **Sleepy was pleasant for the kids to look*, and *The kids kept quiet* cannot generate **Quiet was difficult for the kids to keep*.

Phrases headed by gerunds can be topicalised, whereas phrases headed by present participles cannot.

(14)

- a. Visiting the museum, the kids have discussed.
- b. *Visiting the museum, the kids have kept.

(15)

- a. Visiting the museum, the kids have discussed it.
- b. *Visiting the museum, the kids have kept it.

In addition, the phrase headed by the gerund *visiting* can be substituted by the pronoun *it*, but such substitution does not work for present participles. The ungrammaticality of the sentence **Sleepy, the kids look (it)* illustrates that present participles and ascriptive adjectives are alike.

Gerunds permit a genitive subject, whereas present participles do not.

(16)

- a. The kids discussed their visiting the museum.
- b. *The kids kept their visiting the museum.

If *visiting* is a gerund, the phrase *visiting the museum* can follow a genitive subject. Here, *their* refers to the matrix subject *the kids*. There are also cases where the genitive subject of the gerund is not identical to the matrix subject, e.g. *We discussed his visiting us*. Present participles do not allow a genitive subject, neither when the subject is identical to the matrix subject as in (16b), nor when the subject is someone else, e.g. **We kept his visiting us*. Similarly, ascriptive adjectives are not compatible with a genitive subject, e.g. **The kids kept their quiet*, **The kids look their sleepy*. There is another movement that is related to the genitive subject. Phrases headed by gerunds can be fronted in the question formation, but phrases headed by present participles cannot.

(17)

- a. Whose visiting the museum did the kids discuss?
- b. *Whose visiting the museum did the kids keep?

Furthermore, phrases headed by gerunds can undergo pseudo-clefting without *doing*, but phrases headed by present participles cannot.

(18)

- a. What the kids discussed was visiting the museum.
- b. *What the kids kept was visiting the museum.
- c. What the kids discussed/kept doing was visiting the museum.

Gerunds are immune to the *V-ing + V-ing* constraint, whereas present participles are not.

(19)

- a. The kids were discussing visiting the museum.
- b. *The kids were keeping visiting the museum.

In (19b) both *V-ing* forms are present participles. *Keeping* follows the predicate verb *were*, and the phrase headed by *keeping* functions as its predicative complement; and the combination expresses the progressive aspect. *Visiting* follows the present participle *keeping*, whose embedded verb is the aspectual verb *keep*, and the phrase *visiting the museum* functions as the predicative complement of *keeping*. The combination of two present participles is ill-formed, e.g. **The kids were being visiting the museum*, **Anyone being being sassy will be horsewhipped*.

According to Ross (1972) and Bresnan (2001), the *V-ing + V-ing* constraint is a type of ungrammaticality resulting from the presence in the surface structure of contiguous occurrences of participle *V-ing*. However, Pullum & Zwicky (1998: 259) find examples of sequences of contiguous *V-ing* forms that do not invoke Ross's Double-*ing* filter, i.e. some combinations of two present participles are not ill-formed. For instance, stacked premodifier (e.g. *There are many biting flying insects in the summer*), aspectual complement before premodifier (e.g. *Waldo keeps molesting sleeping gorillas*), etc. Therefore, it must be emphasised that the *V-ing + V-ing* constraint is not simply about the combination of one *V-ing* form following another, but a restriction on the construction, that is, whether the phrase headed by the second *V-ing* can function as the complement of the first *V-ing*, either as the predicative complement (AdjP) or as the direct object (NP). Let us discuss the four possibilities of combination.

(20) gerund +gerund

- a. Discussing travelling to Europe is fun.
- b. Enjoying drinking alone is not sad.
- c. We understood his avoiding contacting Mary.
- d. We enjoy celebrating winning the competition.

The examples in (20) show the combination of two gerunds, where the phrase headed by the second gerund functions as the direct object of the first gerund. The

phrase headed by the first gerund functions as an argument of the sentence – as the subject in (20a, b,) and as the direct object in (20c,d) – illustrating that gerunds have the distribution of nouns. Within the phrase headed by the first gerund, the phrase headed by the second gerund functions as its direct object, which illustrates that phrases headed by gerunds have the internal structure of VPs.

- (21) gerund + participle⁶⁹
- a. Keeping practising regularly is important.
 - b. Starting learning a new language is not easy.
 - c. They discussed starting running a new experiment.
 - d. The doctor suggests keeping drinking water after the operation.

The examples in (21) show the combination of a gerund followed by a present participle, where the phrase headed by the present participle functions as the predicative complement of the gerund. The phrase headed by the gerund functions as the subject of the sentence (21a, b) or the direct object (21c, d), which illustrates its distribution of nouns. The embedded verbs of the gerunds in the examples are aspectual verbs which take phrases headed by present participles as the predicative complement. The phrase headed by the present participle following the gerund functions as its predicative complement, which illustrates the VPs structure of phrases headed by gerunds and the adjectival distribution of present participles.

- (22) participle + gerund
- a. We were celebrating winning the competition.
 - b. We kept discussing travelling to Europe.
 - c. Disliking drinking vodka alone, Hank reached for the phone.
 - d. The person suggesting going out for a drink is Mary's boyfriend.

The examples in (22) show the combination of a present participle followed by a gerund, where the phrase headed by the gerund functions as the direct object of the present participle. In (22a), the phrase headed by the present participle *celebrating* functions as the predicative complement of the verb *were*, and the combination expresses the progressive aspect; within the phrase headed by the present participle, the direct object is the phrase *winning the competition*, which is headed by the

⁶⁹ The examples in (21) are controversial. English native speakers have different judgment of their grammaticality.

gerund *winning*. In (22b), the phrase headed by the present participle functions as the predicative complement of the aspectual verb *kept*; within that phrase, *travelling to Europe*, which is a phrase headed by the gerund *travelling*, functions as the direct object of the present participle *discussing*. In (22c), the phrase headed by the present participle *disliking* modifies a clause; within that phrase, *drinking vodka alone*, which is a phrase headed by the gerund *drinking*, functions as the direct object of *disliking*. In (22d), the phrase headed by the present participle *suggesting* functions as the postmodifier of a noun, and the present participle is followed by *going out for a drink*, which is a phrase headed by a gerund, functioning as its direct object.

- (23) participle + participle
- a. *I am being eating chocolate.
 - b. *We were keeping travelling to Europe.
 - c. *He is stopping talking.
 - d. *Mary is starting learning Chinese.

The examples in (23) are all ungrammatical, illustrating that a phrase headed by a present participle cannot function as the predicative complement of another predicatively used present participle. I suggest that the reason for this constraint is based on the semantics of present participles as a predicative complement, which expresses an aspectual meaning. The two subsequent present participles express aspects that are either redundant (23a) or contradictory (23b-d)

Therefore, the *V-ing + V-ing* constraint is on the constructions with two present participles, where the second present participle functions as the predicative complement of the first present participle, and the phrase headed by the first present participle functions as the predicative complement of the matrix verb. We can have a phrase headed by a gerund functioning as the direct object of another gerund, a phrase headed by a present participle functioning as the predicative complement of a gerund, and a phrase headed by a gerund functioning as the direct object of a present participle. There are counter-examples, both from Ross (1972: 68-69):

- (24)
- a. *I'm not particularly keen on trying kissing this moray eel.
 - b. *I was attempting playing the "Minute Waltz" with my nose.

The ungrammaticality of the examples indicates that they are constrained from V-*ing* + V-*ing*. However, neither of them is a case where the phrase headed by the second present participle functions as the predicative complement of the first present participle. In (24a), *trying* is a gerund, heading a phrase that functions as the prepositional object; *kissing this moray eel* is another phrase headed by a gerund, functioning as the direct object of the first gerund. The gerund status of *kissing* can be proved by the other diagnostics of NPs, such as topicalisation – *Kissing this moray eel, I am not particularly keen on trying*. In (24b), *attempting* is a present participle, heading a phrase that functions as the predicative complement of *was*, and the combination expresses the progressive aspect; the following V-*ing* form is a gerund, heading a phrase that functions as the direct object of *attempting*. The gerund status of *playing* can be tested by pseudo-clefting – *What I was attempting was playing “Minute Waltz” with my nose*. These examples are exceptions. The ungrammaticality is not because of the V-*ing* + V-*ing* constraint, but might be due to additional constraints on the verbs *attempt* and *try*.

Pullum & Zwicky (1998) do emphasise that the Doubl-*ing* constraint is, in fact, a syntactic, not a morphological or phonological one. They separate the verbal inflectional suffix *-ing* from the derivational adjective-forming suffix (e.g. *charming, fascinating, disgusting*), noun-forming suffix (e.g. *building, drinking, meeting, towelling, sweetening*), or prepositional-forming suffix (*according, during, considering*) that happen to share its shape. However, they unite all the inflectional *-ing* and defend the position that no separate gerund and present participle forms of the verb should be distinguished. Their analysis of the constraint is “It is not acceptable in most varieties of modern English for a complement (as opposed to an object) marked with gerund participle inflection to be adjacent to its matrix-clause verb when that verb is likewise in the gerund participle form” (Pullum & Zwicky 1998: 269).

Their analysis is mostly compatible with the four combinations discussed above, except the gerund + participle combination, as in (21), which is the controversial case. However, their analysis is oversimplified due to the conflation of gerunds and participles. Gerunds and participles have different syntactic distributions, which is actually illustrated in this case – phrases headed by gerunds are NPs, functioning as direct objects, subjects, etc., whereas phrases headed by present participles are AdjPs, functioning as the predicative complements, modifiers of nouns or clauses. Besides,

the suffix *-ing* is not inflectional in gerunds and present participles. The analysis in previous chapters has shown that gerunds are nouns derived from verbs, whereas participles are adjectives derived from verbs. Therefore, *-ing* is a derivational suffix in both gerunds and present participles, but the former is noun-forming and the latter is adjective-forming. Then, uniting all the inflectional *-ing* and have a single ‘gerund-participle’ is also morphologically wrong.

7.3.2. Verbs that take phrases headed by present participles as the predicative complement

Aspectual verbs can be followed by a *V-ing* form, and the construction has a raised subject. For instance, in *The kids kept visiting their grandparents*, there is no semantic relation between the matrix subject *the kids* and the predicate verb *kept*, i.e. *kept* does not assign a Θ -role on *the kids*, but it denotes that the event ‘the kids visit their grandparents’ recurred over and over again. If a *V-ing* form follows aspectual verbs, it is a present participle and the phrase functions as the predicative complement of the aspectual verbs. The participle status can be proven by the diagnostics that distinguish gerunds from present participles. Here are some examples with diagnostics.

(25)

- a. Tom started learning German last year.
 - *Learning German was started (by Tom) last year.
 - *Tom was starting learning German last year.
 - *Tom started his learning German last year.
- b. Susan began living independently.
 - *Living independently was begun by Susan.
 - *Susan was beginning living independently.
 - *It was living independently that Susan began.
- c. She stopped using Windows regularly.
 - *Using Windows regularly was stopped by her.
 - *She was stopping using Windows regularly.
 - *She stopped her using Windows regularly.
- d. She continued working on the project.

- *Working on the project was continued by her.
- *She was continuing working on the project.
- *It was working on the project that she continued.

There are some transitive verbs which have the same form as the aspectual verbs, and they take a direct object. However, they are not aspectual verbs but transitive verbs.

(26)

- a. Tom started the conversation.
- b. Susan began her internship.
- c. Carol stopped the conversation.
- d. Mary wants to keep the old carpet.
- e. She continued her work.

An example *The police stopped drinking on campus* (Milsark 1972: 542) is ambiguous because *stopped* can either be an aspectual verb or a transitive verb. If *stopped* is analysed as an aspectual verb, *drinking* is a present participle, and the phrase *drinking on campus* functions as the predicative complement of *stopped* with a raised subject. The interpretation is that the police ceased to drink on campus. If *stopped* is analysed as a transitive verb, *drinking* is an associated V-*ing* nominal, and the phrase *drinking on campus* functions as the direct object of *stopped*. The meaning is that the police stopped the event ‘someone else drinks on campus’. The sentence can be disambiguated by adding a specific modification to the V-*ing* form. The present participle is modified by an adverb as in (27a), whereas the associated V-*ing* nominal is modified by an adjective as in (28a). The V-*ing* form in (27) is a present participle. Thus, the phrase headed by V-*ing* cannot go through the NP movements, and it is not immune to the V-*ing* + V-*ing* constraint. The V-*ing* form in (28) is an associated V-*ing* nominal, i.e. it heads an NP. Thus it can undergo the NP movements, and it is immune to the V-*ing* + V-*ing* constraint.

(27)

- a. The police stopped drinking publicly on campus.
- b. *It was drinking publicly on campus that the police stopped.
- c. *Drinking publicly on campus was hard for the police to stop, once they were drunk.

- d. *Drinking publicly on campus, they must stop.
- e. *The police stopped their drinking publicly on campus.
- f. *Whose drinking publicly on campus did the police stop?
- g. *The police were stopping drinking publicly on campus.
- h. *What the police stopped was drinking publicly on campus.

(28)

- a. The police stopped public drinking on campus.
- b. It was public drinking on campus that the police stopped.
- c. Public drinking on campus is hard for the police to stop.
- d. Public drinking on campus, the police must stop.
- e. The police stopped the students' public drinking on campus.
- f. Whose public drinking on campus did the police stop?
- g. The police were stopping (public) drinking on campus.
- h. What the police stopped was public drinking on campus.

For the combination *V + V-ing*, in addition to aspectual verbs, certain verbs of broad meaning in respect of posture or motion, such as *sit*, *stand*, *come*, also take a present participle. These are intransitive verbs; thus, the following *V-ing* form cannot be a gerund, with the phrase functioning as the direct object, but must be a present participle. These verbs take a complement of respect in the form of a phrase headed by a present participle, with consequent weakening of the primary meaning of the matrix verb. For example, *He stood waiting impatiently*, *She came running in great haste*, *They went hurrying breathlessly*. The phrase headed by the present participle functions as a depictive complement of the matrix verb, and it is controlled by the matrix subject.

7.3.3. Summary and arguments against Huddleston & Pullum's (2002) analyses

In summary, if a phrase headed by a *V-ing* form functions as the direct object of the predicate verb, the *V-ing* form is a gerund; if a phrase headed by a *V-ing* form functions as the predicative complement of the predicate verb, the *V-ing* form is a present participle. In contrast, Huddleston & Pullum (2002: 1220-1222) claim that

there is “no viable distinction in function”. They argue that analysing phrases headed by gerunds as the direct object and phrases headed by present participles as the predicative complement, which is on the basis of analogies with NPs and AdjPs, contradicts the fact that there are verbs that take adjectival predicatives but do not allow gerund-participles, shown in (29), and also the other way around, shown in (30).

(29)

- a. They seemed resentful.
*They seemed resenting it.
- b. He became remorseful.
*He became feeling remorse.

(30)

- a. *He stopped calm.
He stopped staring at them.
- b. *He continues calm.
He continues staring at them.

However, this is a matter of different semantics. As we have discussed in chapters 4 and 6, verbs such as *seem*, *become*, *look*, *sound* select property-denoting complements, but present participles are event-denoting. Therefore, verbs such as *seem* do not select phrases headed by present participles as predicative complements. Associative adjectives, which are entity-denoting, are also not compatible with *seem* predication, even though they are adjectives, e.g. **The decay seems dental*, **The equinox looks vernal*, **The tuberculosis became bovine*.

Similarly, some aspectual verbs such as *stop*, *start*, *continue* combine with event-denoting complements. Therefore, prototypical adjectives, such as *calm*, which are property-denoting, cannot follow these verbs.

There are verbs that select both property-denoting and event-denoting complements, e.g. *be*, *get*, *keep*. For instance, both *They are resentful* and *They are resenting it* are grammatical, but they have different semantics. The prototypical adjective *resentful* denotes the property of the subject, whereas the present participle *resenting* denotes the event that the subject is involved in, and the combination of *be* plus present participle expresses the progressive aspect of the event. Both *They kept staring at*

them and *They kept calm* are grammatical, but their semantics are different. The present participle *staring* denotes the event that the subject is involved in, whereas the prototypical adjective *calm* denotes the property of the subject.

Although present participles and prototypical adjectives are selected by different verbs as predicative complements, there is no distributional difference between them. Functioning as the predicative complement of different verbs is the consequence of their difference in semantics. Participles are event-denoting adjectives, whereas prototypical adjectives are property-denoting.

Therefore, Huddleston & Pullum's (2002) argument against analysing gerunds as direct objects and present participles as predicative complements is not valid since it ignores the within-category restrictions that are due to semantics.

7.4. Verb + NP + V-*ing*

7.4.1. What the combination means

The combination Verb + NP + V-*ing* has several possibilities, and they are different constructions. Whether the V-*ing* form is a present participle or a gerund is related to the construction, and we can decide the status of V-*ing* via distributional diagnostics.

If a V-*ing* form has a preceding subject, the realisation of the subject may be in the genitive case or the accusative case. For instance, *They like our singing the song*; *They like us singing the song*; *They like the children singing the song*. In general, the genitive case is preferred if the subject is a pronoun, the subject has personal reference, and the style is formal (Quirk et al. 1985), e.g. *The host didn't like their leaving so early*, *If you will excuse my mentioning it*. It is informal if the subject is a pronoun in the accusative case, e.g. *I hope you don't mind me marrying your daughter*. There is a preference for the accusative case where the subject is a full NP instead of a pronoun, and the style is informal, e.g. *My neighbours do not like people kissing in public*. The genitive case is avoided when the subject NP is lengthy and requires a group genitive, and the accusative case is preferred, e.g. *Do you remember the students and teachers protesting against the new rule?*

However, it is not as simple as a matter of stylistic difference whether the subject of a *V-ing* form is in the genitive case or the accusative case. There are examples where the subject NP in both the genitive and accusative case is allowed, whereas some only permit one. Compare: *They dislike him/his smoking in the classroom* and *They caught him/*his smoking in the classroom*. There is a structural difference in the sentences and a distributional difference in the *V-ing* form.

Note that when a noun that is postmodified by a phrase headed by a present participle functions as the direct object of a sentence, the combination is also *V + NP + V-ing*, e.g. *He criticised the boy smoking in the classroom*. The phrase *smoking in the classroom* postmodifies the noun *boy*, and *the boy smoking in the classroom* is the direct object of the predicate verb *criticised*. The sentence can be ambiguous if we replace the predicate verb *criticised* with *saw*, e.g. *He saw the boy smoking in the classroom*. One interpretation is *the boy smoking in the classroom* is the direct object of *saw*, and *boy* is modified by the phrase *smoking in the classroom*; another interpretation is that the phrase *smoking in the classroom* functions as the predicative complement of the predicate verb *saw* with a controlled object *the boy*. Here⁷⁰ we focus on the construction where the phrase headed by *V-ing* functions as the complement rather than post-modification.

7.4.2. Gerund vs participle diagnostics

Let us consider the combination *V + NP + V-ing* that is a predicate verb taking a complement headed by *V-ing* with an intervening subject NP. The task is to find out whether *V-ing* is a gerund or a present participle. It is related to the function of the phrase headed by *V-ing*, either as the predicative complement or as the direct object.

Let us look at two sets of examples.

(31)

- a. Mary dislikes him smoking in the classroom.
Mary dislikes his smoking in the classroom.

⁷⁰ The cases where a *V-ing* form is a lexicalised noun or an ascriptive adjective will not be discussed here either, since the sentence structure is straightforward. Examples with a lexicalised noun are *He joined our meeting*, *They do not understand his feeling*. Examples with an ascriptive adjective are *I find him charming*, *He made the story interesting*.

- b. I hate him wasting my time.
I hate his wasting my time.
- c. I appreciated him repairing my bike.
I appreciated his repairing my bike.
- d. I remembered them breaking into my car.
I remembered their breaking into my car.

(32)

- a. He kept me waiting for two hours.
*He kept my waiting for two hours.
- b. I kept him cleaning the flat.
*I kept his cleaning the flat.
- c. I caught them breaking into my car.
*I caught their breaking into my car.
- d. I stopped the teacher shouting angrily at the student.
*I stopped the teacher's shouting angrily at the student.

The criterion of separating the examples is whether the subject NP of the *V-ing* form can be in the genitive case or not. The first group (31) allows the subject NP in both the genitive and accusative case, whereas the second group (32) allows the subject NP only in the accusative case. It is the distributional difference between gerunds and present participles that gives rise to the difference in the case of the intervening subject.

The diagnostics for gerunds have been discussed in 7.3.1. One of the diagnostics is that gerunds permit a genitive subject, whereas present participles do not. Thus, the *V-ing* forms in (31) are gerunds, because the subject NP can be in the genitive case; whereas the *V-ing* forms in (32) are present participles, because the subject NP cannot be in the genitive case, but only in the accusative case.

Let us compare the examples in (31) and those in (32). Though the combination in both (31) and (32) consists of a verb followed by a *V-ing* form which takes a subject NP in the accusative case, the phrases headed by *V-ing* have different syntactic functions. In (31), the *V-ing* forms allow the subject in the genitive case and hence are gerunds; the phrase headed by *V-ing* functions as the direct object of the predicate verb. In contrast, the *V-ing* forms in (32) do not allow the subject in the

genitive case and hence are present participles; the phrase headed by *V-ing* functions as the predicative complement of the predicate verb, with object control.

The categorial status of *V-ing* forms in each group can also be tested by other diagnostics for gerunds. Passivisation is one of the diagnostics, and we can test whether the subject NP plus the phrase headed by *V-ing* can be passivised and promoted to the sentence's subject position. Phrases headed by gerunds can be passivised, whereas phrases headed by present participles cannot.

(33)

- a. Him/his smoking in the classroom is disliked (by Mary).
- b. Him/his wasting my time is hated (by me).
- c. Him/his repairing my bike was appreciated (by me).
- d. Them/their breaking into my car was remembered (by me).

(34)

- a. *Me waiting for two hours was kept.
- b. *Him cleaning the flat was kept.
- c. *Them breaking into my car was caught.
- d. *The teacher shouting angrily at the student was stopped.

Another difference is in whether the subject NP is assigned a θ -role from the predicate verb, i.e. whether the subject of the *V-ing* form is also the object of the predicate verb. If *V-ing* is a gerund, as in (31), the NP is only assigned a θ -role from the gerund as its subject, but not from the predicate verb. The intervening NP is only the subject of the gerund but not the object of the predicate verb. It is an Exceptional Case Marking construction. Example (31a), *Mary dislikes him smoking in the classroom*, does not entail 'Mary dislikes him'; what Mary dislikes is the event 'he smokes in the classroom'. If *V-ing* is a present participle as in (32), the NP is assigned a θ -role from the present participle as its subject, as well as from the predicate verb as its object. It is an object-control construction. The difference can be illustrated by passivising the intervening NP. If the NP also functions as the object of the predicate verb, it can be passivised. Otherwise, it cannot.

(35)

- a. *He is disliked smoking in the classroom.
- b. *He is hated wasting my time.

- c. *He was appreciated repairing my bike.
- d. *They were remembered breaking into my car.

(36)

- a. I was kept waiting for two hours.
- b. He was kept cleaning the flat.
- c. They were caught breaking into my car.
- d. The teacher was stopped shouting angrily at the student.

In addition, if the intervening NP is only the subject of *V-ing* but not the object of the predicate verb, the phrase headed by *V-ing* can be expressed in the passive voice. For instance, in *Mary dislikes him telling the same story again and again*, *him* is only assigned a Θ -role from the gerund as its subject; thus we can passivise the direct object of the gerund *telling*, as in *Mary dislikes the same story being told by him again and again*. In contrast, if the intervening NP is also the direct object of the predicate verb, it cannot be moved from the subject position in the phrase headed by *V-ing*. For instance, in *Mary kept his son playing the piano for two hours*, the NP *his son* is also assigned a Θ -role from the predicate verb as its object. Therefore, if we passivise the direct object of the present participle, as in **Mary kept the piano being played by his son for two hours*, the intervening NP *his son* cannot be assigned Θ -role from the predicate verb, making this ungrammatical or changing the meaning. More examples to illustrate the test:

(37)

- a. I hate my time being wasted by him.
- b. I appreciated my bike being repaired by him.
- c. I remembered my car being broken into by them.

(38)

- a. *I kept the flat being cleaned by him.
- b. *I caught my car being broken into by them.
- c. *I stopped the student being shouted angrily by the teacher.

Another way to illustrate the differences between the two groups is that in the first group (31), what is *disliked*, *hated*, *appreciated*, or *remembered* is an event, which the phrase headed by the gerund describes. These verbs may be followed by a *that-*

clause⁷¹, which reifies a fully grounded process. This possibility is not available in the second group (32), where what is *kept*, *caught*, *stopped* is not the event but the agent of the event, i.e. the intervening subject NP.

(39)

- a. Mary dislikes that he smokes in the classroom.
- b. I hate that he wastes my time.
- c. I appreciated that he repaired my bike.
- d. I remembered that they broke into my car.

(40)

- a. *He kept that I waited for two hours.
- b. *I kept that he cleaned the flat.
- c. *I caught that they broke into my car.
- d. *I stopped that the teacher shouted angrily at the student.

Now let us analyse the ambiguous cases: some perception verbs can take either a predicative complement or a direct object, such as *see* and *hear*. Constructions with such perception verbs are ambiguous because the *V-ing* form could be either a present participle or a gerund.

(41)

- a. I saw him painting a flower.
- b. I heard him singing the song.

If the *V-ing* form is a present participle, the phrase headed by *V-ing* functions as the predicative complement of the perception verb *saw* or *heard*, and it is an object-control construction; *him* is assigned a θ -role from both the present participle as its subject and from the predicate verb *saw* or *heard* as its direct object. We can test this by passivising *him* because the direct object can be passivised.

(42)

- a. He was seen painting a flower.

⁷¹ This is not to say that a *that*-clause is synonymous with a *V-ing* complement. Let us consider the examples with *remember*. A *that*-clause can designate a fact that is remembered, whilst the *V-ing* complement focuses more on the memory of experiencing an event. *I remember them/their breaking into my car* is appropriate only if the speaker personally witnessed the event, and recalls the experience at the time of speaking. *I remembered that they broke into my car* would be appropriate even if the speaker had not personally witnessed the break-in, but had learned about it through a third party.

- b. He was heard singing the song.

If the *V-ing* form is a gerund, the phrase headed by *V-ing* functions as the direct object of the predicate verb, and the intervening NP can be in the genitive case. Also, phrases headed by gerunds can be passivised, so NP + *V-ing* can be passivised. Furthermore, the NP is not assigned a θ -role from the predicate verb, and thus the NP can move, i.e. the object of the gerund can be passivised.

(43)

- a. I saw his painting a flower.
b. I heard his singing the song.

(44)

- a. Him/his painting a flower was seen (by me).
b. Him/his singing the song was heard (by me).

(45)

- a. I saw a flower being painted by him.
b. I heard the song being sung by him.

The passivisation of NP + *V-ing* shows that the phrase headed by *V-ing* can function as the direct object of the perception verbs *saw*, *heard*, i.e. *V-ing* is a gerund. The subject of the gerund, *him*, is not the object of the predicate verb *saw*, and it is an Exceptional Case Marking construction. The interpretation is ‘What I saw is that he painted a flower’, ‘What I heard is that he played the piano’.

There are also cases with perception verbs that do not allow the passivisation of the intervening NP. In such cases, there is no thematic relation between the NP and the predicate verb, i.e., the NP is not the object of the predicate verb. For instance, in *I saw the stress of these last few months takings its toll on her*, ‘stress’ is not something that people can see, because stress is invisible. *We saw it raining* contains a quasi-argument (weather-*it*), which cannot be analysed as the direct object of *saw*. What is perceived here is the event described by the complement as a whole, rather than the NP. Thus, the NP cannot go through passivisation:

(46)

- a. I saw the stress of these last few months takings its toll on her.
*The stress of these last few months was seen taking its toll on her.
b. We saw it raining.

*It was seen raining.

Such examples can go through passivisation of NP + *V-ing*. Thus the *V-ing* form is analysed as a gerund.

(47)

- a. The stress of these last few months taking its toll on her can be seen.
- b. It raining outside was seen by everyone.

In summary, the distinction between the first (31) and second (31) group of V + NP + *V-ing* combination is whether NP + *V-ing* functions as the direct object of the predicate verb. If so, *V-ing* is a gerund; otherwise, *V-ing* is a present participle, and the phrase headed by the present participle functions as the predicative complement of the predicate verb. Passivisation is one diagnostic for the distribution of gerunds. We can also use other tests to distinguish gerunds from present participles: *it*-cleft, pseudo-clefting, question formation, topicalisation.

(48)

- a. What Mary dislikes is him smoking in the classroom.
- b. It was him wasting my time that I hate.
- c. Whose repairing your bike did you appreciate?
- d. Them breaking into my car, I cannot remember.

(49)

- a. *It was me waiting for two hours that he kept.
- b. *What I kept is him cleaning the flat.
- c. *Whose breaking into your car did you catch?
- d. *The teacher shouting angrily at the student, I stopped.

The combination V + NP + *V-ing* is realised as different structures according to the distribution of *V-ing*. The distinction is drawn by the permission of the genitive case of the intervening NP, and it can be tested by the passivisation of NP + *V-ing*. Gerunds allow the intervening NP in the genitive case. In contrast, the intervening NP of present participles cannot be in the genitive case; if *V-ing* is a present participle, the passivisation of NP + *V-ing* is not possible, because phrases headed by present participles do not function as the direct object.

Huddleston & Pullum (2002: 1238) also mention the combination V + NP + V-*ing*, separating those which allow a genitive NP and those that do not. However, the distinction between different structures is not discussed, probably because V-*ing* is analysed as a single category ‘gerund-participle’ there.

7.5. Morphological differences

In traditional grammar, as well as Huddleston & Pullum (2002), both gerunds and present participles are considered inflected forms of verbs and *-ing* is an inflectional suffix. My argument against this analysis is based on the syntactic distribution of gerunds and present participles. Gerunds have the distribution of nouns and therefore belong to the category of nouns, whereas present participles have the distribution of adjectives and thus belong to the category of adjectives. The suffix *-ing* is a derivational suffix in both gerunds and present participles, though one is noun-forming and the other is adjective-forming. Gerunds are nouns derived from verbs, whereas participles are adjectives derived from verbs.

The distinction between gerunds and common nouns (e.g. associated V-*ing* nominals) has been explained in chapters 3 and 5, and the distinction between present participles and prototypical adjectives has been explained in chapters 4, 5 and 6. Gerunds and associated V-*ing* nominals differ in the structure of phrases headed by them. Associated V-*ing* nominals are common nouns. Unlike NPs headed by common nouns, NPs headed by gerunds have the internal structure of VPs. However, the structural difference of phrases headed by them is not in conflict with the analysis of gerunds as belonging to the category of nouns. Present participles and prototypical adjectives differ in semantics and the structure of phrases headed by them. Present participles are event-denoting, whereas prototypical adjectives are property-denoting. Phrases headed by present participles have the internal structure of VPs. However, the differences between participles and prototypical adjectives and the VP structure of phrases headed by present participles are not in conflict with the analysis of present participles as belonging to the category of adjectives.

Phrases headed by gerunds and present participles have the internal structure of VPs, but this does not mean that gerunds and present participles are verb forms, and does not contradict my analysis of the categorial status of gerunds and participles. The

explanation for the VP structure of phrases headed by gerunds is, firstly, gerunds are derived from verbs and denote events, so gerunds have the argument structure representation of the embedded verbs; secondly, gerunds inherit selectional features from relationals, so gerunds are theta-markers and take adverb modification. The explanation for the VP structure of phrases headed by present participles is, firstly, present participles belong to the category of adjectives, so they are theta-markers and take adverb modification; secondly, present participles are derived from verbs and denote events, so present participles have the argument structure representation of the embedded verbs.

Morphologically, a distinction between gerunds and present participles, mainly motivated by distributional differences, can be upheld.

In addition, if gerunds and participles were conflated as a single category of ‘gerund-participle’, what is the categorial status of past participles? Past participles have the same distribution as present participles, even though they are different in form. It does not make sense to separate present participles and past participles, which Huddleston & Pullum (2002: 83) do. They state that ‘the compound term “gerund-participle” serves also to bring out the relationship between this form and the past participle: the gerund-participle has a considerably wider distribution than the past participle (which does not occur in constructions like *Destroying the files was a serious mistake*), and yet the two forms have it in common that they head expressions modifying nouns.’ However, I must highlight how present participles are more similar to past participles than to gerunds. Firstly, the constructions in which past participles do not occur are those only allowing gerunds but not present participles. Secondly, past participles and present participles have more in common than just heading expressions modifying nouns, as discussed in chapter 4. Participles – present and past participles – have the distribution of adjectives. Phrases headed by present and past participles can function as 1) predicative complements, 2) modifiers of clauses and 3) modifiers of nouns.

Besides, Huddleston & Pullum (2002: 1644) treat the formation of an adjective that is homonymous with the gerund-participle or past participle form of a verb as a process of conversion, as in *amusing, boring, stunning, bored, tired, worried*. Meanwhile, gerund-participles and past participles are analysed as inflected forms of

verbs. However, as we have discussed in chapter 5, this contradicts the generalisation that regular inflection does not precede derivation (Kiparsky 1982). Huddleston & Pullum (2002: 78-81) distinguish participles as verb forms from ‘participial adjectives’, by which they denote prototypical adjectives that are identical in form to participles. It is true that participles are different from the identical prototypical adjectives in certain ways, but Huddleston & Pullum (2002) neglect to discuss the reason for these differences. I have, in chapter 6, argued that these differences are due to their different semantics, which are not reliant on categorial status. Therefore, despite the differences that Huddleston & Pullum (2002) discuss, it is valid to categorise participles as adjectives, and not verb forms.

7.6. Conclusions

Although both gerunds and present participles are in the form of *V-ing*, have event-denoting semantics, and phrases headed by both of them have the internal structure of VPs, they can be and must be distinguished from each other. They are different in syntactic distribution. Gerunds have the distribution of nouns, whereas present participles have the distribution of adjectives. Gerunds belong to the category of nouns and head NPs; phrases headed by gerunds and phrases headed by common nouns, proper nouns or pronouns have the same syntactic functions. Compare *They have discussed travelling to Europe* and *They have discussed the plan*, *Drinking water regularly is healthy* and *Tom is friendly*, *Playing the piano is his hobby* and *They are my friends*. Present participles belong to the category of adjective and head AdjPs; phrases headed by present participles and phrases headed by prototypical adjectives have the same syntactic functions: compare *He is writing a book*, *a running boy* and *He is desirous of fame*, *a cute boy*.

Morphologically, gerunds and present participles are also different, although both are derived from verbs via *-ing* suffixation. Gerunds are nouns derived from verbs, whereas present participles are adjectives derived from verbs.

In conclusion, there are distributional differences between gerunds and present participles. Gerunds and present participles are distinct categories, and therefore cannot be conflated into a single category of ‘gerund-participle’.

Chapter 8. Patterns of Verb-ing-Noun combination

8.1. Introduction

In the English form X-N where X is the attributive modifier of the head noun, X can be a noun as in *boy actor*, *toy factory*, *watchmaker*, *apple pie*, etc., or an adjective as in *nice dress*, *dental decay*, *greenhouse*, *blackbird*, etc. The attribute-head combination is found in both compounds and phrases, and it can show a mismatch of the behaviour associated with the syntax and the behaviour expected in the lexicon. There are two topics which are of concern. One topic is the attribution relations of the X-N combination. The second is the topic of compounding in English and the question of the difference between English compound nouns and noun phrases (Giegerich 2004, 2009, 2015).

The attribution relations and the distinction between compound nouns and noun phrases are closely related to each other. The attribute-head combination can be either a case of ascriptive attribution or of associative attribution. In ascriptive attribution, the attribute denotes a property which it ascribes to the head noun (Ferris 1993: 24). Property-denoting lexemes are typically adjectives, such as *beautiful picture*, *lovely girl*, *cute dog*; the function of being an ascriptive attribute to nouns can also be performed by nouns, such as *boy actor*, *luxury flat*, *bottom line*. Associative attribution denotes entities, establishing the relationship of ‘is associated with’ between the head noun and the attribute, such as *toothbrush*, *dental decay*, *milk tooth*, *bovine disease* (Giegerich 2015: 17-19). A question worth discussing is when the attribution, ascriptive or associative, is lexical, giving rise to compound nouns, and when it is syntactic, creating noun phrases. Adj-N with ascriptive attribution is usually associated with syntax, although not invariably so (Giegerich 2005, 2009a). Ascriptive adjectives can be the first constituent of compound nouns, such as *White House*, *blackbird*, *freepost*, *sweetcorn*, *stillbirth*, *short story*, whose meanings are not entirely predictable from the constituents of the compound and must be listed, and they often have fore-stress (Bauer 2004).

The syntactic, semantic and phonological properties of lexical items and phrases can be used as diagnostics for the lexical or syntactic provenance of a given complex nominal, i.e. whether the attribute-head combination is a compound or a phrase (Giegerich 2015). The compound-phrase distinction under discussion is congruent

with the distinction drawn in formal grammar between the syntax and the lexicon as sites for the concatenation of linguistic units. Syntax produces members of phrasal categories, while members of lexical categories, i.e. here compounds, originate from the lexicon. Syntactic operations are diagnostics of phrasal status. According to the Lexical Integrity Principle (Di Sciullo & Williams 1987; Lapointe 1980; Scalise & Guevara 2005), syntactic processes can manipulate members of lexical categories ('words') but not their morphological elements, i.e. no syntactic operation drawing on syntactic structure can manipulate the adjective or the noun embedded in the [XN]. The individual elements of a structure formed in the syntax, such as phrases [[X][N]], are available for syntactic operations, e.g. *expensive dress – a very expensive dress, an expensive red dress, an expensive dress and a cheap one*. These syntactic operations do not apply to compounds, e.g. *watchmaker – *an expensive watchmaker* (where the watch is expensive but not the craftsman), **watch-skilled-maker, *a clockmaker and a watch one*. Giegerich (2015) studies a number of syntactic operations which freely apply to the constituents of noun phrases and which, under lexical integrity, should never be able to affect the components of compounds. It is worth noting that *pro-one*, however, is in principle also available to elements of compounds,⁷² with the only real exception being those that display argument-predicate relationships: synthetic compounds (**a clockmaker and a watch one*) and certain associative Adj-Ns compounds (**the presidential murder and the papal one*) (Giegerich 2015: 36, 119).

Giegerich (2015: 120) also argues that any constraints on the modification of the elements of compounds are not due to the compound status of the construction, but due to the additional feature of being a compound which is listed. The naming function typically performed by nouns makes them prone to listing even if they are compounds which have the internal structure of phrases. For instance, *White Wagtail* is a phrasal name for a bird species.⁷³ *Totally White Wagtail* is possible only where *white wagtail* is interpreted as a phrase rather than a listed phrasal name. Similarly, we can have *a rather white house*, but not **a rather White House*; and when we talk about *a sweeter corn*, we are not using it as the name of the entity given in the dictionary – *sweetcorn*; or *short story* as in *a very short story* which is different from

⁷² Failure to apply in **a windmill and a flour one*, for example, is due to the non-parallelism of the associative relationship in *windmill* and *flour mill* (Bauer 1998).

⁷³ Booij (2009) also discusses phrasal names or phrasal compounds.

the compound *short story* which means a story with fully developed theme but significantly shorter than a novel.

According to Jespersen's (1942: 137) claim "that we have a compound if the meaning of the whole cannot be logically deduced from the meaning of the elements separately"⁷⁴, noun phrases are expected to have compositional semantics. Adj-N compounds with ascriptive attribution, despite the regular phrasal forms, show semantic irregularity. Therefore, they are listed in the lexicon. Some rather striking examples of semantic irregularity are found among phrasal names, common for example in denoting bird species. Such phrasal compounds give the impression of descriptive accuracy, but this impression is false in many cases. For example, while *Yellow Wagtail* is striking for its partly yellow colour, the *Grey Wagtail* is almost as yellow, and the *White Wagtail* is only partially, and not strikingly, white (Giegerich 2015: 110; Booij 2009). Similarly, a *short story* is not necessarily short, and *sweetcorn* may not be sweet.

Giegerich (1992), Plag (2003) and many others study the compound and phrase stress pattern. Fore-stressed N-Ns are uncontroversially considered to be compounds (e.g. *radio station*, *watchmaker*), and end-stressed Adj-Ns are phrases (e.g. *new book*, *beautiful picture*). However, the reality is more complicated than this generalisation. N-N combinations may have fore-stress or end-stress, such that of the latter some are phrases and others are compounds violating the Compound Stress Rule⁷⁵. The distribution of the two available stresses is shown with particular reliability in the doublets such as *toy shop*, *women doctor*, *steel warehouse*. The doublet pair is differentiated by the ascriptive-associative distinction, and that the former will have end-stress and the latter have fore-stress. The fore-stressed version of such doublets, and indeed fore-stressed N-Ns in general, are compound nouns (Faiß 1981; Giegerich 2015: 62-63). For instance, *toy shóp* means 'shop which is a toy', and it is ascriptive attribution, whereas *tóy shop* is 'shop which sells toys', and it is associative attribution; *metal séparator* 'separating instrument which consists of metal' is ascriptive attribution, whereas *méal separator* 'instrument for separating metal from other material' is associative attribution.

⁷⁴ The claim is not flawless, because synthetic compound are fully compositional (Giegerich 2015: 110).

⁷⁵ Compound Stress Rule: In any pair of sister nodes [AB]_L, where L is a lexical category, B is strong iff it branches (Lieberman & Prince 1977: 257).

I will, in this chapter, focus on the special type of X-N in which X is a *V-ing* form. The combination *V-ing-N* is complicated and worth discussing because the attribute *V-ing* has several possible analyses. *V-ing* can be a present participle (e.g. *The boy is running*); it can be an ascriptive adjective (e.g. *The movie is boring*); it can be a gerund (e.g. *Running regularly is healthy*); it can be an associated *V-ing* nominal (e.g. *Regular running is healthy*); it can be a lexical noun (e.g. *This is a tall building*). In the previous chapters, I have discussed the categorial status and the distribution of each *V-ing* form. There are adjectives in the form of *V-ing*: present participles and ascriptive *V-ing* adjectives; there are nouns in the form of *V-ing*: gerunds and associated *V-ing* nominals.⁷⁶ In the construction X-N, X can be a noun or an adjective. A *V-ing* form that belongs to one of these two lexical categories can function as the attribute of nouns. Ascriptive *V-ing* adjectives and present participles are adjectives, and thus can modify nouns attributively, e.g. *interesting books, boring stories, exciting news, tiring journey* with ascriptive *V-ing* adjectives, and *sleeping baby, walking man, sparkling water, falling leaves* with present participles. Nouns that are in the form of *V-ing* can modify nouns attributively, e.g. *sleeping pill, walking stick, drinking water, chewing gum*, etc. The attribute can either be a gerund or an associated *V-ing* nominal. I will argue that the attribute is an associated *V-ing* nominal.

Once we know the possible types of *V-ing-N* combination, we can discuss their attribution relations. The discussion includes whether *V-ing* is an ascriptive attribute or an associative attribute and how the attribution is related to the category of *V-ing*. Ascriptive attributes denote a property which it ascribes to the head noun. Property-denoting lexemes typically, though not exclusively, are members of the adjective category.⁷⁷ Associative attributes denote entities, rather than properties, with which the head noun is in some way associated. Entities are typically denoted by nouns; thus, associative attribution is typically performed by nouns, though it is also applicable to associative adjectives. Therefore, if *V-ing* belongs to the category of adjectives, the attribute relation is ascriptive, such as *sleeping baby, boring movie*; if *V-ing* belongs to the category of nouns, the attribution relation is associative, such as *sleeping pill, drinking water*. Can we find associative attribution with *V-ing*

⁷⁶ Lexical *V-ing* nouns are not discussed here.

⁷⁷ The function of being an ascriptive attribute to head nouns can also be performed by nouns, e.g. *baby girl, toy train, boy actor, luxury flat, bottom line*, etc.

adjectives as the attribute and ascriptive attribution with *V-ing* nouns as the attribute? *V-ing* adjectives, i.e. ascriptive *V-ing* adjectives and present participles, cannot be an associative attribute of the head noun, because they are not associative adjectives. *V-ing* nouns cannot be an ascriptive attribute, because ascriptiveness among nouns is their ability to be paraphrased as predicates. For example, *baby girl* ‘girl who is a baby’ is ascriptive attribution, i.e. being a baby is the property that is ascribed to the girl (Giegerich 2015: 16). However, for instance, *sleeping pill* cannot be paraphrased as ‘pill that is a sleeping’.

The attribute-head construction is found in both compounds and phrases. Whether a combination *V-ing-N* is a compound noun or noun phrase is closely related to the categorial status of *V-ing*, as well as the attribution relation. In *V-ing-N* compounds, such as *drinking water*, *sleeping pill*, *walking stick*, the first constituent functions as the associative attribute and is a noun; whereas in *V-ing-N* phrases, such as *boring movie*, *interesting book*, *sleeping baby*, *walking man*, the first constituent functions as the ascriptive attribute and is an adjective. However, how should we analyse examples such as *sleeping partner*, *revolving door*, *hummingbird*, *mockingbird*, *wading bird*, etc. – are they compounds or phrases, and what is the attribution relation? This chapter will also discuss the stress doublets, such as *dr íving instructor* vs *driving instrúctor* – how the stress pattern matches the attribution relation and the compound-phrase distinction, and how it is related to the category of *V-ing*. Such compounds parallel to phrases exist because the head noun of the combination fulfils the requirement of being capable of performing the action expressed by the verb which is in the form of *V-ing*, or because the overt combination admits twofold interpretation with regard to a naming relationship (Fai ß 1978: §11.1).

8.2. Verb-Noun compounding in English and German

8.2.1. The differences

German V-N compounding is very productive (Donalies 2004: 72 ff.; Fleischer & Barz 1995: 108 ff.), for instance *Waschmaschine* ‘washing machine’, *Trinkwasser* ‘drinking water’, *Backpulver* ‘baking powder’, *Spottdrossel* ‘mockingbird’, *Schwirrvogel* ‘hummingbird’, *Drehtür* ‘revolving door’, etc. Unlike German, English V-N compounds take up a relatively marginal position in the lexico-

grammatical system (Marchand 1969: 72-74; Plag 2003: 145-146; Schmid 2005: 122). English V-N compounding has many constraints. The word-formation is not productive, with a very limited number of examples. Because of the unrestricted verb-to-noun conversion, many V-N compounds are also N-N compounds. I have in (Chen 2014: 9-11) analysed the cases of real V-N compounds. The first constituent of real V-N compounds must be a verb that is either not available for verb-to-noun conversion, such as *enable pulse*; or where, because of blocking effect, the special nominal affix precludes the application of general verb-to-noun conversion, such as *think tank*, where *think_N* is blocked by *thought*, *weighbridge*, where *weigh_N* is blocked by *weight*; or because there is a semantic deviation on the converted noun, such as *cookbook* ‘cookery-book’ which is not a book for a cook (chef), *sawmill* ‘mill in which wood is sawn’ is not a mill for saws. Even if the verb-to-noun conversion works without semantic deviation, whether the first constituent of a compound is a verb or a noun can be analysed from the interpretation of the compound. For instance, *jump* in *jump leads* ‘a pair of thick wires for starting the engine of one vehicle with electricity from the battery of another vehicle’ must be analysed as a verb. Note that the compound *jump leads* is semantically opaque. Strictly speaking, *think tank* and *weighbridge* are also not semantically transparent. *Think tank* is not really a tank, but ‘a research institute that provides advice’; *weighbridge* is not actually a bridge, but ‘a platform scale for weighing vehicles and cattle’.

The unrestricted verb-noun conversion in English provides the possibility of N-N interpretation for most V-N compounds as a competing form, unlike in German. The difference in lexical stratification between English and German gives rise to the conversion difference. According to the principles of base-driven stratification (Giegerich 1999), English has two lexical strata, the first of which is root-based, and the second word-based. German, on the other hand, has a stem stratum additionally, between the root and word stratum. The distinction between stem and word as morphological categories, of which the former is primarily relevant to the inflectional morphology, has collapsed in the history of English as a part of the decline of the inflectional system (cf. Dalton-Puffer 1996; Kastovsky 1992, 1996; Wurzel 1984). German has the intermediate category, stem – particularly evident in the case of verb stems forming the bases of affixation processes or the first

constituents of compounds, e.g. *trink-bar* ‘drinkable’, *Trink-wasser* ‘drinking water’ (Giegerich 1999: 71). The examples suggest that German V-N compounding is neither handled on the root-based stratum, which is the same as its English equivalent, nor is it a word-level process since the bases of German compounds are not words. The first constituents are members of the lexical category of verbs, but lack the inflection that would enable them to enter the syntax as free forms (cf. Matthews 1991: 64 ff.). Stem-based morphology is characterised by the fact that the inputs to the morphological processes are always bound forms, i.e. they cannot occur as a word in an utterance unless they are accompanied by an inflectional ending. Because of the absence of the stem-based stratum, English has the greater disposition to allow verb-noun conversion. Therefore, there is no overt evidence of the categorial status of the first constituent of the compounds, and they can also be treated as N-N compounds, e.g. *payslip*, *payday*, *rattlesnake*, *racehorse*, *dancehall*, *turntable*, *bakehouse*, etc. (Adams 1973, 2001; Jespersen 1942; Marchand 1969).

Apart from N-N compounds whose first constituent is a noun converted from the verb, there is another competing form. Instead of V-N compounds, English has V-*ing*-N compounds to express the same meaning, e.g. *Waschmaschine* ‘wash-machine’ – *washing machine*, *Kaugummi* ‘chew-gum’ – *chewing gum*, *Trinkwasser* ‘drink-water’ – *drinking water*, *Backpulver* ‘bake powder’ – *baking powder*, *Spottdrossel* ‘mock-bird’ – *mockingbird*, *Schwirrvogel* ‘buzz-bird’ – *hummingbird*, *Drehtür* ‘revolve-door’ – *revolving door*, etc. Note that these are two types of compounds. We can tell that there is a difference between a compound such as *washing machine* ‘machine for washing’ and a compound such as *hummingbird* ‘a species of birds, which is known as hummingbird because of the humming sound they create’. The distinction between these two types of compounds will be analysed in detail.

V-*ing*-N compounding is very productive. One crucial question must be raised: what is the category of V-*ing* in English V-*ing*-N compounds? The question leads to a series of discussions of different V-*ing* forms, which have been performed in the previous chapters. I attempt to show in this chapter how the distinctions of these V-*ing* forms characterise different V-*ing*-N combinations – the attribution relation differences and the compound-phrase distinction.

8.2.2. V-*ing*-N compounds in English

This chapter focuses on the second form that is competing with V-N compounds, namely V-*ing*-N compounds. Marchand (1969) explains morphological composites grammatically from syntactic relations underlying them in a sentence. English V-*ing*-N compounds are classified by Marchand according to the argument structure of the embedded verb and the modified head noun. In V-*ing*-N compounds, the head noun can be the subject of the verb, where the verb may be transitive or intransitive, e.g. *dancing girl* ‘the girl that dances’, *revolving door* ‘the door that revolves’, *mocking bird* ‘the bird that mocks something’, etc. The head noun can also be the object of the verb, e.g. *eating apple* ‘the apple that is to be eaten’, *chewing gum* ‘the gum that is to be chewed’, *drinking water* from ‘water that is to be drunk’, etc. The head noun can also be the prepositional complement of the verb, e.g. *swimming pool* ‘the pool that people swim in’, *freezing point* ‘the point at which water freezes’, *washing machine* ‘the machine with which we wash (clothes)’.

Regardless of the argument structure, the most common V-*ing*-N compounds follow the pattern that the head noun is associated with the action expressed by the attribute V-*ing*. Faiß (1981: 146) lists a number of examples: *baking powder*, *boarding pass*, *dining room*, *drawing desk*, *drinking fountain*, *drinking water*, *driving license*, *listening comprehension*, *reading comprehension*, *running competition*, *sleeping bag*, *sleeping pill*, *sneezing powder*, *starting date*, *training programme*, *voting right*, *waiting room*, etc.

The combination V-*ing*-N is very productive in English, but whether V-*ing*-N is a compound or a phrase needs further discussion. The categorial status of the V-*ing* form must be taken into account, since V-*ing* forms have several possible analyses: ascriptive V-*ing* adjectives, present participles, associated V-*ing* nominals, gerunds, etc. Furthermore, we need to discuss the attribution relation of V-*ing*-N, i.e. whether the first constituent is an associative or ascriptive attribute, which is related to the compound-phrase distinction.

Adjectives and nouns can modify a noun attributively. Ascriptive V-*ing* adjectives and present participles belong to the category of adjectives, and thus can function as the attribute of a head noun, e.g. *interesting books*, *boring stories*, *tiring journey* with ascriptive V-*ing* adjectives, and *sleeping baby*, *laughing girl*, *falling leaves* with

present participles. Ascriptive *V-ing* adjectives and present participles do not denote entities, and the attribution relation between an ascriptive adjective or a participle and the noun it modifies cannot be associative. An ascriptive *V-ing* adjective ascribes a property of the head noun; a present participle ascribes an event to the head noun. Thus, the attribution of such a *V-ing-N* combination is ascriptive. Both gerund and associative *V-ing* nominals belong to the category of nouns, and can thus modify nouns attributively, e.g. *sleeping pill*, *washing machine*, *drinking water*, *chewing gum*, etc. However, we need to investigate whether the first constituent is a gerund or an associated *V-ing* nominal.

8.3. *V-ing* adjectives as the attribute of *V-ing-N*

8.3.1. Ascriptive *V-ing* adjectives

Ascriptive *V-ing* adjectives can modify head nouns attributively, e.g. *interesting book*, *boring movie*, *tiring journey*, *exciting experience*, etc. Such *V-ing-N* combinations are noun phrases because the combination is amenable to syntactic operations. Firstly, *V-ing-N*, in which the first constituent is an ascriptive *V-ing* adjective, allows *pro-one*.

- (1)
 - a. an interesting story and a boring one
 - b. a tiring journey but an exciting one

Phrases are amenable to *pro-one*. However, *pro-one* does not necessarily confirm the phrasal status. Giegerich (2015: 36, 119) finds that *pro-one* is in principle available to constituents of compounds, with the only real exception being those that display argument-predicate relationships: synthetic compounds and certain associative Adj-N compounds. Therefore, *V-ing-N* combinations such as *interesting story* allowing *pro-one* does not necessarily prove that they are not compounds. Independent modification is a more reliable diagnostic for the lexicon-syntax divide.

- (2)
 - a. a very interesting book
 - b. a surprisingly boring movie

This test also has limitations. Firstly, some adjectives, for example, associative adjectives, are not modifiable: **obviously dental decay*, **very morphological analysis*. It remains unclear whether this means that associative adjectives can only occur in lexical constructions, such that *dental decay* is lexical (Giegerich 2009a: 194). However, the first constituent of the combinations we discuss now are ascriptive V-*ing* adjectives and thus are not affected by this limitation of the diagnostic. Secondly, the head-noun combinations in which a noun functions as the ascriptive attribute, such as *boy actor*, *baby girl*, are structurally ambiguous, given the nature of intersective ascription. In examples such as *young boy actor*, *lovely baby girl*, it is unclear whether the adjective modifies the entire N-N or merely the first noun. Note in contrast, that in N-N that displays associative modification, no ambiguity arises: in *remote village shop*, *hot summer fruit*, the adjectives must modify the entire N-N compound, even though *remote village*, *hot summer* would be semantically straightforward (Giegerich 2009a: 194). In such cases, an adjectival modification is a possible diagnostic for the distinction between ascriptive and associative N-N construction, and it appears to confirm the lexical status of the associative N-N; but it fails to tell us whether *boy actor* is a compound or not (Giegerich 2015). However, this limitation again does not affect the diagnostic to prove the phrasal status of the V-*ing*-N combinations, since the V-*ing* form here is an ascriptive adjective, not an ascriptive noun, and the examples such as *interesting book* are not structurally ambiguous.

In summary, if V-*ing* is an ascriptive V-*ing* adjective, the combination V-*ing*-N, such as *interesting book*, *boring story*, is a noun phrase with ascriptive attribution.

8.3.2. Present participles

Present participles can modify nouns attributively, e.g. *sleeping baby*, *walking man*, *rising sun*, *falling leaves*, *leaning tower*, *sparkling water*, etc. Present participles are event-denoting adjectives, and they can function as ascriptive attributes, ascribing an event to the head noun. The ascriptive attribution of such V-*ing*-N combinations is apparent in meaning, and can be tested by the predicative structure: ascriptive attributes can be used predicatively, such as *a beautiful picture* – *This picture is beautiful*.

- (3)
- a. The baby is sleeping.
 - b. The man is walking.
 - c. The sun is rising.
 - d. The leaves are falling.
 - e. The tower is leaning.
 - f. The water is sparkling.

The syntactic tests for phrasal status discussed in 8.3.1 that work for *interesting story* type of V-*ing*-N also work for the one in which V-*ing* is a present participle.

- (4)
- a. a soundly sleeping baby
 - b. a sleeping cute baby

Therefore, if the first constituent of V-*ing*-N is a present participle, V-*ing*-N is a noun phrase with ascriptive attribution.

It is possible that the combination Adj-N with ascriptive attribution is a compound because of its listed semantics, although Adj-N has the structure of phrases. Such compounds are not productive, and they are often diachronically developed and listed in the lexicon, e.g. *blackbird*, *sweetcorn*, *White House*, *short story*, *grey plover*. Adj-N in which the attribute is a present participle can also be an ascriptive compound, if the meaning is listed in the lexicon, e.g. *hummingbird*, *mockingbird*, *wading bird*, *flying fish*, *snapping turtle*, *running title*, *sleeping partner*. Because of their lexical status, V-*ing*-N compounds are unavailable for individual modification: **a humming yellow bird*, **a carefully wading bird*, **a flying ocean fish*, **a quickly running title*, **a soundly sleeping partner*, etc.

Adj-N compounds with ascriptive attribution, despite the regular phrasal forms, show semantic irregularity. They are listed in the lexicon. For example, while *Yellow Wagtail* is striking for its partly yellow colour, the *Grey Wagtail* is almost as yellow, and the *White Wagtail* is only partially, and not strikingly, white (Giegerich 2015: 110). The semantic irregularity is also illustrated in ascriptive V-*ing*-N compounds. These compounds are not assigned compositional interpretation. For instance, a *sleeping partner* ('a partner in a business who does not play an active role, esp. one who supplies capital'), as a compound, is a kind of partner, but does not assign it the

meaning ‘a partner who is sleeping’. A *mockingbird* is a kind of bird noted for their habit of mimicking the call of other birds, so a *mockingbird* that is not mocking is still a *mockingbird*. A *hummingbird* is a kind of bird noted for making a humming sound by the rapid vibration of their wings, but *hummingbirds* are not humming all the time. A *running title* (‘the title of a volume printed at the top of the left-hand test pages or sometimes of all text pages’) is not a title which is running. These examples can also be interpreted with regular semantics, but then they are not compounds, but rather noun phrases under that interpretation. The noun phrase version of the combination V-ing-N allows individual modification: *a constantly humming bird*, *a soundly sleeping partner*, *a vividly mocking bird*, etc.

We can have noun phrases, such as a *humming hummingbird* – a hummingbird which is humming, or a *sleeping sleeping partner* – a sleeping partner who is sleeping, where the first V-ing form is the ascriptive attribute of the head noun, and the head noun is an ascriptive V-ing-N compound.

Sleeping partner can be ambiguous with three interpretations. The first one is the compound *sleeping partner* with listed semantics. The second *sleeping partner* is a noun phrase which means ‘a partner who is sleeping’, and it has the same pattern as *sleeping baby*. The third *sleeping partner* is ‘a partner for sleeping’, which has the same pattern as *sleeping pill*, where *sleeping* is the associative attribute of the head noun. In the first two interpretations, *sleeping* is a present participle and functions as the ascriptive attribute of the head noun, whereas the third *sleeping* is an associative attribute, and therefore must be nominal. The question remains whether the associative attribute V-ing in *sleeping pill* is a gerund or an associated V-ing nominal. This will be discussed in the next section.

Ascriptive adjectives function as the ascriptive attribute of the head noun, e.g. *interesting book*, *boring story*, *funny story*, *cute girl*. Present participles have the same function, e.g. *sleeping baby*, *laughing girl*, *hummingbird*. Present participles having the same function as ascriptive adjectives is expected because participles are adjectives.⁷⁸

⁷⁸ In the examples such as *dental decay*, *bovine tuberculous*, *vernal equinox*, etc., the adjectives are not ascriptive attributes but associative attributes. However, the associative attribution is also expected, because those are associative adjectives.

8.4. Associative V-*ing*-N compounds

8.4.1. The analysis of the first constituent of V-*ing*-N compounds

V-*ing*-N compounds such as *drinking water*, *sleeping pill*, *washing machine*, etc. have associative attribution, with the meaning ‘N is associated with V-*ing*’. The head noun is associated with the event denoted by the V-*ing* form. The compound status of such associative V-*ing*-N combination is confirmed by its fore-stress because noun phrases do not have fore-stress (Giegerich 2004: 4). The first constituent of the compounds can be either a gerund or an associated V-*ing* nominal since both of them belong to the category of nouns and denote events. I will argue that the first constituent of compounds like *drinking water* is an associated V-*ing* nominal, not a gerund. My argument is based on the morphological restriction on associated V-*ing* nominals and the restriction on in V-*ing*-N compounding.

8.4.1.1. Constraints on associated V-*ing* nominals compared to gerunds

In chapter 3, gerunds and associated V-*ing* nominals have been contrasted with each other. Both gerunds and associated V-*ing* nominals have the distribution of nouns and thus belong to the category of nouns. They can be distinguished from each other by the internal phrase structure. Associated V-*ing* nominals, which are common nouns and head ordinary NPs, are compatible with determiners, adjective modification, and prepositional complements. In contrast, gerunds occur with object complements, adverb modification, perfect aspect, and passive voice.

Phrases headed by gerunds have the internal structure of VPs, which patterns the internal structure of phrases headed by finite forms of the embedded verbs. Phrases headed by associated V-*ing* nominal do not have the internal structure of VPs. Nouns are not theta-markers, and therefore associated V-*ing* nominals, even though they are nouns with argument structure representation, cannot theta-mark without the aid of a preposition. In *The building of the bridge took three years*, the associated V-*ing* nominal *building* takes a prepositional object, which corresponds to the direct object of the embedded verb, i.e. the NP complement of the predicate. However, verbs that take non-NP complements are not used in associated V-*ing* nominals because the means of transmitting a Θ -role is not available to non-NP

complements.^{79 80} Associated *V-ing* nominals are ungrammatical with sentential complements, infinitival complements, prepositional complements, adjectival complements (Grimshaw 1990: 77-78), raising constructions, Exceptional Case Marking, ditransitives, resultatives, verb-object idioms (Abney 1987; 14-15; Baker 1985: 6; Malouf 1998: 36; Fraser 1970: 90-91). Gerunds do not have such constraints, because phrases headed by gerunds have the internal structure of VPs.

(5)

- a. *The unexpected announcing that they are bankrupt shocked the customers.

Their unexpectedly announcing that they are bankrupt shocked the customers.

- b. *The being happy is important.

Being happy is important.

- c. *Their sudden deciding to leave disappoints us all.

Their suddenly deciding to leave disappoints us all.

- d. *His strong insisting on perfection has annoyed many co-workers.⁸¹

His strongly insisting on perfection has annoyed many co-workers.

- e. *The keeping using the muscle is good for the recovery, even though it hurts.

Keeping using the muscle is good for the recovery, even though it hurt.

- f. *His catching of Mary working encourages him to go back to work.

His catching Mary working encourages him to go back to work.

- g. *Our persuading of John to see the doctor was in vain.

Our persuading John to see the doctor was in vain.

- h. *We discussed the giving them of the old furniture.

We discussed giving them the old furniture.

- i. *Her hammering of the sheet flat made a horrible noise.

Her hammering the sheet flat made a horrible noise.

⁷⁹ If the verbs do not have complementation, there are associated *V-ing* nominals derived from them. Intransitive verbs do not take any complement. There are associated *V-ing* nominals of intransitive verbs, e.g. *Regular running is healthy – Running regularly is healthy*.

⁸⁰ Unlike NPs, *that*-clause, AdjPs, InfPs, etc. cannot occur after prepositions, e.g. **the announcing of that ...*, **the being of happy*, **the deciding of to do sth*.

⁸¹ In contrast to *insisting*, we can say *his strong insistence on perfection*. However, *insistence* is not a complex event nominal, but a result nominal. Result nominals or simple event nominals can take non-NP complements (Grimshaw 1990: 74).

- j. *The taking of advantage of him caused a commotion.

Taking advantage of him caused a commotion.

As we can see, in comparison to gerunds, associated *V-ing* nominals are more limited. However, these constraints are on the syntactic function of associated *V-ing* nominals, not on the nominalisation itself. That is to say, an associated *V-ing* nominal may still exist, even though it cannot occur in the structures which are available to the corresponding gerund. For example, although the sentences with an associated *V-ing* nominal in (5a) and (5f) are ungrammatical, in contrast to the grammatical gerund version, the associated *V-ing* nominal itself (e.g. *announcing*, *catching*) is well-formed, since we can have it in other structures, e.g. *The sudden announcing shocked everyone*, *The catching of a fish is pleasurable*. Therefore, what makes a difference should not be the constraints on the function of associated *V-ing* nominals, but the constraints on their word-formation.

All verbs have gerund forms except modal verbs, whereas there are more constraints on associated *V-ing* nominalisation. We need to find out whether there are gerunds which do not have a corresponding associated *V-ing* nominal, i.e. whether there are verbs that cannot be derived into associated *V-ing* nominals.

8.4.1.2. Verbs that are not applicable to associated *V-ing* nominalisation

Lees (1966: 66-67) notes that associated *V-ing* nominalisation does not commonly appear with “non-action” verbs, e.g. **his having of a hat*, **his believing of it*, **his liking of beer*, **his admiring of her*, although there are counterexamples showing that the associated *V-ing* nominal of stative verbs is acceptable.

(6)

- a. Knowing also involves a believing of something that is true.
- b. The admiring of richly dressed playgoers went on throughout performances.
- c. Pragmatism, perhaps more successfully than other philosophic positions, brings together the being of humans in the world and the knowing of the natural universe.

(examples from Oxford English Dictionary)

Despite the exceptions above, associated *V-ing* nominal forms of stative verbs are rare and limited. Meanwhile, there are also no associative *V-ing-N* compounds like **having hat*, **believing idea*, **liking beer*, etc. *V-ing-N* compounding is also not applicable to all *V-ing* nouns.

There is another clear limitation on the associated *V-ing* nominalisation, which appears in the case of psychological movement verbs. Grimshaw (1990) introduces the idea of a-structure: a structured representation which represents prominence relations among arguments. The external argument is the most prominent argument in the a-structure of a predicate. The hypothesis is that the a-structure of the derived noun has a suppressed position where an active verb has an unsuppressed one. If nominalisation suppresses the external argument of a base verb, it follows that only verbs with external arguments will undergo this process. This prediction explains a number of limitations on nominals, one of which is that non-agentive psychological causatives do not nominalise into complex event nominals. Associated *V-ing* nominals are generally complex event nominals, which are productively formed by suppression of an external argument. Therefore, associated *V-ing* nominals are not derivable from non-agentive psych verbs⁸² (Grimshaw 1990: 108-123): *frighten*, *depress*, *worry*, *interest*, etc.

(7)

- a. *Medication's depressing of the patients should be taken into account.
Medication's depressing the patients should be taken into account.
- b. *The situation's worrying of the public is bad for the economy.
The situation's worrying the public is bad for the economy.
- c. *We should avoid the exciting of the kids before they go to bed.
We should avoid exciting the kids before they go to bed.

Interestingly, there are no associative *V-ing-N* compounds whose first constituent is *depressing*, *interesting*, *worrying*, etc. Although those *V-ing* forms can modify nouns attributively, e.g. *interesting story*, *depressing music*, *exciting news*, etc., such *V-ing-N* is not a compound with associative attribution, but a noun phrase with ascriptive attribution; and the *V-ing* form is not a noun, but an ascriptive adjective. That is to say, if a verb has a gerund form but cannot derive into an associated *V-ing*

⁸² However, agentive psych verbs are available for associated *V-ing* nominalisation, e.g. *The entertaining/amusing of the children is my job*.

nominal, we also observe the absence of a corresponding associative *V-ing-N* compound. Thus, the constraints on associated *V-ing* nominalisation match the constraints on *V-ing-N* compounding.

8.4.1.3. The conclusion of the analysis

There are constraints on deriving verbs into associated *V-ing* nominals, compared to gerunds, and there are constraints on the formation of *V-ing-N* compounds; we notice that the constraints on associated *V-ing* nominalisation match the constraints on *V-ing-N* compounding. Thus, I propose that the first constituent of associative *V-ing-N* compounds is an associated *V-ing* nominal rather than a gerund.

Theoretically, the first constituent of associative *V-ing-N* compounds can be either a gerund or an associated *V-ing* nominal since both of them belong to the category of nouns and denote events. However, as discussed above, if gerunds are the first constituent of associative *V-ing-N* compounds, then we need a separate explanation why a large group of gerunds cannot occur in this position, e.g. **having hat*, **liking beer*, **depressing patient*, **worrying public*, etc. The constraints on the formation of associative *V-ing-N* compounds match the constraints on associative *V-ing* nominalisation, **his having of a hat*, **his liking of beer*, **medication's depressing of the patients*, **the situation's worrying of the public*, etc. Therefore, if an analysis only allows associative *V-ing* nominals as the first constituent of associative *V-ing-N* compounds, the need for such an explanation disappears, and the analysis becomes simpler and thus preferable due to Occam's razor.

8.4.2. Additional discussion of *drinking water* compounds

8.4.2.1. Attribution relation

V-ing-N compounds with associative attribution such as *drinking water* are semantically similar to the primary *N-N* compounds. The semantic relationship between the two constituents is like that which hold in *N-N* compounds. For example, *drinking water* is 'water for drinking' just as a *bath towel* is 'a towel for a

bath’, and a *sleeping pill* is ‘a pill which causes sleeping’ just as a *death blow* is ‘a blow which causes death’.

There is in English a massive range of constructions which in formal terms are perfectly regular attribute-head nominals but which fail to meet the criteria on semantic grounds. These fall in two groups and are often referred to as ‘primary’ and ‘secondary’ (‘synthetic’) compounds. Primary compounds are notable for their often idiosyncratic semantics. The meaning of such compounds is not regularly derived from the meaning of the two constituents in the way attributiveness determines the meaning. For instance, a *hair net* serves to manage unruly hair, a *mosquito net* keeps mosquitos out, while butterflies are captured using a *butterfly net* (Giegerich 2006). Here is another set of examples (Lass 1987: 200f), which reinforces the point:

(8)

milk bottle – bottle for containing milk

milkman – man who delivers milk

milk-float – float carrying milk

milk-fever – disease caused by lack of the calcium contained in milk

milk-tooth – tooth present while a young mammal is still drinking milk

The meaning of the compounds relies heavily on our knowledge whereby bottles contain things, people do things, and floats carry things, etc. Associative attribution, the ‘associated with’ relationship holding between the head and the attribute in such cases, is semantically very versatile and amenable to a wide range of specific interpretations, which relate to the speaker’s encyclopedic knowledge. Here is a list of *drinking-N* compounds, which have associative attribution, with the senses associated with *drinking* (examples from OED). First, with the sense ‘used for drinking’: *drinking bowl*, *drinking cup*, *drinking fountain*, *drinking glass*, *drinking liquor*, *drinking water*, etc. Second, with the sense ‘used for the sale or the consumption of drink’: *drinking club*, *drinking house*, *drinking inn*, etc. Third, with a special sense: *drinking habit/problem* ‘addiction to alcoholic liquor’.

Although the attribution typically performed by nouns is associative, there are N-N combinations with ascriptive attribution, such as *boy actor*, *baby girl*, *luxury flat*. One question is whether V-*ing*-N in which the first constituent is an associated V-*ing* nominal can be of ascriptive attribution. Firstly, when nouns function as ascriptive

attributes, the semantic relationship between the head and the attribute is ‘is’ (Giegerich 2006: 3), e.g. *boy actor* expresses that the actor is a boy. *Drinking water*, however, does not express that water is the drinking, but that water for drinking. Secondly, given the intersective ascription in the ascriptive N-N, forms such as *young boy actor*, *cute baby girl*, are structurally ambiguous: it is unclear whether in such cases the adjective modifies the entire N-N or merely the first noun (Giegerich 2009a: 194). In contrast, for V-ing-N compounds such as *drinking water*, no ambiguity arises: in *fresh drinking water*, *clean drinking glass*, the adjectives *fresh* and *clean* must modify the entire compound, not the first constituent. Therefore, V-ing-N compounds where the first constituent is an associated V-ing nominal must be associative attribution.

8.4.2.2. N-N compounds or phrases

The first constituent of compounds such as *drinking water* is a noun, specifically an associated V-ing. Such V-ing-N compounds belong to a larger group, N-N compounds.

In early generative grammar where nouns do not occur in the pre-head position in noun phrases (Lieber 1992: 13), all N-N combinations must be compounds. However, this position is wrong. If *wooden bridge* is a phrase, as it certainly is, then so is *steel bridge* (Giegerich 2004: 7 ff.). The morphology does not regularly procure denominal adjectives denoting place of origin other than countries – hence we find adjectival modifiers in *American car*, *British students* and noun modifiers in *London car*, *Edinburgh student*. It makes little sense to say that forms such as *wooden bridge*, *British student* are phrases while *steel bridge*, *stone wall*, *Edinburgh student* etc. have to be compounds just because nouns cannot be phrasal modifiers. The phrase status can be tested: the constituents of the N-N are not syntactically isolated, and they are amenable to individual modification. For example, *steel bridge* – we can have *steel suspension bridge*, or *stainless steel bridge*, in which *steel*, not *steel bridge* is modified by *stainless* (Giegerich 2015: 54). Therefore, the attribute-head combination of N-N is not always a compound. If there are phrasal N-N, then is it possible for the V-ing-N combination in which the first constituent is an associated V-ing nominal to be a noun phrase?

The answer is no. Those *V-ing-N* constructions must be compounds. Firstly, such *V-ing-N* constructions (e.g. *sleeping pill*, *drinking water*, *washing machine*) have fore-stress, but noun phrases do not have fore-stress (Giegerich 2004: 4). Secondly, the constituents of *V-ing-N* compounds are syntactically isolated and are not amenable to individual modification.

(9)

- a. walking stick – *walking bamboo stick
 drinking water – *drinking salt water
 smelling salts – * smelling sea salts
 running machine – *running comfortable machine
- b. walking stick – *slow walking stick
 reading comprehension – *fast reading comprehension
 running machine – *regular running machine
 baking powder – *slow baking powder

However, there are *V-ing-N* that are available for such syntactic operation, as in (10), in contrast to the ungrammaticality of (9a) and (9b)⁸³ respectively.

(10)

- a. cooking olive oil
 cooking corn oil⁸⁴
 heating brown coal
- b. public lending right
 civil engineering degree

Examples in (10a) have the same pattern as *steel suspension bridge* – N[NN]. In *cooking olive oil*, *cooking corn oil*, which means ‘olive oil/corn oil for cooking’, *cooking* functions as the associative attribute of the head noun *olive oil/corn oil*. Adj-N *brown coal* is a specific kind of soft coal (‘lignite’); under a phrasal interpretation (‘coal which is brown’) the tripartite form *heating brown coal* would be as ill-formed as **heating cheap coal* (Giegerich 2015: 71). However, the examples are associated *V-ing* nominals functioning as the associative attribute of a head noun, which is a

⁸³ These examples are ungrammatical, or are interpreted with the adjective modifying the *V-ing-N* construction as a whole, though this sounds unlikely.

⁸⁴ Although *olive oil* has end-stress, whereas other culinary oil have fore-stress, if *corn oil*, *peanut oil* are compounds, then surely so is *olive oil* (Giegerich 2015: 71).

compound noun. Therefore, it is not a syntactic operation in a compound, such as **heating cheap coal*, **cooking healthy oil*.

The examples in (10b) have the same pattern as *stainless steel bridge*, in which *stainless* modifies *steel*, rather than *steel bridge* as a whole. In *public lending right*, *public* is the associative attribute of *lending*, in *civil engineering degree*, *civil* is the associative attribute of *engineering*.⁸⁵ Therefore, in such Adj-V-ing-N combinations, the adjective modifies the first constituent of the construction V-ing-N, rather than the V-ing-N as a whole. This case belongs to a well-studied class of compounds which contain adjective-plus-noun phrases:

(11)

Lexical Integrity Principle

dental care insurance

nuclear energy policy

open door policy

cold weather payment

severe weather warning

There is widespread consensus in the literature (Carstairs-McCarthy 2002, 2005; Giegerich 2009a; Wiese 1996) that the phrases in such forms are to a greater or lesser extent lexicalised. Many, perhaps all, such embedded phrases are subject to the jargon-specific technical definition which they would not usually have when used in isolation. In *cold weather payment*, *severe weather warning*, the embedded phrases have technical definitions provided by the Met Offices: *cold weather* denotes an average of zero degrees Celsius or less over seven consecutive days; and to qualify for the term *severe weather*, thus triggering an official warning, the weather must similarly meet a technically defined standard of badness. Under such an analysis, phrase-like elements in lexically listed compounds must themselves be lexically listed (Giegerich 2015: 107-109).

The constructions *public lending right* and *civil engineering degree* are also compounds lexically listed for their specific semantics; thus the phrase-like element *public lending* and *civil engineering* are lexically listed. Thus, the examples are

⁸⁵ Note that there is a slight difference between the example *stainless steel bridge* and examples in (11b). The adjective *stainless* function as the ascriptive attribute of the noun *steel*, whereas in (11b) the Adj-V-ing is associative attribution.

actually not associative V-*ing*-N compounds in which the first constituent can be individually modified. Such Adj-V-*ing*-N constructions are compounds in which Adj-V-*ing* is a compound functioning as the associative attribute of the head noun, e.g. *public lending*, which is a compound noun, modifying the head noun *right* attributively, with associative attribution, and *public lending right* means ‘the right associated with public lending’. Therefore, *public lending right* and *civil engineering degree* should not be the counter-examples of the generalisation that the constituents of V-*ing*-N compounds are syntactically isolated and are not amenable to individual modification. The grammaticality of the examples does not mean that *lending right* and *engineering degree* are not compounds.

In summary, there are no arguments against the analysis that the construction V-*ing*-N must be a compound when the V-*ing* form is an associated V-*ing* nominal and functions as the associative attribute of the head noun.

8.5. Disambiguating stress doublets

Stress doublets such as *dáncing teacher* vs. *dancing t ácher* and *sl éeping partner* vs. *sleeping p ártner* show not only the stress contrast but also different attribution relations and the compound-phrase distinction. Such compounds parallel to phrases exist because the head noun of the combination fulfils the requirement of being capable of performing the action expressed by the verb in the form of V-*ing*, or because the overt combination admits twofold interpretation with regard to a naming relationship.

The stress doublets feature two types of ambiguity. In the first type, the distinction between compounds and noun phrases also exhibits a categorial difference between V-*ing* forms. In the second type, the distinction is purely on the basis of semantics. As an example of the first type, let us consider the ambiguity of *dancing teacher* – the fore-stressed *dáncing teacher* ‘a teacher who teaches dancing’ and the end-stressed *dancing t ácher* ‘a teacher who is dancing’. The contrast in stress also matches attribution relation – *dáncing teacher* is associative attribution, and the head noun *teacher* is associated with *dancing* (the profession); *dancing t ácher* is ascriptive attribution, which ascribes the *dancing* event to the head noun *teacher*. The categorial status of the V-*ing* form also differs – *dancing* in *dáncing teacher* is

an associated V-*ing* nominal; *dancing* in *dancing t ácher* is a present participle, an event-denoting adjective. Furthermore, *dancing teacher* is a compound because the meaning is listed, denoting a specific profession; whereas *dancing t ácher* is a noun phrase. When we talk about *a beautifully dancing teacher* or *a dancing beautiful teacher*, it is the noun phrase *dancing t ácher*.

Associative attribution naturally gives rise to being listed in the lexicon. This connection, in turn, establishes a link between associativeness and semantic non-compositionality as features in favour of fore-stress. Blocking effects are illustrated in the associative-ascriptive doublets such as *dancing teacher* vs. *dancing t ácher* and *dr íving instructor* vs. *driving instrúctor*. The associative form is listed with the fore-stress favoured by associative attribution and thereby enforcing the ascriptive sense in the freely generated end-stressed form (Giegerich 2001, 2015). The end-stressed V-*ing*-N is attributive with the interpretation composed from the lexical semantics of the two constituents, as in *driving instrúctor* ‘instructor who is driving’. In contrast, the interpretation of the fore-stressed V-*ing*-N arises idiosyncratically from the semantics of the head noun, and may be generalised as ‘for’ – *dr íving instructor* ‘instructor for driving’. However, what does ‘for’ actually mean? The interpretation depends on our encyclopedic knowledge.

V- <i>ing</i> -N	fore-stressed compound associative attribution associated V- <i>ing</i> nominal	end-stressed noun phrase ascriptive attribution present participle
<i>driving instructor</i>	‘a person who is hired by a new driver who is learning how to improve their skills’	‘an instructor who is driving’
<i>teaching staff</i>	‘professional personnel directly involved in teaching students’	‘a staff who is teaching (sb) (sth)’
<i>hunting dog</i>	‘a dog of a breed developed for hunting with or for humans’	‘a dog which is hunting (sth)’

Table 5. Stress doublets – type 1.

This type of stress doublets V-*ing*-N can be disambiguated, as shown in table 5: fore-stressed V-*ing*-N is a compound with associative attribution, where the first constituent is an associated V-*ing* nominal; end-stressed V-*ing*-N is a noun phrase with ascriptive attribution, where the first constituent is a present participle.

V- <i>ing</i> -N	fore-stressed compound listed semantics ascriptive attribution present participle	end-stressed noun phrase compositional semantics ascriptive attribution present participle
<i>flying fish</i>	‘a tropical fish that can jump above the surface of the water using its very large fins’	‘a fish that is flying’
<i>wading bird</i>	‘a kind of waterbird, especially one with long legs, that habitually wades, a wader’	‘a bird that is wading’
<i>mockingbird</i> <i>mocking bird</i>	‘a kind of bird known for the habit of mimicking the songs of other birds and the sounds of insects and amphibians’	‘a bird that is mocking sth/sb’
<i>revolving door</i>	‘a set of doors that people go through by pushing them around in a circle’	‘a door that is revolving’

Table 6. Stress doublets – type 2.

As for the second type of ambiguity, which is purely distinguished by semantics, as shown in table 6, let us consider the ambiguous example *sleeping partner*. The fore-stressed *sléeping partner* is ‘a partner in a business who does not play an active role, esp. one who supplies capital’, whereas the end-stressed *sleeping pártner* is ‘a partner who is sleeping’. Even though in both cases, *sleeping* is a present participle and functions as the ascriptive attribute of the head noun, *sleeping pártner* is a noun phrase, and the attribution ascribes the sleeping event to the head noun, whereas

sléeping partner is a compound, where *sleeping* is used metaphorically, denoting the property of this type of partner. When we talk about *a soundly sleeping partner*, it must be a partner who is sleeping (soundly), i.e. the noun phrase *sleeping p ártner*.⁸⁶

Similarly, the compound *húmmingbird* is individually lexicalised, denoting a bird species, in which *humming* functions as an ascriptive attribute, denoting the property of such birds (the humming sound created by their wings which flap at high frequencies audible to humans). In contrast, *humming b írd* is a noun phrase with transparent semantics, and the ascriptive attribute ascribes the humming event to the head noun *bird*. Table 6 shows more examples of such stress doublets.

For the V-*ing*-N doublets, the end-stress V-*ing*-N is a phrase with ascriptive attribution, and V-*ing* is a present participle; the corresponding fore-stressed V-*ing*-N is a compound, and it can either be an associative compound, in which the first constituent is an associated V-*ing* nominal, or an individually lexicalised ascriptive compound, in which the first constituent is a present participle.

8.6. Conclusion

This chapter discusses a particular type of attribute-head combination, in which the head noun is modified attributively by a V-*ing* form. The complexity of such combination lies in: firstly, the category of the X in X-N – the head noun can be modified attributively by an adjective or a noun. Secondly, the category of the V-*ing* form – it can be an adjective, either an ascriptive V-*ing* adjective or a present participle; it can be a noun, either a gerund or an associated V-*ing* nominal.

The attribution relation of V-*ing*-N is discussed – whether V-*ing* is an associative or ascriptive attribute of the head noun, and how the attribution relation matches the categorial status of V-*ing*. The compound-phrase distinction must also be taken into account, analysing how the distinction is related to the categorial status of the attribute, as well as the attribution relation.

⁸⁶ *Sleeping partner* can also be ambiguous in that the fore-stressed *sléeping partner* ‘a partner for sleeping (with)’ is a compound with associative attribution, in which *sleeping* is an associated V-*ing* nominal.

In the attribute-head combination X-N, X can be an adjective or a noun. *V-ing* that belongs to these two lexical categories can function as the attribute of nouns. Ascriptive *V-ing* adjectives and present participles belong to the category of adjectives, thus can modify nouns attributively, e.g. *interesting books, boring stories, tiring journey* with ascriptive *V-ing* adjectives, and *sleeping baby, laughing girl, falling leaves* with present participles. The ascriptive *V-ing* adjective ascribes a property to the head noun, and the present participle ascribes an event to the head noun. The ascriptiveness can be tested by the ability of the construction to be paraphrased as a predicate: *The books are interesting, The baby is sleeping*. Such *V-ing-N* are noun phrases, and the phrase status can be proved by individual modification: *a surprisingly boring movie, slowly falling leaves*. Some *V-ing-N*, in which a present participle functions as the ascriptive attribute, are compounds, even though they are in phrasal forms. Such compounds are not productive; they are often diachronically developed and are listed in the lexicon, e.g. *sleeping partner, hummingbird, mockingbird, running title*. Present participles can modify nouns attributively and form noun phrases with ascriptive attribution (e.g. *sleeping baby*), or ascriptive compound nouns (e.g. *sleeping partner*). Compounds such as *sleeping pill* ‘pill that is associated with sleeping’ are associative attribution, and *V-ing* is a noun. The first constituent of associative *V-ing-N* compounds can theoretically be either a gerund or an associated *V-ing* nominal. I have analysed it as an associated *V-ing* nominal. The analysis is based on that the constraints on associated *V-ing* nominalisation, compared to gerunds, which match the constraints on the formation of *V-ing-N* compounds. Associative *V-ing-N* compounding is productive and has associative attribution. The ‘associated with’ relationship holding between the head and the attribute in such cases is semantically very versatile, amenable to a wide range of specific interpretations, which relate to the speaker’s encyclopedic knowledge, e.g. *drinking water, drinking glass, drinking game, drinking fountain, drinking habit*.

The attribute-head combination is found in both compounds and phrases and can have either associative or ascriptive attribution. There is a distinction between noun phrases and compound nouns, and there are differences between the two types of attribution. We can tell whether a combination *V-ing-N* is a compound or a phrase and what the attribution relation is, according to the categorial status of the *V-ing*

form. If *V-ing* is an associated *V-ing* nominal, then *V-ing-N* is a compound with associative attribution. If *V-ing* is an adjective – either a present participle or ascriptive *V-ing* adjective, then *V-ing-N* is a noun phrase with ascriptive attribution. There is a case of mismatch: compounds in which a present participle functions as the ascriptive attribute of the head noun. Such *V-ing-N* compounds show a mix between the behaviour expected by the syntax and the behaviour associated with the lexicon. Ascriptive *V-ing-N* compounds such as *sleeping partner* and *hummingbird* have the form of a noun phrase but have the semantics of a listed lexicon. Although *sleeping partner*, like *sleeping baby* has a phrasal form, i.e. the first constituent of them is a present participle functioning as the ascriptive attribute, a *sleeping baby* is a baby that is sleeping, whereas a *sleeping partner* is not a partner that is sleeping. *Sleeping partner* is a compound that names the type of a partner, and *sleeping* is used metaphorically and ascribes the property to the head noun. These are *V-ing-N* compounds with the structure of phrases.

We can see that, like the constructions with *V-ing* forms discussed in previous chapters, the combination *V-ing-N* can be distinguished into different subtypes based on the syntactic distribution and the semantics of the *V-ing* form.

Chapter 9. Summaries and conclusions

This thesis has analysed the categorial status of different types of *V-ing* forms and compared them with each other. The subtle similarities and differences of those *V-ing* forms characterise different constructions and thus determine their syntactic, semantic and morphological status within the linguistic system.

The major work this thesis has done is minimising the syntactic differences and allowing the observed semantic differences to do the ‘heavy lifting’ in the analysis, rather than treating those as side effects of a claimed syntactic difference. Unlike previous research, including Huddleston & Pullum’s (2002) single category of ‘gerund-participle’ and Aarts’ (2007) Intersective Gradience, etc., this thesis separates syntax from semantics and does not assume that semantics has to be expressed in syntax.

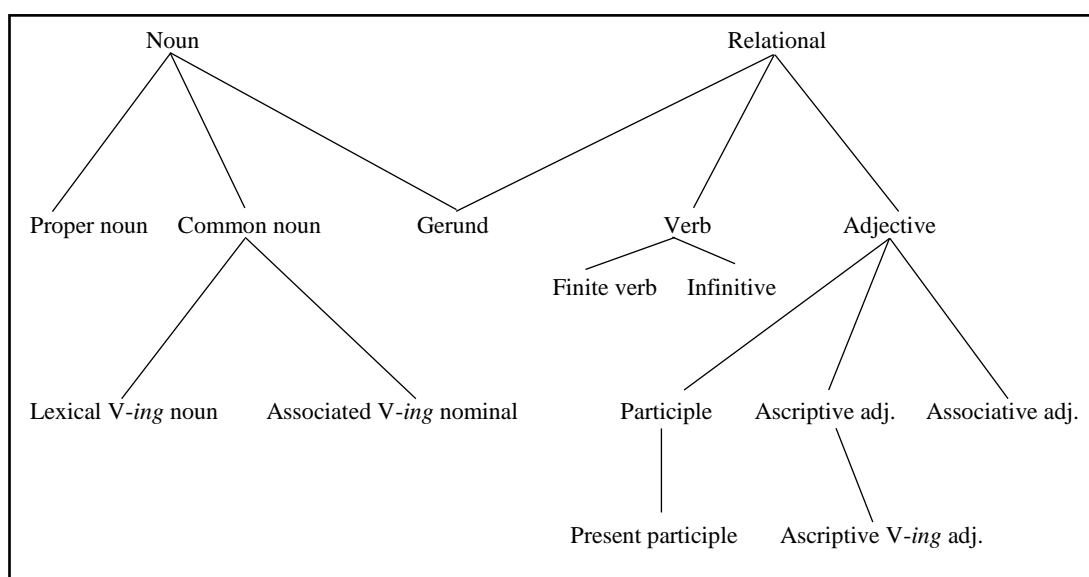


Figure 6. The hierarchy and categorisation of *V-ing* forms.

The criterion for the categorisation of a *V-ing* form is purely syntactic – specifically, the syntactic distribution of that *V-ing* form. A *V-ing* form belongs to a category, each of which includes several subcategories. The subcategories are distinct from each other because of their semantics or the internal structure of phrases headed by them, but they share the syntactic distribution. Within a category, there is usually a prototypical subcategory, and it has certain features which are due to its semantics. However, the features of the prototypical subcategory are not the criteria for belonging to the category, i.e. other subcategories are not excluded from the category

because of their non-prototypicality. Figure 6 illustrates this thesis' analysis of categorisation and hierarchy of *V-ing* forms (repeated from figure 2).

V-ing forms can belong to the category of nouns, which can be subcategorised into common nouns, including lexical *V-ing* nouns (e.g. *tall buildings, oil paintings*) and associated *V-ing* nominals (e.g. *The building of the bridge took three years, Brown's painting of his daughter is a delight to watch*), and gerunds (e.g. *Building the bridge took three years, Painting mountains is not easy*). *V-ing* forms can belong to the category of adjectives, which can be subcategorised into ascriptive adjectives (*The boy is charming, The movie is boring*) and present participles (e.g. *They are building the bridge, The boy is charming the audience*).

Like the discussion of *V-ing* forms, the combination *V-ing-N* is realised as different subtypes in terms of the attribution relation and the compound-phrase status. The subtypes can be distinguished from each other based on the syntactic distribution and the semantics of *V-ing*.

9.1. Gerunds and participles are distinct from each other

Huddleston & Pullum (2002) state that the distinction between gerunds and present participles cannot be sustained, and therefore conflate gerunds and participles into a single category of 'gerund-participle'. However, this thesis has argued that gerunds are distinct from present participles, and they belong to separate categories.

From the discussions throughout the whole thesis, we can see that there are distributional differences between gerunds and present participles. Gerunds have the syntactic distribution of nouns, whereas present participles have the syntactic distribution of adjectives. Thus, gerunds belong to the category of nouns, whereas present participles belong to the category of adjectives.

We can tell whether a *V-ing* form is a gerund or a present participle because certain positions in a sentence or certain combinations allow only gerunds, not present participles, and also the other way around. Phrases headed by gerunds, like other NPs, can be in argument positions, or function as the complement of a preposition in a prepositional phrase, whereas phrases headed by present participles cannot. Phrases headed by present participles, like other AdjPs, can function as modifiers of clauses,

modifiers of nouns or predicative complements, whereas NPs, including NPs headed by gerunds, cannot.

In the combination *be* + *V-ing*, the *V-ing* form can be either a gerund or a present participle. However, the difference is evident in meaning, and more importantly, the structures are different, because gerunds and present participles have different syntactic distributions. A gerund that follows *be* functions as the subject complement; whereas a present participle that follows *be* functions as the predicative complement of *be* and the composition expresses the progressive aspect. There are syntactic tests to diagnose whether *V-ing* that follows *be* is a gerund or a present participle, such as reversing the sentence.

The combination of a predicate verb (other than *be*) and a directly following *V-ing* form can be realised as different constructions, depending on the predicate verb. The construction illustrates the distribution of the *V-ing* form, by which we can tell whether *V-ing* is a gerund or a present participle. Since phrases headed by gerunds exhibit the syntactic behaviour of NPs, they can undergo a wide range of NP movement, such as passivisation, whereas phrases headed by present participles cannot (Bresnan 2001: 267-301). If a phrase headed by *V-ing* functions as the direct object of a transitive verb, *V-ing* is a gerund, because the direct object is an argument position that allows an NP, and phrases headed by gerunds are NPs. A *V-ing* form that follows an aspectual verb is a present participle. Aspectual verbs are subject-raising intransitive verbs, e.g. *keep*, *stop*, etc., and the following phrase headed by a present participle functions as the predicative complement. In addition to aspectual verbs, certain verbs of broad meaning in respect of posture or motion also take a phrase headed by a present participle, such as *sit*, *stand*, *come*, etc. These are intransitive verbs, and thus the following *V-ing* form cannot be a gerund, which heads an NP, but must be a present participle. The phrase headed by a present participle functions as a depictive complement of the matrix verb, and it is controlled by the matrix subject, e.g. *She came running in great haste*.

Considerable ambiguity is shown in the combination *V* + *NP* + *V-ing*. The *V-ing* form can either be a gerund or a present participle, depending on how we analyse the combination. From a syntactic point of view, if the *V-ing* form is a gerund, the phrase headed by *V-ing* functions as the direct object of the predicate verb, e.g. *I*

appreciated him/his repairing my bike. If the *V-ing* form is a present participle, the phrase headed by *V-ing* functions as the predicative complement of the predicate verb, e.g. *I kept him/*his cleaning the flat*. It can be disambiguated by the diagnostics for gerunds (Bresnan 2001: 267-301). There is also a semantic difference in the combination. If the *V-ing* form is a gerund, the intervening NP is only assigned a Θ -role from the gerund as its subject, but not from the predicate verb, and it is an Exceptional Case Marking construction. In contrast, if the *V-ing* form is a present participle, the intervening NP is assigned a Θ -role from the present participle as its subject, as well as from the predicate verb as its object, and it is an object-control construction. The difference can be illustrated by passivising the intervening NP. If the NP also functions as the object of the predicate verb, it can be passivised; otherwise, it cannot (compare *He was kept cleaning the flat* and **He was appreciated repairing my bike*). Additionally, if the intervening NP does not function as the object of the predicate verb, it can be moved from the subject position in the phrase headed by *V-ing*; otherwise, it cannot (compare *I appreciated my bike being repaired by him* and **I kept the flat being cleaned by him*).

With certain predicate verbs (esp. perception verbs), both interpretations are possible, e.g. *I saw him painting a flower*. The intervening NP can be in the genitive case (*I saw his painting a flower*), so *painting* is a gerund. Besides, NP + *V-ing* can be passivised (*Him painting a flower was seen by me*), and in the phrase headed by *V-ing* the NP can be moved from the subject position (*I saw a flower being painted by him*), which mean that the NP is not assigned a Θ -role from the predicate verb. However, the NP can also be passivised (*He was seen painting a flower*), which means the NP can be assigned a Θ -role from the predicate verb; therefore, the *V-ing* form is a present participle in this case and the phrase functions as the predicative complement with object control.

9.2. Gerunds and associated *V-ing* nominals

Gerunds are distinct from present participles because of distributional differences. Another type of *V-ing* form has been distinguished from gerunds – associated *V-ing* nominals, which have the same form and syntactic distribution as gerunds. Both gerunds and associated *V-ing* nominals belong to the category of nouns because they

have the distribution of nouns. Phrases headed by gerunds have the same syntactic functions as other NPs (including NPs headed by associated *V-ing* nominals), but the internal structure patterns that of VPs. The question is: why do phrases headed by gerunds have the internal structure of VPs, even though gerunds are nouns? Chapter 3 has contrasted gerunds with associated *V-ing* nominals and answered this question.

Gerunds have the distribution of nouns because phrases headed by gerunds can occur in argument positions and other positions that allow NPs. Meanwhile, phrases headed by gerunds have the internal structure of VPs, as we can see from gerunds' occurrence with a direct object, adverbial modification, the perfect aspect, and the passive voice, etc. Associated *V-ing* nominals, like other common nouns, are compatible with determiners, adjectival modification, pluralisation and a prepositional object. Compare the gerund in *Drinking water regularly is important to health* and the associated *V-ing* nominal *The regular drinking of water is important to health*.

Because nouns are not theta-markers, associated *V-ing* nominals, despite having argument structure representation, require a preposition to transmit theta-marking from them to their complements. For instance, in *the regular drinking of water*, the associated *V-ing* nominal *drinking* takes a prepositional object, which corresponds to the direct object of the embedded verb, i.e. the NP complement of the predicate (Grimshaw 1990: 77-78).

Gerunds are nouns derived from verbs and denote events, thus like associated *V-ing* nominals, gerunds are also nouns with argument structure representation. Gerunds, apart from belonging to the category of nouns, also inherit selectional features from the category of relationals. Thus, gerunds are theta-markers and take adverb modification. Therefore, gerunds can theta-mark on their own and phrases headed by gerunds have the internal structure of VPs.

From the perspective of morphology, all verbs, except modal verbs, can be derived into gerunds, whereas there are constraints on associated *V-ing* nominalisation. Associated *V-ing* nominals are not derivable from non-agentive psych verbs (Grimshaw 1990: 108-123): *frighten*, *depress*, *worry*, *interest*, etc. Compare **Medication's depressing of the patients should be taken into account* and *Medication's depressing the patients should be taken into account*.

In summary, although there is a structural difference between phrases headed by gerunds and phrases headed by associated *V-ing* nominals, and there is a morphological productivity difference between gerunds and associated *V-ing* nominals, due to the same syntactic distribution, both gerunds and associated *V-ing* nominals belong to the category of nouns.

9.3. Participles and adjectives

Present participles are distinct from gerunds because of the distributional difference between them. Present participles have been contrasted with another type of *V-ing* form – ascriptive *V-ing* adjectives, such as *interesting*, *boring*, *tiring*, *disturbing*, etc.

I have argued that participles, including present participles and past participles, are adjectives. The core part of my argument is the syntactic distribution of participles and the striking similarity between associative adjectives and participles. The symmetry captures the property of syncretism between a large class of prototypical adjectives (e.g. *charming*, *tired*, *cooked*, *drunk*, etc.) and the class of participles.

Participles have the syntactic distribution of adjectives. There is no categorial distinction between participles and adjectives. Phrases headed by participles have the same functions as AdjPs. However, in contrast to prototypical adjectives, participles lack certain features. Unlike prototypical adjectives, participles are not compatible with degree adverb modification, comparative/superlative forms, *seem* predication, *-ness* suffixation, and *un-* negation. However, as analysed in chapter 6, these features are not applicable to adjectives in general, but a specific type of adjectives – ascriptive adjectives. Ascriptive adjectives have property-denoting semantics, and it is the property-denoting semantics that credits those features. Therefore, participles, which denote events, do not have the features of ascriptive adjectives. Associative adjectives are a subclass of adjectives already known as not property-denoting. Associated adjectives, which denote entities, have striking similarity with participles. They do not have the features of ascriptive adjectives either. The similarity between participles and associative adjectives supports my argument that the differences are of a semantic nature and do not separate categories, and thus do not conflict with the analysis of participles as being adjectives.

Prototypical adjectives, ascriptive adjectives, have property-denoting semantics. Associative adjectives and participles are non-prototypical adjectives. The non-prototypical behaviour of associative adjectives and participles stems from the category mismatch – associative adjectives are adjectives with nominal semantics of denoting entities, and participles are adjectives with verbal semantics of denoting events. The different semantics bring about the subcategory features. Because of the property-denoting semantics and the gradability that often comes along with it, ascriptive adjectives are compatible with *seem* predication, degree adverb modification, comparative/superlative forms, *un-* negation, and *-ness* or *-ity* suffixation. Adjectives that are not property-denoting, i.e. associative adjectives and participles, do not have such features. Besides, because participles are adjectives derived from verbs and denote events, they are theta-markers and have the argument structure representation of the embedded verbs. So participles theta-mark all the arguments (compare *He is charming the audience* and **He is happy the audience*). That is why phrases headed by participles have the internal structure of VPs. Similarly, associative adjectives are entity-denoting, i.e. they have the semantics of nouns; nouns are not theta-markers. Thus associative adjectives cannot transmit a θ -role to the subject, i.e. associative adjectives cannot be used predicatively (e.g. *dental decay* – **The decay is dental*).

Some associative adjectives and participles can undergo a semantic shift, becoming ascriptive adjectives; and they tend to shift towards prototypicality. Once the adjectives have undergone the semantic shift, the nominal semantics of the associative adjectives and the verbal semantics of the participles are lost and turned into the adjectival semantics of ascriptive adjectives. Meanwhile, the subcategory features of associative adjectives and participles are also replaced by the features of ascriptive adjectives. For instance, the associative adjective *mental* as in *mental hospital* can gain property-denoting semantics and become an ascriptive adjective, which means ‘crazy’. Therefore, *mental hospital* can be ambiguous, because it can also mean ‘crazy hospital’, though the default interpretation is the associative one because of blocking effects. However, in *the mentalness of the hospital*, *mental* is unambiguously an ascriptive adjective, because the suffix *-ness* attaches to property-denoting adjectives. In *He is charming the audience*, where *charming* is a present participle, *charming* can undergo a semantic shift and become an ascriptive adjective

as in *He is charming*. The ascriptive adjective *charming* can be modified by a degree modifier, e.g. *He is very charming*. After the semantic shift, *charming* loses its event denotation and thus does not have argument structure representation. Therefore, even without *very* modification, we can still tell that in *He is charming*, *charming* is an ascriptive adjective, because the present participle *charming* must take a direct object.

The analysis of participles as being adjectives contradicts Huddleston & Pullum (2002) and traditional grammar, whereby participles are inflected forms of verbs. However, if participles were verb forms, why do they have the syntactic distribution of adjectives? In addition, chapter 5 has discussed how, if we assume participles to be inflected verb forms, there does not seem to be a plausible single morphological explanation how adjectives that are in the form of participles arise in the system. This assumption also poses problems in relation to other word-formation processes, such as the category-preserving *un-* prefixation and the right-hand headedness of compounding. The analysis of participles belonging to the category of adjectives, however, provides a consistent morphological analysis for prototypical adjectives that are in the form of participles. Participles are adjectives derived from verbs (e.g. *The boy is charming the audience*), as well as the corresponding prototypical adjectives (e.g. *The boy is very charming*). The relation is simply a semantic difference between event denotation and property denotation and a matter of a semantic shift to prototypicality.

9.4. V-*ing*-N compounds and phrases

After discussing the syntax, morphology and semantics of English V-*ing* forms and analysing the categorial status of V-*ing*, we have also discussed the combination V-*ing*-N. This discussion requires an understanding of the syntactic distribution and semantic denotation of different types of V-*ing* forms. The differences in attribution relation and the compound-phrase distinction are closely related to the categorial status of V-*ing*, which also shows that present participles and gerunds are distinct from each other.

V-*ing*-N is a particular type of attribute-head combination, in which the head noun is modified by a V-*ing* form. The complexity of the combination comes from that: firstly, the attributive modifier of nouns can either be an adjective or a noun;

secondly, the *V-ing* form can be an ascriptive *V-ing* adjective, a present participle, a gerund, or an associated *V-ing* nominal.

The attribution pattern of the combination can either be associative or ascriptive attribution. I have discussed how the categorial status of *V-ing* and the attribution of *V-ing-N* are related to each other. In ascriptive attribution, the attributes are typically adjectives, though ascriptive attribution can also be performed by nouns (Ferris 1993: 24). Associative attributes are typically nouns, though there are also associative adjectives (Giegerich 2015: 17-19). Therefore, if the *V-ing* form is an adjective, the combination *V-ing-N* should be of ascriptive attribution, since there are no associative *V-ing* adjectives; if the *V-ing* form a noun, the combination *V-ing-N* should be of associative attribution.

We have discussed the compound-phrase distinction since the *V-ing-N* combination can be realised as a compound noun or a noun phrase. The syntactic, semantic, and phonological properties of the lexicon and the phrase are used as diagnostics for the lexical or syntactic provenance of a given *V-ing-N* construction. Individual modification can be diagnostics for phrasal status (Giegerich 2015). Noun phrases are expected to have compositional semantics (Jespersen 1942: 137). While N-N may have fore-stress or end-stress, fore-stress uncontroversially indicates compound status. End-stressed Adj-Ns are phrases (Giegerich 1992, 2015; Plag 2003). How the compound-phrase distinction is related to the attribution of *V-ing-N* has been discussed: in general *V-ing-N* with associative attribution is a compound, and *V-ing-N* with ascriptive attribution is a noun phrase. However, examples such as *hummingbird* are compounds with ascriptive attribution. Such examples show a mismatch of the structure of phrases and semantics of listed lexicons.

Ascriptive *V-ing* adjectives and present participles are adjectives and function as the ascriptive attribute of the head noun, e.g. *interesting book*, *boring story*, *sleeping baby*, *falling leaves*, etc. The ascriptive attribution can be tested by the predicative structure, e.g. *The book is interesting*, *The baby is sleeping*. Such *V-ing-N* are noun phrases because the constituents of the combinations are amenable to syntactic operations, individual modification to be specific, e.g. *a surprisingly boring book*, *a soundly sleeping baby*. Some Adj-N combinations with ascriptive attribution, though in phrasal form, are not assigned compositional interpretation, e.g. *sleeping partner*,

hummingbird, *mockingbird*, etc. Because they are listed in the lexicon, they are V-*ing*-N compounds, and thus not amenable to individual modification. For instance, the compound *sleeping partner* is not assigned the compositional meaning ‘a partner who is sleeping’. If *sleeping partner* is interpreted with regular semantics, it is a noun phrase and allows individual modification, as in *a soundly sleeping partner*.

V-*ing*-N compounds that mean ‘N which is associated with V-*ing*’ are of associative attribution, such as *sleeping pill*, *drinking water*, *washing machine*, etc. The first constituent of associative V-*ing*-N compounds can either be a gerund or an associated V-*ing* nominal. I have analysed the V-*ing* form as an associated V-*ing* nominal. This analysis is preferred due to Occam’s razor because not all gerunds can occur in associative V-*ing*-N compounds; in addition, the constraints on associative V-*ing*-N compounds match the constraints on associated V-*ing* nominals.

The compound status of associative V-*ing*-N, such as *drinking water*, is confirmed by their fore-stress because noun phrases do not have fore-stress (Giegerich 2004: 4). There are stress doublets, such as *dáncing teacher* vs *dancing t ácher*. Such doublets show not only the stress contrast, but also different attribution relations, the compound-phrase distinction, and V-*ing* forms of different categories. Associative attribution naturally gives rise to listing, and this establishes a link between associativeness and semantic non-compositionality as features in favour of fore-stress and compounds (Giegerich 2001, 2015). For the fore-stressed *dáncing teacher* ‘teacher who teaches dancing’, *dancing* is an associated V-*ing* nominal, functioning as the associative attribute of the head noun, and because of the fore-stress and listed semantics, *dáncing teacher* is a compound. For the end-stressed *dancing t ácher* ‘teacher who is dancing’, *dancing* is a present participle, functioning as the ascriptive attribute of the head noun, and it is a phrase since we can have *a beautifully dancing teacher*. Stress contrast is also exhibited by the compound *húmmingbird* and the noun phrase *humming b írd*. V-*ing* is a present participle and functions as the ascriptive attribute of the head noun in both cases, they are distinguished purely by semantics. The compound *hummingbird*, which is fore-stressed, has listed semantics, whereas the phrase *humming bird*, which is end-stressed, has transparent semantics.

The attribute-head combination V-*ing*-N is found in both compounds and phrases, and the attribution relation can either be ascriptive or associative. The V-*ing* form

can be an adjective – a present participle or an ascriptive *V-ing* adjective, and function as the ascriptive attribute of the head noun; the *V-ing* form can also be an associative *V-ing* nominal, and function as the associative attribute of the head noun. Associative attribution naturally gives rise to listing. Therefore, *V-ing-N* with associative attribution should be a compound, and *V-ing-N* with ascriptive attribution should be a noun phrase. There is also a case of mismatch: *V-ing-N* compounds with ascriptive attribution. Such *V-ing-N* is a compound with phrasal form. The phrasal form, but listed semantics show a mix of syntax and lexicon.

9.5. Concluding remarks

The intriguing sophistication of English *V-ing* forms lies in the fact that different syntactic distributions and semantic denotations are realised via this identical form. I have in this thesis analysed the syntax, morphology and semantics of different types of *V-ing* forms so as to categorise them. I have attempted, in particular, to identify the categorial status of gerunds and participles and distinguish gerunds from present participles.

The study of English *V-ing* forms in this thesis is synchronic. Thus, how the categorial status of *V-ing* forms changes over time has not been taken into consideration. *V-ing* forms have developed new meanings over time; for instance, event-denoting *V-ing* nouns have gained entity denotation, and event-denoting adjectives have gained property denotation. The syntactic distribution of different *V-ing* forms might also have changed. Thus, the categorial status of *V-ing* forms at different times of the English language may be subject to change. How this thesis categorises *V-ing* forms could also be applied to diachronic studies; we can analyse the categorial status of *V-ing* forms in each period of English history and see how language changes.

Cross-linguistically, this thesis has mentioned the parallel between English and German participles. The analysis of participles being adjectives is also applicable to German participles. It will be worthwhile to broaden the scope to study patterns across a wider range of Germanic and Romance languages, as well as their diachronic development.

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