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# Synchronic and Diachronic Aspects of Adnominal Past Participles in English

# （英語における名詞修飾過去分詞の共時的通時的諸相）

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# Synchronic and Diachronic Aspects of Adnominal Past Participles in English

by

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## Abstract

Past participles have verbal valence and an adjectival function; they belong to the verbal inflectional paradigm but modify nouns as adjectives do. This dual nature has intrigued generative linguists since the 1960s and there is a growing body of literature on adnominal past participles in Present-day English. Yet there are still many understudied aspects of them. On the other hand, the question of how adnominal past participles in Present-day English were developed from their counterparts in Early English has received little attention. This thesis deals with adnominal past participles in English from both synchronic and diachronic perspectives. Using the theory of generative grammar, I analyze the relationship between meaning and form of adnominal past participles in Present-day English

and explain their dual nature described above. As regards their diachronic aspects, I report and explain certain changes that took place in their history, based on corpus data and *OED*.

In Chapter 1, after a few remarks on the history of research in the field, I describe the main purpose and organization of this thesis.

In Chapter 2, I provide a systematic review of the literature and use certain semantic criteria to decide the relation between their meaning and form. Based on those criteria, I propose that the verbal source of past participles comes from certain types of eventualities and the various types of prenominal past participles share a generalized basic structure.

Chapter 3 clarifies the internal structure and the predication relation between postnominal participles and the head noun. Certain observations shed light on the structural parallelism between reduced relative clauses and small clauses. Observing that relativization poses some problems for the recent labeling theories, I propose that categorical features must play important roles in labeling.

Chapter 4 reports a few hitherto unnoticed historical facts about prenominal past participles. Based on corpus data and *OED*, I show that the emergence of certain types of prenominal past participle is part of the latest developments in the history of past participles. I also provide an explanation of these developments from a theoretical perspective.

Chapter 5 discusses loss of some word orders in prenominal and postnominal participial phrases and participial adjuncts. I show that earlier English allowed prenominal past participles to take postnominal PP adjuncts and complements and PP-fronting in participial adjuncts. It is argued that all these changes are related with information structure and semantic and syntactic constraints.

Chapter 6 presents a grand summary of the discussion in this thesis and addresses some residual issues for future research.

# Abbreviations and Notational Conventions

| | |
|---|---|
| a | (in dates) ante 'about' [within 25 years before] |
| ACC | accusative |
| A(P)/Adj(P) | adjective (phrase) |
| Adv | adverb |
| Asp(P) | aspect (phrase) |
| Aux | auxiliary |
| c | (in dates) circa 'approximately' [within plus or minus 25 years] |
| cf. | confer 'compare' |
| C(P) | complementizer (phrase) |
| COCA | Corpus of Contemporary American English |
| Compl | complement |
| D(P) | determiner (phrase) |
| EME | Early Middle English |
| EModE | Early Modern English |
| EOE | Early Old English |
| F | feminine |
| GEN | genitive |
| GloWbE | Corpus of Global Web-Based English |
| Gram | grammatical |

| | |
|---|---|
| H | head |
| Foc(P) | focus (phrase) |
| Lex | lexical |
| LF | logical form |
| LME | Late Middle English |
| LModE | Late Modern English |
| LOE | Late Old English |
| M | masculine |
| ME | Middle English |
| ModE | Modern English |
| N(P) | noun (phrase) |
| NOM | nominative |
| OE | Old English |
| *OED* | *Oxford English Dictionary* |
| O/Obj | object |
| ON | Old Norse |
| Op | operator |
| P(P) | preposition (phrase) |
| PE | Present-day English |
| PF | phonological form |
| PL | plural |
| POS | possessive |
| PPCEME | The Penn-Helsinki Parsed Corpus of Early Modern English |
| PPCME2 | The second edition of The Penn-Helsinki Parsed Corpus of |

| | |
|---|---|
| | Middle English |
| PPCMBE | The Penn-Helsinki Parsed Corpus of Modern British English |
| Pred(P) | predicate (phrase) |
| S | spatial |
| S/Subj(P) | subject (phrase) |
| SC | small clause |
| SG | singular |
| Spec | specifier |
| *t* | trace |
| T | temporal |
| T(P) | tense (phrase) |
| Top(P) | topic (phrase) |
| v(P) | light verb (phrase) |
| V(P) | verb (phrase) |
| Voice(P) | voice (phrase) |
| *vs.* | versus |
| YCOE | The York-Toronto-Helsinki Parsed Corpus of Old English Prose |
| | |
| * | to indicate that a given expression is ungrammatical |
| # | to indicate that a given expression is grammatical but unacceptable |
| $_{i}/_{j}$ | index |
| **Ø** | empty element |

| | |
|---|---|
| VAG | (corpus tag for ) present participles |
| VAN | (corpus tag for) passive participles |
| VB | (corpus tag for) infinitival verbs |
| VBN | (corpus tag for) past participles in OE and perfect participles in ME and ModE |

# Chapter 1

## General Introduction

In many ways, the whys and hows of the semantics and syntax of adnominal past participles have intrigued generative linguists since at least the 1960s. One of the primary concerns in the early literature was the question of their categorical status. Since the 1970s, it has been observed that the prototypical category fulfilling the position of prenominal modifiers is 'adjective', while the categories for postnominal modifiers include 'adjective', 'participle' and 'clause'. With increasing interest in arguments bearing certain semantic roles in the 1980s, linguists began to use argument structure theory to explain the dual nature of past participles. Subsequently, in the early 1990s, there developed a new branch of generative theory, which unites in phrasal syntax the organization of both words and phrases. The concerns of researchers in the field have then included the word-internal structure of them, especially since the early 2000s. Most of the latest studies have concentrated on the question of how distinct interpretations such as stative, resultative and eventive interact with lexical semantics and argument structure. While research has been conducted to increase the understanding of adnominal participles from various perspectives, there have been imbalances in research interests. Involving both stativity and eventuality, prenominal participles have been studied more extensively than postnominal ones. In particular, some syntactic aspects of predication involved between postnominal participles and the head noun have not been previously made clear. One the other hand, the literature has largely ignored diachronic aspects of

both prenominal and postnominal participles.[1]

The research in this thesis was conducted with the aim of reporting and explaining some facts concerning these two ignored aspects. Of course, it also locates a systematic review and summary of the previous literature on synchronic aspects of prenominal participles and deals with some unresolved issues. This thesis consists of two substantive chapters on adnominal participles in Present-day English and another two on the history of them, sandwiched between this introduction and a concluding chapter. Chapters 2 and 3 are concerned with their synchronic aspects and Chapters 4 and 5 are concerned with their diachronic aspects.

Chapter 2 is organized into three sections, the first of which being concerned with types and interpretations of prenominal participles and the remaining two with prenominal participial formation. I first make classifications of prenominal participles according to their different syntactic and semantic properties: 1) adjectival *vs*. verbal; 2) noun-based *vs*. verb-based; 3) transitive-based *vs*. unaccusative-based *vs*. unergative-based; and 4) stative *vs*. resultative *vs*. eventive. Such classifications are all familiar ones. Two things, however, are novel here. Firstly, I identify a group of unergative-based participles discussed in Bresnan (1995) as 'metaphysical noun'-based participles and secondly and importantly, I provide the following criteria to identify stative and eventive participles as such.

(1) Criterion for Eventive Participles (CEP):
Be Eventive if you involve Temporal-eventuality. Otherwise, be Stative.

(2) Criterion for Stative Participles (CSP):
Be Stative if you involve Spatial-eventuality. Otherwise, be Eventive.

The remaining two section of Chapter 2 address the issue of participial formation.

The chapter in its second section emphasizes the following properties:

(3) The verbness of past participles comes from the eventualities they involve.

(4) The eventive interpretations of past participles are produced through grammatical aspect rather than attributed solely to a verbal projection.

It is also shown that two types of noun-based (or denominal) participles share a similar structure, on the one hand, and differ with respect to the richness of their structure, on the other hand. In its third section, Chapter 2 summarizes conditions on participial formation presented in the literature and shows that they make up a family of conditions as such.

Chapter 3 aims to clarify the internal structure and the predication relation between postnominal participles and the head noun. I analyze postnominal participles as reduced relative clauses with a predicate structure. Another goal of the chapter is to solve some problems of labeling in relavization. In particular, I propose that:

(5) Reduced relatives have a predicate structure like small clauses, both projected by a predicate head $Pred^0$. The head noun originates as an internal argument of the predicate and raises to the Spec of PredP, whereby predication is produced. The noun subsequently moves out of PredP to the surface position, whereby relativization is completed and a modification relation is produced.

(6) Relavization is triggered by categorial features, in particular those of the determiner head $D^0$ and the noun to be relativized. After moving out of PredP, the noun merges with it, yielding an unlabeled syntactic object. In the need of identifying the categorical status of the derived object at the interface, the computation utilizes relevant categorial features. In particular, the nominal feature of the noun is probed by the unsatisfied counterpart on $D^0$,

which renders the noun active and available for labeling. As a result, the syntactic object composed of the noun and PredP is labeled NP.

The diachronic chapters discuss some changes that happened in the history of adnominal participles. Chapter 4 deals with aspectual changes, all of which happened with prenominal participles, as listed below.

(7) a. Eventive participles came to be available as prenominal modifiers since ME (1150~1500);
b. Unaccusative-based participles came to be available as prenominal modifiers throughout LME and EModE (1350~1700);
c. A certain type of unergative-based participles came to be available as prenominal modifiers in ModE (1500~1900).

It is shown that each of the changes was triggered by a particular factor and underlain by an aspectual change. In particular, it is shown that inner aspect (or Aktionsart) played a crucial role in prenominal participial formation in OE but after OE outer aspect also became active and has played increasingly important roles. Since outer aspect does not have restrictions on lexical meanings of verbs, various types of verb including unergatives and unaccusatives came to be available as inputs of prenominal participles. With the increasing role of outer aspect, more participles came to be grammatically derived and various eventive interpretations became available.

Chapter 5 is devoted to explanation of certain changes in word order, as listed below.

(8) a. Participial phrases spilt around the head noun were lost throughout ME and EModE;
b. PP-fronting in postnominal participial phrases was lost in LModE;
c. PP-fronting lost in ME for finite clauses and in ModE for non-finite

participial clauses.

The first change was attested in split participial phrases, which were available in OE with a certain frequency but after OE it began to decline until it disappeared in ModE. It will be shown that their loss was due to the emergence of a semantic constraint on split constructions in English. The second change concerning word order is the loss of PP-fronting. What is interesting is that there was an asymmetry between finite and non-finite participial clauses including postnominal participial phrases with respect to when PP-fronting was lost, as shown in (8c). I will argue that the loss of PP-fronting in postnominal participial phrases and other non-finite participial phrases interacted with information structure, on the one hand, and the asymmetry between them was a result of a certain syntactic constraint.

Chapter 6 concludes this thesis, presenting summaries the discussion in each of the substantive chapters and some residual issues.

## Notes to Chapter 1

1. Henceforth, the word ‘past’ is omitted; unless otherwise specified, when I refer to ‘participles’, I am referring to past participles.

Language is vertical as well as horizontal.

- Dwight Bolinger

# Chapter 2

# Prenominal Past Participles in Present-day English: Type, Interpretation and Formation

## 2.1. Introduction

Adnominal participles in PE have been discussed from various perspectives in the literature. The adjectival *vs*. verbal distinction of categories and the lexical *vs*. syntactic distinction of formation have composed the majority of discussion since Wasow (1977). Constraints on the formation of prenominal participles in connection with argument structure have also been debated on since Bresnan (1982). The internal structure of postnominal participles in connection with temporality and aspectuality was first discussed in Hudson (1973). Empirical understanding of the meanings of prenominal and postnominal participles has taken a big step forward since Bolinger (1967). The detailed discussion of pragmatics of prenominal participles was first given in Ackerman and Goldberg (1995). Recent studies such as Embick (2004), Sleeman (2011), McIntyre (2013, 2015), Alexiadou et al. (2014) and Bruening (2014) have concentrated on the formation in terms of Distributed Morphology (DM) and have contributed to discovery of the minority types of participle. While each of the individual studies has made its own contribution to the field, debates have been about the formation, with it still remaining scattered among various types of participle. On the other hand, the much talked about stative *vs*. resultative *vs*. eventive distinction has faced a problem of lacking an accurate and effective criterion

for it.

This chapter is devoted mainly to sorting out the various types of participle in terms of syntactic and semantic categories based on their syntactic behaviors and interpretations and providing semantic criteria to distinguish eventive *vs*. resultative *vs*. stative participles (Section 2.2), to providing a unified syntactic representation of participial formation (Section 2.3) and to identifying the syntactic and semantic constraints on the formation of prenominal participles (Section 2.4). A general summary of the discussion in this chapter is given in Section 2.5.[1]

## 2.2. Type and Interpretation

Since Wasow (1977) made a distinction between adjectival and verbal participles, quite a number of subsequent studies have tried to identify the argument of the base verb of participles. Many had insisted that prenominal position was preserved for adjectives only and treated participles as derived adjectives that have undergone category inversion in the lexicon. With the gradual increase in understanding the role played by argument structure in syntax, however, it was realized that the distinction of the participles in terms of lexical categories was insufficient. Subsequently, with the introduction of DM, the earlier adjectival *vs*. verbal distinction was replaced by the stative *vs*. eventive distinction. In light of the fact that most, but not all, prenominal participles denote result states in addition to static states, the word-internal organization of the participles began to attract attention and scholars have tried to explain the interpretive distinctions in terms of DM. While the understanding of the participles has been increasing, new problems have been unavoidable. This section is devoted to reclassifying the participles and to providing

criteria to distinguish stative *vs*. resultative *vs*. eventive participles.

### 2.2.1. Adjectival *vs*. Verbal

The term 'adjectival participle' is in most cases used to refer to participles that are adjectives in nature whereas 'verbal adjective' refers to those that have clausal structures or argument structures. Wasow (1977) and many subsequent works advocate some diagnostics for the adjectivity of adjectival participles. First, prenominal position is reserved only for adjectives in English. This, however, is an overgeneralization if we take the adjective as one of the four parts of speech as traditionally termed since Chomsky (1970). If 'adjective' represented a functional category to modify nouns, there would be no need to make distinctions between adjectival and verbal participles. Indeed, participles vary according to their syntactic behaviors. The literature has thus paid attention to the variation. For example, adjectival participles can follow copular verbs such as *seem*, *remain*, *sound* and *look*, as shown in (1), which are considered as selecting only adjectives, as shown in (2), which leads us to consider participles in (1) as adjectives.

(1) a. John remained elated.
    b. John seemed annoyed at us.
    c. John sounded convinced to run. (Wasow (1977: 339))

(2) a. John acted happy.
    b. John became angry at the world.
    c. John looked eager to win. (Wasow (1977: 339))

However, this is inadequate to serve as a diagnostic to judge whether or not prenominal participles are adjectives that are lexically derived, because verbal participles can also appear in post-copula position. In (3a), the participle *ordained* can

only be a verb. If the participle is an adjective, it would turn out that the NP *a deacon* cannot receive a thematic role, violating Full Interpretation, and its case remains unassigned, leading to violence of Case Filter.[2] The same holds true for (3b).

(3) a. Edward already acts ordained a deacon.
b. John sounds elected President. (Nishio (1989: 22))

Sleeman (2011) also observes that *carefully opened* in the position after *remain* as in (4a) is a verb phrase in that an adverb like *carefully* cannot modify adjectives, as shown in (4b).

(4) a. The package remained carefully opened.
b. * The package remained carefully open. (Sleeman (2011: 1571))

Therefore whether a given participle is allowed in post-copula position is independent from whether it is adjectival or verbal. The determining factor is instead whether the participle denotes a state that holds after the prior event, as implied by Gehrke (2015) and McIntyre (2015).

Another diagnostic is that the negative *un-* can attach to participles, as shown in (5), as well as to adjectives, as shown in (6).

(5) a. Our products are untouched by human hands.
b. The island was uninhabited by humans.
c. All his claims have been unsupported by data. (Wasow (1977: 339))

(6) unfriendly, unhappy, unspectacular (Levin and Rappaport (1986: 626))

Moreover, there is a fact that *un*-prefixed participles like those in (5) have no corresponding verbs, as shown in (7).

(7) a. * Human hands untouch our products.

b. * Humans uninhabited the island.
c. * Data have unsupported all his claims. (Wasow (1977: 339))

This leads one to predict that prenominal participles are adjectives rather than verbs. Such a prediction, however, is not correct becasue many participles cannot be attached by the prefix *un-*, especially those modified by an adverb. Even if *un-*prefixed participles can be considered as adjectives, it does not necessarily mean that participles that are not prefixed with *un-* as exemplified in (8) must be adjectives.

(8) a. It would seem that if a boxer, for example, was able to control the range that a similarly practiced Wing Chun practitioner would have a difficult time, until the actually touched hands with each other.
b. In addition to the already supported MySQL and MSSQL…
c. It became a frequently spoken word in the international speeches, …
d. Looking at the goals involved, it backs up the oft used phrase, …
(GloWbE)

Still another diagnostic for adjectival characteristics exhibited by participles is that the degree adverb *much* modifies a verb but not an adjective, as shown by the following data. The adverb is required in (9a) while it is excluded in (9b).

(9) a. John very *(much) respects/frightens/appreciates your family.
b. John very (*much) fond of/grateful to/angry with your family.
(Wasow (1977: 340))

What is important is that *much* may be absent, as shown in (10). This would follow that the participles may or may not be adjectives.

(10) a. Your family is very (much) respected/frightened/appreciated.
b. a very (much) respected/frightened/appreciated family
(Wasow (1977: 340))

To sum up, participles show distinct syntactic behaviors, according to which they are classified into adjectival and verbal participles, and not all passive participles in the prenominal position are adjectives.[3]

### 2.2.2. Verb-based *vs*. Noun-based

When we speak of noun-based participles (*a talented boy*, *a blue-eyed girl*), they are not participles in a strict sense because they lack verbal source, though the term is used here only for expository purposes. They are adjectives, with the morpheme *-ed*, which was once a marker of accomplishment, assigning adjectivity. This suffix in this use attaches to a noun or noun phrase to derive adjectives (noun-based participles, here) meaning 'having X, be provided with X' (Plag (1993: 95) and many others). This makes this type differ from the other, verb-based participles, in both meaning and formation. What concerns us here, however, is any conceptual correlation between the adjectival suffix *-ed* and the participial one. Let us first have a look at verb-based participles.

A typical characteristic of verb-based participles is that they denote a result state arising from the prior event/action (cf. Visser (1963-73: 1250), Parsons (1990: 236), Langacker (1991: 202-203), Haspelmath (1994), Bresnan (1995), Embick (2004), McIntyre (2013) and many others). I, borrowing the idea from Grimshaw (1990: 40, 129), represent this as follows, where the participle have two components: event(or process) and state.

(11) Result state: <event/process, state>

This in fact applies for various resultative constructions, as exemplified in (12) and illustrated in (13).

(12) a. They have published ten books this year.
b. They flattened the metal.
c. They broke the vases into pieces.
d. The car is damaged.

(13) a. <publish, shaped as books>
b. <hit, flat>
c. <hit, broken into pieces>
d. <hit, damaged>

Notewothry is the fact that the event/process component may be absent. Compare *Dean has arrived* and *Dean is here*. The former implies that Dean has experienced an arriving event and is in a state as a result of that event, whereas the latter is interpreted only as expressing that Dean is in a state of being here, not entailing any prior event (cf. Ritz (2012) for more detailed discussion). Diagramed representations, informal again, of them would then be like the following, which lacks the event componenet.

(14) a. <arrive, here>
b. < , here>

*The metal is flattened* and *The metal is flat* are represented likewise.

(15) a. <hit, flat>
b. < , flat>

This analogy now extends to prenominal verb-based participles as well as noun-based participles, as exemplified in (16) and illustrated in (17).

(16) a. recently published books, the carefully opened door, a flattened metal
b. talented people, a down-hearted person, wooded areas
c. flowered trees: trees that have flowered *vs*. trees having flowers

(17) a. the carefully opened door: <open (or pull), open>
b. the open door: < , open>
c. talented people: < , with/having talent>

In the case of verb-based participles, both component are present. In contrast, in the case of simple adjectives and noun-based participles, which are also adjectives in the strict sense, the event component is absent. Thus, noun-based participles are correlated conceptually with verb-based participles, as indicated by the parallelism regarding the state component.

The fact that certain participles are ambiguous out of an appropriate context then follows. *Flowered trees* may imply that the trees have undergone flowering process, as a result of which they have flowers, or simply that the trees have flowers. In the latter case, unlike the former, the participle (adjective, in a strict sense) does not linguistically imply that the trees have grown flowers, though it can be inferred in the real world that I decorated the trees with flowers or the tress grew flowers themselves.

Such ambiguity also arises with a group of participles such as *experienced* and *practiced*. Literally, they are interpreted as 'That has experienced' and 'That has practiced'. They, however, are not always interpreted that way. Interpretations such as 'That has experiences, knowledge or skills' are preferred instead. This leaves a possibility out there that they are noun-based despite their morphological similarity to verb-based participles. This gives something like *experience*$_{noun}$*-ed* or like *knowledge-ed*, for example, where the base noun is not pronounced. The same applies to others such as *travelled*. Detailed discussion of how such participles are formed is given in Section 2.3.2 and their diachronic aspect is discussed in Section 4.4.

### 2.2.3. Transitive-based *vs*. Unaccusative-based *vs*. Unergative-based[4]

It has been observed that prenominal participles are only formed from transitive and unaccusative verbs.

(18) a. recently published books, home-made pizza
b. an escaped person, freshly fallen snow
c. the melted cheese, frozen lakes

Participles of unergative verbs cannot premodify nouns unless they are combined with a particle that contributes to the composition of some kind of result state, as shown below. Some fossilized participles, however, have unergative sources, without being modified by any particle, for example, *learnéd* in (19b).

(19) a. * run man, coughed patient (Levin and Rappaport (1986: 654))
b. a run-away slave, an over-exercised athlete (Bresnan (1995: 13))
c. well-spoken people, a learnéd scholar

In what follows, we discuss a certain type of participles, which are presented as unergative-based participles in Bresnan (1995) and as transitive passive participles in Bruening (2014).

(20) a. a well-prepared teacher (a teacher who has prepared well)
b. a confessed killer (a killer who has confessed)
c. a recanted Chomskyan (a Chomskyan who has recanted)
d. (un)declared juniors (juniors who have (not) declared [majors])
e. a practiced liar (a liar who has practiced)
f. an unbuilt architect (an architect who has not built [buildings])
(Bresnan (1995: 13))

(21) a. a(n) (un)committed evangelical
b. an avowed communist
c. a sworn enemy

d. an admitted murderer
e. a professed atheist (Bruening (2014: 417))

Such verbs differ from canonical unergatives in that they neither encode manners of motion nor denote non-directed motions (cf. Levin and Rappaport (1995: 186-187) for relevant discussion on characteristics of unergative verbs). One could argue that they are object-drop transitive verbs, as discussed by Merlo and Stevenson (2001), or verbs with unexpressed object, as discussed in Levin (1993). Two properties, however, make them qualify as unergative verbs. Firstly, they exhibit a non-causative diathesis alternation, in which the object is simply optional, as Merlo and Stevenson (2001: 378) puts it. Secondly, they appear in *one's way*-construction, which typically select unergative verbs, as discussed by Levin and Rappaport (1995) and Bresnan (1995: 14). Here I, following Bresnan (1995), treat them as a special type of unergative verbs.

(22) a. He confessed his way out of trouble.
b. He recanted his way into acceptance by the functionalists.
c. She declared her way from science into art. (Bresnan (1995: 14))

In what follows, let us look at a rejection of this stance. Bruening (2014) suggests that prenominal participles of these verbs are formed from the transitive variant, but not from the unergative variant. Accordingly, the participles in (20) and (21), he argues, passive participles, though they look like active perfect participles.[5] The suggestion by Bruening (2014) is that the noun modified is not an agent argument but an internal argument of the base verb. His interpretation, for example, of *a confessed killer* is that someone who has confessed to being a killer, unlike Bresnan's paraphrase. He states that *killer* is the internal argument of the participle, not the

external argument (Bruening (2014: 417)). The data he presents in favor of his argument indeed apparently supports such a conjecture. Most of these verbs can take ECM or small clause complements just as in the case of *alleged*.

(23) a. He confessed himself a killer.
b. * He recanted himself (being/to be) a Chomskyan.
c. He declared himself a biology major.
d. He committed himself *(to being) an evangelical.
e. He avowed himself a communist.
f. He swore himself (to be) an enemy.
g. He admitted himself a murderer. (Bruening (2014: 418))

Superficially this looks good. There, however, are good reasons to consider that these participles are not formed via ECM or small clause derivation. The first reason is concerned with a general property of prenominal associative modifiers. Associative modifiers express a property that does not apply literally to the denotation of the head nominal. For example, *clerical duties* cannot mean that the duties are clerical but that clerical duties are associated with being a clerk. There are plenty of other examples: *criminal law*, *foreign affairs*, *a marine biologist*, …. (Huddleston and Pullum (2002: 556)). Clearly, it would make no sense to analyze such adjectives as derived via a clause-level structure, say, 'be associated with X', though they can be analyzed as having a similar semantic structure. In this regard, these participles in (21) and (21) are on a par with associative adjectives.

A more sound reasoning is the following. Cinque (2010: 30ff) observes that *alleged* is a direct modification adjective in that it can either precede or follow another direct modification adjective in prenominal position: *a former alleged thief* vs. an *alleged former thief*. *Alleged* cannot be an indirect modification adjective since an indirect

adjective always precedes a direct modification adjective (Cinque (2010: 33)). Moreover, indirect modification adjectives rather than direct modification ones have a clausal (reduced relative) structure according to Cinque's observation. Thus, being a direct modification adjective, *alleged* lacks a clause-level structure, contra Bruening (2014: 369-372, 394ff, 418), who takes the *alleged* class of participles and unergative participles like *confessed* and *recanted* as having clausal (ECM/raising) structure. His conjecture is that the ECM/raising type meaning of such participles must be mapped into syntactic ECM/raising structures. Such mapping, however, is not consistent with the fact that modifiers with clausal structures must precede simpler structured ones as observed by Cinque (2010).

We have a final reason to consider that such participles are formed from (non-canonical) unergative verbs, not from usual transitive verbs via ECM raising. If they are formed from the transitive variant of the verbs, there will be oddity in *a confessed killers* and *a confessed sin*, where the modified nouns would be both internal arguments of the base verb, in spite of the following contrast.

(24) a. Police say the killer confesses.
b. … sinners who have confessed their sin asked for forgiveness …
(COCA [NEWS: 1998])

Clearly, in (24a), *killer* is an agentive, external argument rather than an internal argument, unlike in (24b), in which *their sin* is an internal argument.[6]

To sum up this subsection, not only transitive and unaccusative verbs but also unergative verbs can form participles as prenominal modifiers. On the other hand, canonical unergative verbs like *run* and *laugh* are more restricted; they are allowed only in the case that an aspectual particle is combined with them. The *confessed* type

participles are a special type of unergative-based participles, on the other hand.

### 2.2.4. Stative *vs*. Resultative *vs*. Eventive

This subsection discusses how to identify a given participle as stative or resultative or eventive. After reviewing previous discussion, we set certain criteria for distinguishing the various types of participle, based on some empirical facts about entailment of eventualities.

#### 2.2.4.1. Basic Distinctions

A division of participles into three types according to their interpretations is already quite familiar since Embick (2004). Embick's (2004) ternary distinction is quite straightforward: stative, resultative and eventive, where resultative participles are a subtype of stative participles. Resultative participles describe a result state of the prior event while stative participles describe a simple state, much like simple adjectives, not implying any eventuality (Embick (2004: 355)). Embick (2004) argues that prenominal position allows only stative and resultative participles, ruling out eventive ones.

Let us first have a look at the differences between resultative and stative participles in Embick (2004). The first difference is concerned with adverbial modification. As shown in (25) and (26), resultative participles allow modification by manner (and other) adverbials while pure stative participles do not, much like adjectives (Embick (2004: 357)).

(25) a. The package remained carefully opened.
b. * The package remained carefully open. (Embick (2004: 357))

(26) a. the carefully opened package

b. * the carefully open package (Embick (2004: 357))

*Closed* in (27a) is then interpreted only as resultative while it is either resultative or stative in (27b), where no adverbial is present.

(27) a. the carefully closed door
b. the closed door

The second difference is that stative participles are allowed in the complement position of verbs of creation such as *build*, *create* and *make*, while resultative participles are not. Again, stative participles are on a par with simple adjectives.

(28) a. This door was built open.
b. * This door was built opened. (Embick (2004: 358))

(29) a. This new ruler was built long.
b. * This new ruler was built lengthened. (Embick (2004: 358))

Therefore a participle must be stative when it occurs in such a position. (28b) and (29b) are deviant because the participles denote a result state. *Closed* denotes a static state rather than a result state in (30).

(30) This door was built closed. (Embick (2004: 359))

In prenominal position, it may be ambiguous between resultative and stative, on the other hand, as shown below.

(31) the closed door

Still another diagnostic to distinguish them is whether or not the participle can serve as a resultative secondary predicate. Stative participles can do so while resultative participles cannot. So, *closed* in the secondary predicate position in (32) is

interpreted only as stative. In (33), *rotten* as well as the adjective *open* are stative, hence acceptable while *opened* and *rotted* are resultative.

(32) John kicked the door closed. (Embick (2004: 358))

(33) a. John kicked the door open/*opened.
b. The heat turned the meat rotten/*rotted. (Embick (2004: 359))

The last diagnostic is that the prefix *un-* is more restricted with stative participles than with resultative participles. Embick (2004: 359) adds that *un*-prefixation is fully productive with resultatives, but not with statives, though there are statives such as *unshaven* and *unhappy*.

(34) a. un-open-ed, *un-open
b. un-rott-ed, *un-rott-en
c. un-shrunk, *un-shrunk-en (Embick (2004: 359))

Now we look at resultative *vs.* eventive participles. Superficially, resultative and eventive participles are indistinguishable from each other; both can be modified by manner adverbs.

(35) a. the carefully opened package
b. The package was carefully opened by me.

They, however, differ in that resultative participles are allowed in prenominal position while eventive participles are not, according to Embick (2004). In a predicative position, eventive participles can appear with a *by-phrase*. This is not true of prenominal resultative participles.

#### 2.2.4.2. Eventive Participles

Some more types of eventive participle can be added to (35b), in which the

participle is interpreted as describing an anterior event. Recent works such as McIntyre (2013) observe the existence of what they call situation-in-progress or event-in-progress participles, as exemplified below.

(36) a. The flute seems well played, from what I can hear amidst the surface noise.
b. That blue car seems badly driven, so keep away from it.
(McIntyre (2013: 24))

Such participles' Reference time matches that of the situation described by the corresponding verb (McIntyre (2013: 22)). According to the ternary distinction, i.e. stative *vs*. resultative *vs*. eventive, such participles would be classified as the last one because they express neither a simple state nor a result state. They instead express a progressive situation or event. For example, you cannot utter (36a) if the music is over. Interestingly, such type of participles can also occur in prenominal position, as exemplified below.

(37) a. The mediaeval painting shows tortured people in the background.
b. The photograph shows doctors and operated-on people.
(McIntyre (2013: 24))

This suggests that prenominal position is not preserved only for statives and resultatives, if those in (37) are eventive participles.[7] Sleeman (2011: 1572) also reasons out that eventive participles are allowed in prenominal position. She provides the following reasoning. If a prenominal participle (or a participial phrase) is a stative or a resultative, it should be able to appear after copulas such as *remain*.

(38) a. the carefully opened package
b. The package remained carefully opened. (Sleeman (2011: 1572))

In (38), *carefully opened* is resultative and hence available after *remain*. However, as shown below, *recently opened* fails to do so. This is because *recently opened*, she claims, is eventive rather then resultative.

(39) a. the recently opened door
b. * The door remained recently opened. (Sleeman (2011: 1572))

Laskova (2007: 134) also observes that *an evacuated house* does not necessarily mean that the house is in a currently holding state of having been evacuated; the house may not longer be empty and may have been re-populated at the time of utterance.

(40) an evacuated house (Laskova (2007: 134))

Here, modification by the adverb *previously* is more suggestive that Laskova's argument is on the right track.

(41) a previously evacuated house

*Previously* is compatible with the Experiential perfect reading but not with the Perfect of result reading, as shown below.[8]

(42) a. # My car has previously been damaged by an unknown man and it is now still damaged.
b. My car has previously been damaged by an unknown man but it works now.

It then follows that *previously evacuated* is eventive rather than resultative; it has an Experiential perfect reading, not a Perfect of result reading. I call this type of participles 'Experiential participles' and treat them as eventives.

Another group of eventive participles, not formulated in the literature, is those as in (43). As indicated by the habitual adverbs, these participles describe events that last for an extended period of time or take place repeatedly; they do not describe currently holding result states. We call this type of eventive participles 'Habitual participles' in this thesis.

(43) a. … answers to frequently asked questions about donating blood can …
(COCA [NEWS: 2014])
b. The most often cited reason why minority-owned firms don't get ...
(COCA [MAG: 1992])

So far, we have got three types of prenominal eventive participle, as summarized below.

(44) a. Experiential: *the recently opened door*, *previously mentioned topics*
b. Habitual: *frequently asked questions*, *the most often cited reason*
c. Event-in-progress: *tortured people*, *operated-on people*

#### 2.2.4.3. Resultative Participles

It is not difficult to see that the participles in (45) are different from those in (46) with respect to the result states they express.

(45) a. the carefully opened package
b. the closed door

(46) a. recently arrived guests
b. fallen leaves

In (45), the result states are closely related with the change-of-state (COS) meaning lexically encoded by the base verbs *open* and *close*; the entities, say, the package and the door undergo a physical change. In contrast, the base verbs of those

in (46) lack such meanings; they describe inherently directed motions; the entities do not undergo a physical change. This leads to a crucial difference between them as shown below.

(47) a. The package is/remained carefully opened.
b. The door is/remained closed.

(48) a. * The guests are/remained recently arrived.
b. * The leaves are/remained fallen.

While the former type is acceptable with the auxiliary *be* and other copulas, the latter is not. Interestingly, the latter type is acceptable with the auxiliary *have*.

(49) a. The guests have recently arrived.
b. The leaves have fallen.

All this leads us to assume that the former is derived lexically, while the latter grammatically. Let us call the former 'Lexical resultative' and the latter 'Grammatical resultative'.[9]

#### 2.2.4.4. Eventuality of Participles

This subsection discusses how to identify a given participle as eventive or stative or resultative. We saw some formal diagnostics for distinguishing them in Section 2.2.4.1. However, the distinction among them as made in that subsection leaves some problems unexplained. For example, a contradiction appears when participles followed by a *by*-phrase indicating eventuality occur in post-copula position or in a secondary predicate position.

(50) a. Former investigator says he remains disturbed by what he saw at baby murder scene.

b. No longer does Tim Thomas appear trained by Tim Hortons.
(Bruening (2014: 379))

(51) a. Invading Commander: I want the treasury left untouched!
b. Underling: Untouched by anyone but you, you mean.
(Bruening (2014: 379))

In the above examples, the participial phrases, appearing in the post-copula position or the secondary predicate position, are interpreted as expressing result states, and so we expect that they are resultative participles. But the *by-phrase*s, which clearly indicate some kind of eventuality, lead us to expect that the participles are eventive. Then, the question is: What type do these participles belong to exactly? Are they eventive or resultative?[10]

The following discussion proceeds with an aim to clarify the eventuality involved in participles and to find out the solution to the problem of identification of participles. Let us first have a look at evidence for participles' involvement of certain types of eventuality. As observed by Koontz-Garboden (2011), prenominal participles (his derived stative) necessarily entail a preceding event either in a temporal domain (52) or in a spatial domain (53) and the entailment leads to the possibility of modification by adverbs like *gradually*.

(52) a. The sky gradually darkens, owing to the storm clouds up ahead.
b. The gradually darkened sky overhead holds the eye in the picture.
(Koontz-Garboden (2011: 306))

(53) a. His skin darkens on his right leg near the femoral artery.
b. He has no scars but there is a slightly darkened portion of skin on his right leg, near the femoral artery, which he has had since birth and is in the crude . . .. (Koontz-Garboden (2011: 287-291))

Presenting only adverbial modification is not enough to show that a preceding event is indeed entailed by participles. Koontz-Garboden's (2011: 303-305) contradiction tests fully confirm his observation, however. As shown in (54a), in which the simple adjective *wide* is used, the road has had no width change. In (54b), the participle *widened* is used but there is no implication that the road has become wider than before. This is because the preceding event entailed by the participle is one of spatial change rather than of temporal change. That is, there is no contradiction between the denotation of the participle *widened* and the current actual width of the road. In contrast, as shown in (54c), there is a contradiction. This is because the participle *widened* there entails a preceding event of temporal change rather than of spatial change and this gives rise to a result state of the road's having undergone widening change, indicating that the road is now wider than before, but this contradicts with the proposition of the last sentence in (54c).

(54) Continuation by denial of preceding event of temporal change:
   a. I65 is wide at Lafayette city center and this portion of the road has had the same width for its entire existence.
   b. I65 is widened between Gary and Lafayette city center and this portion of the road has had the same width for the entire duration of its existence.
   c. #Because of the previous frequency of accidents, the state hired a road crew, and after a few short months the US had a widened I65. In fact, the road has had the same width for its entire existence.

(Koontz-Garboden (2011: 305))

The same applies to (55). The participle in (55a) entails a preceding event of spatial change and so there is an implication that that portion of the road at Lafayette city center is in fact wider than other portions. The entailed event is not of temporal change and so there is no implication of actual width change in the past either, but

whether there is entailment of temporal event is not relevant here. The simple adjective wide has no any entailment of a preceding event in (55b) and so there is no contradiction between its denotation and the actual current width of the road. In (55c), although a preceding temporal event of widening of the road in its entire extent is entailed, the denial of a preceding event of spatial change does not gives rise to a contradiction; that is, every portion of the road is of the same width.

(55) Continuation by denial of preceding event of spatial change:
   a. #I65 is widened at Lafayette city center. In fact, it's of the same width for its entire extent.
   b. I65 is wide at Lafayette city center. In fact, it's of the same width for its entire extent.
   c. Because of the previous frequency of accidents, the state hired a road crew, and after a few short months the US had a widened I65. It was of the same width for its entire extent, so as not to confuse drivers.

(Koontz-Garboden (2011: 305))

This contradiction text successfully shows that a preceding event of temporal change or spatial change is entailed.[11] Noteworthy is the fact that the distinction between the two different types of event leads to the distinction between statives and resultatives, the latter of which will be shown to be eventive in nature in the subsequent discussion. That is, the stative *vs*. resultative (or stative *vs*. eventive) distinction in fact comes from the distinct properties of the entailed events. Note that as mentioned by Koontz-Garboden (2011: 304), an entailed event of temporal change leads to a result state and the one of spatial change leads to a static state. This is to say that participles entailing a preceding temporal event are resultative particples while those entailing a spatial event are stative ones. The crucial difference between a temporal event and a spatial one, as already clear, is that the former but not the latter

involves a dynamic change that proceeds over time and leads to a currently holding state.

This is exactly what we interpret when we speak of a real event, which in the strict sense takes an action as its core argument (cf. Crystal (2008: 9) and many others). State verbs such as *respect* and *relate* as well as *darken* (cf. (53)) all fail to express a dynamic action and hence impossible to express an event in the strict sense. They instead express a static event rather than a temporal event, which is always dynamic. Because they fail to express a dynamic event, their participles (*a respected family*, *a related factor*, *a slightly darkened portion of skin*) are hardly interpreted as expressing a dynamic situation, given that the aspectual meaning of verbs are inherited by their participles.

In contrast, participles formed from verbs like *publish* and *arrive*, which express dynamic events, can denote a dynamic situation (*recently published books*, *recently arrived guests*). In this sense, resultatives, which entail a preceding temporal event, are eventive in nature.

#### 2.2.4.5. Criteria for Participial Identification

Given what has been discussed so far, we now can have the following formulation.

(56) Criterion for Eventive Participle (CEP):
Be Eventive if you involve Temporal-eventuality. Otherwise, be Stative.[12]

Under CEP, resultative participles, which have been classified as statives in the literature, are now identified as a subtype of Eventives. Participles that only entail Temporal-eventuality (T-eventuality) without denoting a result state are then referred to as pure Eventives. For example, the participles in the (a) examples below

simply express temporal events hence Eventive, unlike in the (b) examples, in which the participles denote currently holding states resulting from the preceding events.

(57) a. The paper burned was my letter.
b. The burnt paper was thrown away. (Bolinger (1967: 3))

(58) a. Three poems were written by me.
b. Three poems in this book are well written. (Sleeman (2011: 1570))

Now we return to the earlier problematic examples. Recall that they were problematic in that the participial phrases contain eventuality-indicating *by*-phrases despite their occurrence in the predicative positions following the stativity-requiring copulas.

(59) a. Former investigator says he remains disturbed by what he saw at baby murder scene.
b. No longer does Tim Thomas appear trained by Tim Hortons.
(Bruening (2014: 379))

This apparent contradiction is now readily accounted for. They are Eventive in nature and so compatible with *by*-phrases. On the other hand, they denote result states and so acceptable after the copulas.

This dual nature of participles, being Eventive in nature but well formed in a stativity-requiring position, accounts for another group of participles. It is not doubtful that Event-in-progress participles as in the following sentences are Eventive in nature, given CEP, since they involve T-eventuality; that is, they denote ongoing events, in which Event time matches Reference time, both preceding Speech time in (60c, d) and being co-temporal with it in (60a, b).

(60) a. The flute seems well played, from what I can hear amidst the surface

noise.

b. That blue car seems badly driven, so keep away from it.
c. The mediaeval painting shows tortured people in the background.
d. The photograph shows doctors and operated-on people.

(McIntyre (2013: 24))

Note that they are not Resultatives because the events are not over at the utterance time. Resultatives are possible only when an event is over, where Event time precedes Reference time. Yet they do appear in a stativity-requiring position. Noteworthy here is that an event in progress is imperfective, which contributes to composing a state. In this regard, they have the same semantics as progressive predicates.

(61) a. The flute is being played.
b. That blue car is being driven.

We have still another group of participles that have such a dual nature. The participle in the following sentence is interpreted as expressing a habitual event in a context in which, for example, I have to kick all of the tires before I can go home (Embick (2004: 361, 373)). The same is true of prenominal participles.

(62) The tires are kicked. (Embick (2004: 361))

(63) a. frequently kicked tires
b. much talked about new show (Sadler and Arnold (1994: 190))

Habitual events are atelic and compose a state, much as in the case of Even-in-progress participles. These two types, entailing T-eventuality, are both Eventive in nature, in accordance with CEP.

We now turn to Statives. A given participle is identified as Stative if it does not

entail T-eventuality, given CEP, repeated below.

(64) Criterion for Eventive Participle (CEP):
Be Eventive if you involve Temporal-eventuality. Otherwise, be Stative.

Statives such as the *widened* type are thus accounted for, as discussed earlier. The *respected* type and the *related* type are also readily accounted for in the same direction. As noted earlier, emotional verbs like *respect* also entail a preceding event in a spatial domain, but not in a temporal domain. The event entailed by emotional verbs, however, does not involve spatial change, unlike in the case of COS verbs with extent uses like *widen* and *darken*. It involve spatial transition instead. Hale and Keyser's (1997) discussion is suggestive of this conjecture. As shown in the following example, my respect goes to Mary and she has it. In *a related factor*, the relationship goes from the conceptual relator, say, the accident to the factor, which can be regarded as the conceptual relatee.

(65) Mary has my respect. (cf. I respect Mary.) (Hale and Keyser's (1997: 5))

(66) The relationship goes from the accident towards the factor. (cf. The factor is related to this accident.)

An event is thus entailed in a spatial domain, much like the case of COS verbs. In both cases, Spatial-eventuality (S-eventuality) is entailed. Note that in the case of COS verbs like *widen* and *darken*, the event involves spatial change while in the case of *respect* and *relate*, the event involves spatial transition, not change.

We now get the following formulation.

(67) Criterion for Stative Participle (CSP):
Be Stative if you involve S-eventuality. Otherwise, be Eventive.

This criterion covers many other Stative participles. For example, in (68), there is a spatial event in which a buyer and, for example, a product, participate in; the interest arises from the buyer and lies in the product, indicating a certain transition, but not change, in a spatial domain.

(68) an interested buyer

In (69), the love goes from, for example, the pet's owner towards the pet, involving a transition of the love from the former to the latter.

(69) a beloved pet

In (70), the fear goes from the situation towards someone. Notes that the participle *feared* cannot be Resultative or Eventive. It can only be Stative because the base verb *fear*, unlike *frighten*, does not entail causative dynamic meaning (cf. Tenny (1994 : 65)).

(70) a feared situation

All this takes place in a spatial domain, not in a temporal domain. That is, there is no dynamic event or change that has taken place along the axis of time.

What is interesting is there are some Stative participles formed from non-state verbs. For example, as noted earlier, *closed* in (71) can be a Stative, as tested by (72).

(71) the closed door

(72) a. John kicked the door open/*opened.
b. John kicked the door closed. (Embick (2004: 358-359))

Apparently, such participles are not subject to CSP in (67) because they do not involve S-eventuality. Should they count as Eventive participles then? Of course, no.

This is because they do not involve T-eventuality, either. They are Stative after all, even though they do not involve S-eventuality. Note that CSP in (67) is not a necessary condition, but a sufficient one. Since they do not involve eventualities of any kind, such Statives have no verbness. That is, they are adjectives, despite their morphological similarity with oridinary participles. They have been lexicalized as adjectives and behave the way simple adjectives like *open* and *happy* do. Let us call them 'participial adjectives', indicating that they have the participial ending *-ed/en* but lack verbness.

*Closed*, of course, can also be Eventive participles and Resultative ones, as exemplified below. In that case, they involve T-eventuality.

(73) a. the carefully closed door
b. the recently closed door

Other cases of such Stative (or participial adjective) involve *spoken* and *written*, as exemplified in (74a).

(74) a. spoken language, witten language
b. softly spoken words, a tightly written passage

They do not involve eventualities of any kind and hence adjectives, which lack verbness. In contrast, in (74b), they involve T-eventualities and hence participles, which must have verbness. As will be clear in Section 2.3, such interpretive variation is mapped into their syntactic structures. When lacking verbness, their structure does not have a verb projection. A verb projection is present only when verbness is involved. This means that both Stative participles (not involving participial adjectives) and Eventive participles are verbs in the strict sense, and this is ultimately attributed to the proposed criteria, CEP and CSP.

In what follows, let us have a look at some participles that look like participial adjectives at first glance but in fact are Resultative participles, which are Eventives in nature. For example, in (75), foods are characterised as *cooked* and *uncooked*.

(75) Cooked foods are healthier than uncooked foods.

At first glance, such participles look like participial adjectives because they would seem to denote permanent properties, but not transitory states, as the case of *written/spoken language*. However, unlike *written/spoken language*, *cooked/uncooked* can involve T-eventuality, as tested by (76).

(76) a. The side of beef is cooking between the rib and the joint.
(There is temporal change; that portion undergoes temporal change.)
b. #The side of beef cooks between the rib and the joint.
(Koontz-Garboden (2011: 308))

As discussed by Koontz-Garboden (2011), verbs of cooking may allow temporal change readings, as shown in (76a), though they do not allow spatial change readings, as shown in (76b). He describes that the portion of meat between the rib and the joint is undergoing a temporal change; that is the side of beef has differing degrees of cookedness at points between the rib and the joint (2011: 308).

In this sense, you cannot claim that cooked foods can be those that have not undergone a cooking process. Rather, you can say that any foods that have been cooked are cooked foods but not uncooked foods (cf. also Koontz-Garboden (2011: 309)).

All in all, Eventive participles are those that involve T-eventuality and Stative participles are those that involve S-eventuality. Those that involve neither T-eventuality nor S-eventuality are participial adjectives; they are not participles in

the strict sense.

#### 2.2.4.6. More on Resultative Participles: Lexical *vs.* Grammatical

In this subsection, we elaborate on the Lexical *vs.* Grammatical distinction of resultatives in connection with the proposed criteria. What diagnoses for this distinction is in fact modification by degree and aspectual/temporal adverbs and this distinction is ultimately attributed to the lexical semantics of their base verbs. Participles in (77), but not those in (78) are formed from simple telic verbs without encoding an inherent (inchoative) COS meaning that contributes to resultativity. Lacking such a meaning, they form Resultative participles via grammatical derivation only.[13]

(77) a. the recently announced visa rules
b. the just concluded investment study

(78) a. the half/fully opened door
b. a very/badly damaged car

Unaccusative verbs like *arrived* and *escape* are simple telic verbs and so resultativity involved in their participles can only be grammatically derived, as also discussed in Section 2.2.4.3.

(79) a. the recently escaped thief
b. just arrived guests

(80) a. * the half/fully escaped thief
b. * very/badly arrived guests

Some unergative participles such as the *confessed* are also grammatically derived Resultatives. The *confess* type verbs, being simply telic, have no inherent implicature

of COS, which makes their participles compatible with aspectual/temporal adverbs but not with degree adverbs.

(81) a. the recently/just confessed monarchist
b. * the very/badly confessed monarchist

What is important here is that both lexical and grammatical Resultatives involve T-eventuality, as evidenced by adverbial modification, and therefore they are a subtype of Eventives, under the proposed criteria. In the case of lexical Resultatives, manner adverbs occur with the participle and in the case of grammatical Resultatives, aspectual/temporal adverbs do. Their crucial difference lies in the presenting of the two components, i.e. event and state (cf. Section 2.2.2). The former presents the state in the foreground, with the event left in the background, while the situation is reversed in the latter.

#### 2.2.4.7. More on Eventive Participles: The Perfect Property

Now we discuss Eventive participles. Recall Laskova (2007) and Sleeman (2011) discussion reviewed in Section 2.2.4.3 that it is the case that prenominal participles are not always interpreted as Resultative but as Eventive. For example, *a previously/recently mentioned topic* does not readily imply that the topic is in any currently holding result state. Rather, it implies that the topic has an experience of being mentioned in the past. In *an evacuated house*, the house may not be empty at the present after it was re-populated, implying that it underwent an evacuating process, without necessarily implying a currently holding result state. In a court case, *the wounded man* could refer to someone who was wounded but subsequently healed, or someone who has been wounded, and still bears the wound.[14] So, very clearly, participles are not necessarily Resultative. Rather, they, in appropriate contexts, can

be pure Eventive with an Experiential/Existential perfect reading.[15]

This is the exact case we have in canonical perfect clauses. The following two sentences have the same syntactic structures regardless of their difference in perfect meaning. A crucial difference between them is that the Experiential perfect does not bring about a currently holding state, unlike the Perfect of result.

(82) a. Dean has been to Adelaide. (Existential perfect)
b. Dean has arrived (he is here). (Perfect of result)

In what follows, we discuss a question that naturally arises here. Given that Experiential perfect participles do not denote a result state, one might wonder how stativity is encoded by prenominal Experiential perfect Eventives if prenominal position requires stativity at all. This problem can be readily accounted for if we view it from a perspective of Resultant state.

Parsons (1990: 234) observes that "for every event that culminates, there is a corresponding state that holds forever after," which he calls Resultant state. Resultant state, unlike what he calls Target State, which may or may not last for a long time, cannot cease at some later time. In *The fact has previously been mentioned*, for example, mentioning of the fact has occurred, which composes a corresponding state, which can never cease or be cancelled. This allows us to say that prenominal Existential perfect participles (*the previously/recently mentioned fact*) denote a resultant state, though they do not denote a result state.[16]

Resultant state and result state must be distinguished, though they are sometimes treated alike (cf. Ritz (2012: 890) for relevant discussion). Crucially, in fact both the Experiential perfect and the Perfect of result bring about a resultant state but only the latter brings about a currently holding result state. In both cases, some consequence

is relevant or extended to the present, instantiating the notion of Current Relevance or Extended Now.[17]

Thus, the division between Laskova (2007) and Sleeman's (2011) Eventive interpretation and Embick's (2004) Resultative interpretation can in fact be attributed to the Perfect aspectual property of prenominal participles. What is important here is Resultatives and Experiential eventives share the same syntactic structure, as we will see in Section 2.3.2.[18]

Alternatively, the answer to the question follows from their Current Relevance or Extended Now property. Of importance here is the fact that the Extended Now property includes Event time (Binnick (1990: 268)). Even though an event denoted by Eventives is located in the past, it ties its 'Extended Now' interval to Reference time. From a point of view of (im)perfectivity, such 'Extended Now' interval is imperfective and coincides with part of the interval of the noun's referent as static existence, which is also imperfective. Interestingly, a change, not a physical one as in the case of COS verbs, takes place for Experiential perfect reading, which holds for both the canonical *have* perfect and Experiential Eventives under discussion. For example, in *Dean has been to Adelaide*, "a change did indeed occur between Dean never having been to Adelaide to him having had the experience of such a visit when he traveled there for the first time", writes Ritz (2012: 903). This also holds true of Experiential Eventives. For example, in *the previously/recently mentioned topic*, we could argue that a change took place between the topic's never having been mentioned to it's having had the experience of being mentioned when it was mentioned for the first time. As such, the topic can be assigned a property that distinguishes it from other topics that have not been mentioned. This instantiates the

very basic function of prenominal modifiers, which are used to distinguish a given entity from others. Note that the change as mentioned above has left the topic in state of having had that experience. This leads to the stativity required in prenominal position.

### 2.2.5 Conclusion

This section has tried to sort out the attested types of prenominal participles more aacurately. It first discussed the adjectival *vs*. verbal distinction and pointed out its inadequacy in characterizing prenominal participles in Section 2.2.1. The following is the novel proposals in this type and interpretation subsection. In Section 2.2.2, it was shown that a certain group of participles that have been regarded as verb-based (cf. *travelled*) could be analyzed as noun-based in parallel with the canonical noun-based group (cf. *talented*). In Section 2.2.3, the *confessed* type of participles was classified as unergative-based participles. Section 2.2.4 showed that verb-based participles must involve eventualities and proposed two semantic criteria for identifying Stative and Eventive (and Resultative as a subtype of Eventive) participles. Section 2.2.4 also discussed the Perfect property of prenominal Eventives. All these have received little attention in the literature.

Let me now summarize in Table 2.1 the discussion of the type and interpretation of Stative *vs*. Eventive participles, which composed the largest part of this section (2.2). We have discussed Statives (as opposed to simple Statives), Habituals (as a subtype of Eventives), Event-in-progress participles (as a subtype of Eventives), and Resultatives (as a subtype of Eventives) and Experiential Eventives (as an instance of the Perfect).

Table 2.1. Type and interpretation of prenominal participles

| Category | Subcategory | Type of eventuality |
|---|---|---|
| Stative | Pure Stative (Participial Adjective)<br>E.g., *a closed door*, *spoken language* | No |
| | Stative[19]<br>E.g., *a respected scholar*, *a related factor,* | S-eventuality |
| Eventive | Lexical Resultative<br>E.g., *a damaged car*, *the opened door* | T-eventuality |
| | Grammatical Resultative<br>E.g., *a just released study*, *the recently opened door* | T-eventuality |
| | Habitual<br>E.g., *frequently kicked tires*, *an often asked question* | T-eventuality |
| | Event-in-progress<br>E.g., *operated-on people*, *The flute seems well played*. | T-eventuality |
| | Experiential Eventive<br>E.g., *a previously mentioned topic*, *recently announced visa rules* | T-eventuality |

## 2.3. Formation and Structure

### 2.3.1. Previous Literature

Participial formation has been debated on by scholars, which can be divided into two groups, lexicalists and syntacticians. The lexicalist view (Bresnan (1982), Levin and Rappaport (1986), Kibort (2005), etc) takes it that participles are all adjectives formed in the lexicon. With lexicalist view, however, there immediately arises a very fundamental question concerning entailment of events (cf. Section 2.2.4), which calls for phrasal structures of the participles beyond lexical derivation. In particular, the

lexicalist view fails to account for cases in which the participle is modified by a certain type of temporal and aspectual adverbs?

(83) a. the gradually darkened portion of the skin
b. the gradually darkened sky
c. the previously evacuated house
d. the recently arrived guests
e. the frequently asked questions
f. the much talked about new show
g. the already established community
h. the still hidden sun

Lexicalist accounts have been challenged by recent syntacticians such as Embick (2004), Jackson (2005), Laskova (2007), Cinque (2010) and Sleeman (2011), McIntyre (2013, 2015), Alexiadou et al. (2014), Arche et al. (2014) and Bruening (2014)), where discussion of phrasal or clausal structure of prenominal participles is fully provided and various individual accounts in favor of the DM-based structural analysis have been proposed.

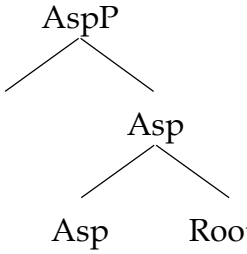
The structural approach of participial formation is governed by factors related to three major aspects. First, no lexicon *vs*. syntax distinction is made, which gets earlier lexical accounts invalid to a large extent. Word formation is not treated in terms of such a distinction and both lexical and grammatical aspects are represented syntactically in the DM direction. The earlier distinction between adjectival *vs*. verbal participles has also been demolished. Participial formation comes to be based solely on the stative *vs*. resultative *vs*. eventive distinction, instead, which is the second aspect in the structural approach. Roughly speaking, there is only the stative and eventive distinction, with resultative participles belonging to the stative in the sense of Embick (2004). The last aspect is concerned with voice. Many have tried to capture

the verbal behavior of the participles and the fact that unergativity does not feed participial formation, by postulating VoiceP or its alternative, agentive vP as opposed to non-agentive vP. The first of these three aspects takes care of the problem of functional similarity of participles to simple lexical adjectives; the second takes care of the problem of aspectual interpretations of participles and their correspondence to the DM-based syntactic formation of the participles; the last of the three takes care of the problem of argument structure and asymmetry between active and passive participles. Based on Embick (2004), many individual accounts have been presented but (a) drawback(s) is inevitable in each of them.

The basic idea of the structural account advocated by Embick (2004) is that a functional projection headed by a verbalizing head, represented by vP, is responsible for dynamicity of participles (84b, c). Stativity, which is automatically involved both in statives and resultatives, is encoded by Asp, which attaches above vP. Since statives do not involve dynamicity, no verbal category is present in the structure, with Asp directly merging with the root (84a). In the case of eventives, what is merged as the complement of Asp is an agentive vP, which is the only representational difference from resultatives, which involve non-agentive and fientive vP (84c).[20]

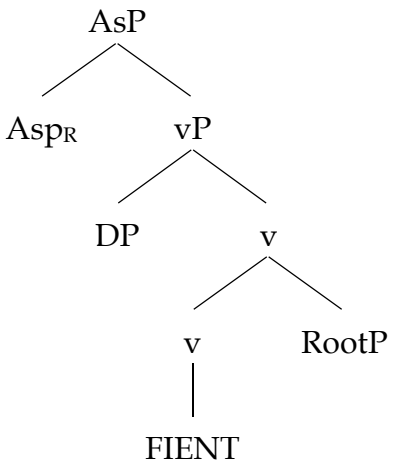
(84) Representations of statives, resultatives and eventives in Embick (2004)

a.



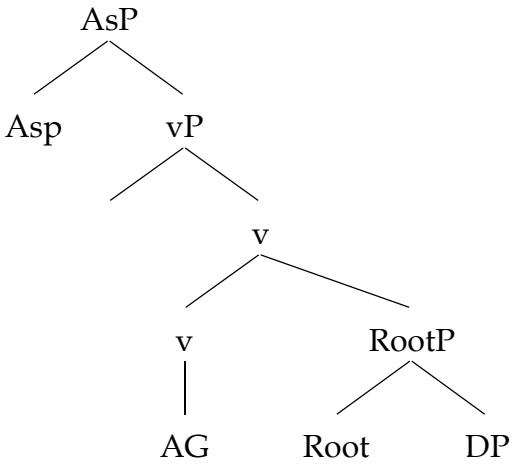

(Embick (2004: 363))

b.




(Embick (2004: 364))

c.




(Embick (2004: 367))

Admittedly, such representations are attractive in that they have captured the facts that are hardly accounted for in terms of the earlier adjectival *vs*. verbal distinction and that stative and eventive participles are different in formation. There, however, are empirical problems with the proposed structures in (84).

First, the structures in (84a) would incorrectly predict that all stative participles lack verbal sources, contra the fact observed by Konontz-Garboden (2011: 312-313) (cf. Sections 2.2.4.4 and 2.2.4.5). Recall that participles formed from COS verbs with extent uses are Stative, as shown below.

(85) a. The crack gradually widened from the north gate to the tower.
b. His skin darkens on his right leg near the femoral artery.

(Koontz-Garboden (2011: 287-291))

(86) a. the widened crack
b. a slightly darkened portion of skin on his right leg

(Koontz-Garboden (2011: 287))

Since such verbs entail an event in a spatial domain and can be modified by adverbs like *gradually*, they are verbs in category. The verbness must then be inherited by participles and represented structurally, as confirmed by Koontz-Garboden's (2011) contradiction test. If the verbness is not represented, the difference between simple adjectives like *wide*, which are pure statives, and participles like *widened*, which are derived statives, will then disappear.

Embick's (2004) distinction between his pure statives and derived statives is only morphological but not structural: *wide-θ vs. widen-ed*. So, the structure in (84a) turns out to be an overgeneralization, failing to account for the fact regarding the difference between pure Statives and participles (derived Statives). Specifically, it ignores the verbness of (the base verb of) certain types of participle, including participles formed from emotional verbs like *respected* and *delighted* as Stative participles. Recall the earlier discussion that emotional verbs like *respect* also entail an emotional event, which takes place in a spatial domain much as the case of COS verbs with extent uses such as *wide* and *dark*.

The second problem with Embick's (2004) analysis is concerned with Habituals. Embick (2004: 373) incorporates Habituals like that in *The tires are kicked* and *frequently kicked tires* under his resultative structure. Note that the feature [FIENT] that he postulates is intended to capture this. However, empirically, habituality is derived grammatically rather than lexically and is encoded by a grammatical head.

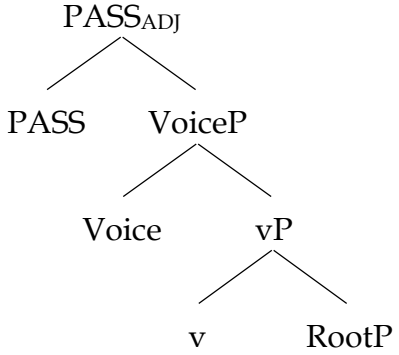
Such a grammatical head should be the higher Asp rather than the lower one. Unfortunately, Embick's (2004: 373) [FIENT], a BECOME-operator, is lexical in nature. This leads to his inappropriate assumption that the lexical [FIENT] gives rise to a contextual coercion of the participle to be stative.[21]

Sleeman (2011) includes what she calls 'eventive participles' in her prenominal structure and proposes that the [BECOME] operator, what Embick (2004) calls [FIENT], is absent from vP, unlike in the case of Resultatives. Sleeman's (2011) proposal differs from Embick's (2004) in that prenominal modifiers do not merge directly with the modified noun but merge under a functional projection that is extended from the nucleus noun, in the spirit of Cinque (2010). The problem with Sleeman's (2011) account is that it makes no radical difference from Embick's (2004) as far as the Stative *vs*. Resultative distinction is concerned and faces the same problem.

Another group of authors adopting the structural approach are Alexiadou et al. (2014, 2016) and Bruening (2014)), who argue that a stativizing head, $PASS_{ADJ}$, selects for a voice projection, in which the event core is located.

(87) Representations of adjectival participial formation in Alexiadou et al. (2014):

a.




(Alexiadou et al. (2014: 132))

The structure they propose, however, would make no difference in derivation between Statives and Resultatives and between lexically derived and grammatically

derived Resultatives, since no a lexical aspect projection, they assume, is present in English participial formation. They attribute the participle's capacity to express (Stative) result states to the presence of a stativizing head.

Quite a number of other studies have been devoted to refinement of the DM-based structural approach in one way or another (Jackson (2005), McIntyre (2013, 2015), Arche et al. (2014), etc). While the details of these studies are not all reviewed here, a common shortcoming of them is noted. They fail to provide a uniformly basic syntactic structure for the attested types of participle as summarized in Table 2.1.

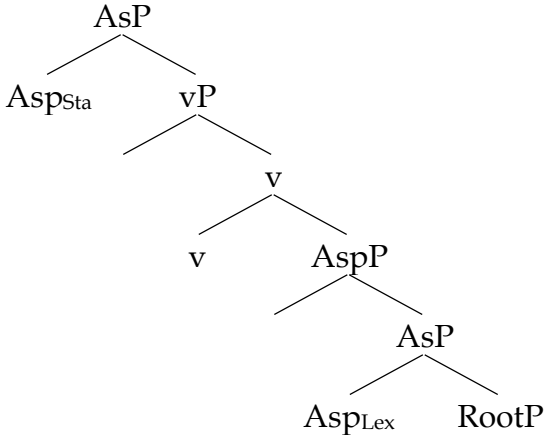
### 2.3.2. An Alternative Analysis

#### 2.3.2.1. The Structure of Verb-based Participles

This subsection aims to present a refined structural account based on the previous studies, capturing the empirical facts discussed in Section 2.2.

Under CSP, which is empirically supported by the *widen* and *darken* examples, it is reasonable to assume that for Stative participles a verbalizing head must be present to capture the verbness of them, as shown below. In this respect, the structure in (88) is quite similar to the one presented for Resultatives in Embick (2004), both involving vP. We will look at Resultatives shortly.

(88) The structure of Statives:



Unlike the structure in (84a), the structure in (88) features a lower aspectual projection in addition to the higher one. The presence of $Asp_{Lex}$ is to restrict the verb types selected in Stative participles. Recall CSP, which states that only verbs involving a spatial event can derive Stative participles as prenominal modifiers. In other words, only state verbs can be selected into $Asp_{Lex}$. In this sense, $Asp_{Lex}$, not $Asp_{Sta}$, is decisive in deriving the Stative meaning of the participle. $Asp_{Sta}$ functions as converting the eventuality produced in vP into stativity.

A noticeable point in (88) is the following, which concerns with the common assumption about merge of a root and a categorizing head. DM assumes that a category-unspecified root can be merged directly with any of the categorizing heads such as N, v and Adj. In *(chemistry) student* and *(truck-)driver*, for instance, the roots, pronounced as *stu-* and *drive-*, merge with the head N directly (Harley (2009)), contra the pre-DM tradition that had assumed deverbal formation for derived nominals as well as derived adjectives. The absence of a verbalizing head under DM is confirmed by the unacceptability of adverbial modification.

(89) a. * a carefully student
b. * a slowly driver

Importantly, the presence of a verbalizing head in the structure in (88) is confirmed by modification of adverbs like *gradually* and *very much*.

(90) a. a gradually darkened heel (Koontz-Garboden (2011: 306))
b. a very much respected family (Wasow (1977: 340))

This contrast is strongly suggestive that in the formation of Statives, the root is not attached by the stativizing head Asp immediately above it but by the verbalizing v head first, as in (88), not in (84a). Pure Statives (participial adjectives) like those in

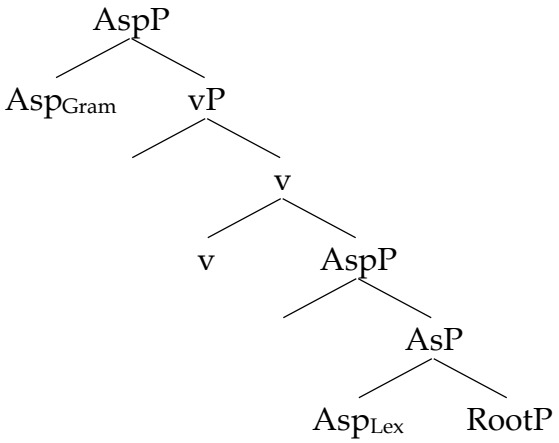
(91), lacking the verbness, do not allow modification by manner adverbs. This is because they are kind-modification modifiers, much like *black coffee* and *green tea*, where the adjectives cannot be modified, for example, by *very*.[22]

(91) a. spoken language, learnéd scholars
b. * softly spoken language, quickly learnéd scholars

As for the structure of pure Statives, the structure in (84a), which is proposed for all kind of Statives in Embick (2004), is the likely structure. As noted earlier, these Statives have fossilized into adjectives despite thier morphological similarity to participles. A crucial characteristic of them is that they are not subject to any constraints on participial formation. For instance, they have either transitive or unaccusative or unergative verbs as their inputs. Their semantics also makes them special. They are all kind-modification modifiers rather token-modification ones (reference-modification rather than referent-modification in Bolinger's (1967) terms).

Now we turn to Resultatives and other kind of Eventives. The structural representations of their formation is like (92). Recall here that there are two kinds of Resultative, Lexical Resultative and Grammatical Resultative. They, both involving eventualities, have vP, sandwiched between $AspP_{Gram}$ and $AspP_{Lex}$.

(92) The structure of Eventives (including all subtypes (cf. Table 2.1.)):



$Asp_{Lex}$ represents the inner aspect head, which takes care of the resultativity inherently involved in the participle; that is, the lexical semantics of the base verb plays a role in participial formation. If a verb does not lexically encode a COS meaning, it cannot form a participle this way. It may form one by means of grammatical derivation, though. For example, *talk* is an atelic verb and does not have a resultative meaning. So, the participle in *the much talked about new show* involves grammatical resultativity only and is derived via grammatical aspect.

In (92), the outer aspect head that is the locus of resultatvity. In the case of Grammatical resultatives, since the required resultativity is grammatically derived, lexical semantics of the base verb is not the decisive factor in forming the participle. That is, any types of verb can form a Resultative in principle. This accounts for Resultatives formed from verbs that do not lexically encode resultative meanings, as shown below.

(93) a. the washed car
b. the just concluded investment study

A crucial function of this $Asp_{Gram}$ is to get the eventuality produced in vP linked into the temporal aspectual domain, whereby the various Eventive interpretations, i.e. Experiential, Habitual and Event-in-progress, become available.

A voice projection, left out in (92), is present between the outer aspect projection AspP and vP in the case of transitive participles and absent in the case of unaccusative and unergative ones.

In this sense, there is no structural difference between Grammatical resultatives and other Eventives including Habitual participles, Event-in-progress participles and Experiential Eventives. The interpretive differences among them can be captured by

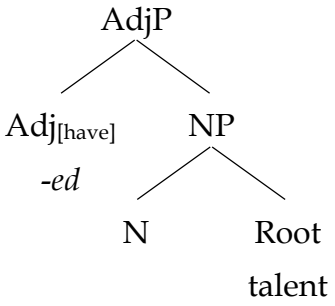
splitting the Grammatical AspP into subtypes, as in Cinque (1999).

The analysis presented here has an important merit of providing a unified basic structure for verb-based participles.

#### 2.3.2.2. The Structure of Noun-based Participles

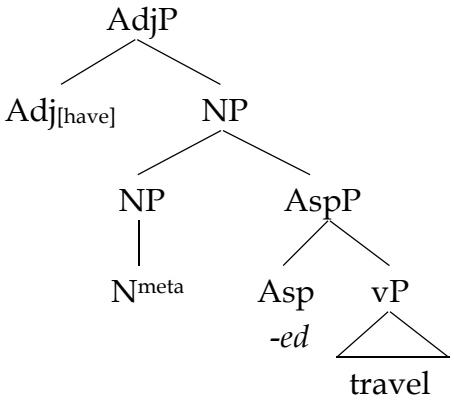
In this section, we discuss the structure of noun-based participles, whose structures quite straightforward; the categorizing and stativizing head Adj directly attaches to NP, much as in the case of denominal adjectives like *machinery*.

(94) The structure of noun-based participles (the *talented* type):[23]




Note that noun-based participles include the *travelled* class (cf. Section 2.2.2). What the *talented* type and the *travelled* type have in common as regards their structure is that the governing category is AdjP, by which NP is immediately dominated.

(95) The structure of noun-based participles (the *travelled* type):



The *talented* type and the *travelled* type differ in three aspects, on the other hand. Firstly, the *talented* type is formed from combination of the suffix with a pronouncable noun. This is not true of the *travelled* type, where the noun is not pronounceable lexical item, hence no overt form; it resembles a hypothetical abstract noun that denotes X when we describe the participles as 'having X, provided with X, gained X by V-ing'. X may refer to, for example, knowledge, experience or skills, in the case of *learned*, *experienced* and the like. In this sense, this X (N in (95)), is an unpronounced counterpart of N in (94); it is always hidden in the structure. Given that this element is syntacally and semantically active but yet not pronounced, I call such a noun 'metaphysical noun'. I tentatively assume that it behaves like the relatively standard unpronounced functional categories such as NUMBER as discussed by Kayne (2007) and many others.

As for the adjunctive part, for example, 'in traveling' in 'experienced in traveling' (cf. Jespersen (1931: 93)), I assume that it is fused with (the base verb of) the participle and lexically realized as 'travel', much as the case of adjunct fusion observed with a certain group of manner(/means/location)-incorporating verbs such as *butter* and *bottle* (cf. Jackendoff (1990: 164-166; 171-175)). Note that when we speak of it as 'in V-ing/by V-ing", it indeed resembles a manner or means or location, which behaves like an incorporated theme adjunct as in *Bill filled the tank (with water)* and *Bill buttered the bread (with creamy unsalted butter)*. See Jackendoff (1990: 161-166) for relevant discussion.

The structures in (94) and (95) also differ in that an AspP is selected by the phrasal head NP as its argument in the case of the *travelled* type while this is not true of the other.

The last difference is that the suffix *-ed* occupies the adjective head in the case of *-ed* adjectives while it is a participle marker in the other case, in which the adjective head is empty.

Note that the structure of the *travelled* type in (95) differs from that of verb-based participles in that it has higher projections NP and AdjP above the outer AspP. This leads to a prediction that the suffix *-ed* of noun-based participles is structurally higher than that of verb-based participles, where the suffix occupies $Asp^0$ or $Voice^0$. A further prediction is that this suffix has been grammaticalized as $Adj^0$ out of $Asp^0$. If this prediction is correct, the grammaticalization had been completed in the pre-OE period since we have lots of noun-based participles attested in OE. This remains an open question here, however.

### 2.3.3. Positions of Adverbials and the Prefix *Un-*

As we have seen earlier, modification by adverbials is always problematic for the lexical approach. In this subsection, we first briefly discuss the structural distribution of the various types of adverbs that appeared in the preceding sections.

Let us note *very* vs. *(very) much* first. While *very* is an adjective modifying adverb, *much* is a verb-modifying one.

(96) a. John very *(much) respects/frightens/appreciates your family.
b. John very (*much) fond of/grateful to/angry with your family.
(Wasow (1977: 340))

But given that the earlier adjectival *vs*. verbal distinction has been demolished, such distributively different adverbs in prenominal participial phrases turn out to be located in a stativity-related domain and an eventuality-related one.

(97) a. the much talked about new show (Sadler and Arnold (1994: 190))

b. a very (much) respected/frightened/appreciated family

(Wasow (1977: 340))

This leaves the possibility out there that *very*, a state-modifying adverb, is located in the Spec of Asp, while (very) much, an event-modifying one, is located in the Spec of vP. Note that verbs of emotion like *respect* entail a spatial event, as we have seen in Section 2.2. The same is true of Statives entailing a spatial change event, for example, *gradually widened*.

(98) a. [$_{AspP}$ very Asp [$_{VoiceP}$ *-ed* [$_{vP}$ v [… respect …

b. [$_{AspP}$ Asp [$_{VoiceP}$ *-ed* [$_{vP}$ (very) much/gradually v [… respect/widen …

Temporal adverbs like *recently* and *previously* are also located in the vP domain. Note that the temporal interpretation of such adverbs does not call for a functional projection of tense. Empirically, such adverbs are associated with Event time and hence inside the vP domain; they are not associated with Speech time, which calls for a functional projection such as TP; not do they modify Reference time, which calls for AspP (cf. Thompson (2001), for example). Manner adverbs like *carefully* and *badly* is in the same domain, too. Adverbs like *still* are different from the ones mentioned above. They modify a currently holding result state and must be located in the Spec of Asp. Habitual adverbs like *often* are also located in the Spec of Asp because it is associated with Reference time rather than Event time.

(99) a. [$_{AspP}$ Asp$^0$ [$_{VoiceP}$ *-ed* [$_{vP}$ previously/recently v$^0$ [… discuss …

b. [$_{AspP}$ Asp$^0$ [$_{VoiceP}$ *-ed* [$_{vP}$ carefully/badly v$^0$ [… drive …

c. [$_{AspP}$ still Asp$^0$ [$_{VoiceP}$ *-ed* [$_{vP}$ v$^0$ [… hid …

d. [$_{AspP}$ often Asp$^0$ [$_{VoiceP}$ *-ed* [$_{vP}$ v$^0$ [… ask …

Prefixation by *un-* has also been discussed widely in the literature, in particular in

favor of adjectiviy of the participles. A crucial property of this prefix is that it takes scope over the suffix *-ed*. The most common paraphrase of, for example, *unnoticed*, is 'not noticed'. The formation is then like (100a), not like (100b).

(100) a. [ *un-* [ *-ed* [ notice ]]]
b. [ *-ed* [ *un-* [ notice ]]]

This is evidenced by the existence of participles/adjectives like *unknown* and *untalented*, where merging *un-* directly with the roots is impossible (**unknow*, **untalent*). This scope-related fact clearly indicates that *un-* is merged in the Spec of a projection higher than vP or VoiceP. The same is true of *under-*, e.g., *under-mentioned*. Where is *un/under-* located then? Noun-based participles like *untalented* (Section 2.2.2) and unergative participles like *untraveled* (cf. Sections 2.2.2) are suggestive here that the prefix occupies the Spec of the highest projection, AdjP.[24]

(101) a. [$_{AdjP}$ *un-* [ *-ed*$_{Adj}$ [$_{NP}$ … talent …
b. [$_{AdjP}$ *un-* [ [$_{NP}$ … experience … [$_{AspP}$ [ *-ed*$_{Asp}$ [ … travel …

It then follows that that *un-* of verb-based participles is not merged directly in the Spec of Asp, but in the Spec of AdjP.[25]

(102) a. [$_{AdjP}$ *un-* [$_{AspP}$ *-ed* [$_{vP}$ … arrive …
b. [$_{AdjP}$ *un-* [$_{AspP}$ [$_{VoiceP}$ *-ed* [$_{vP}$ … discuss …

### 2.3.4. Conclusion

This section has argued that verb-based participles including Statives and Eventives (including all subtypes) have a shared basic structural component, that is, vP. This is because they verb-based participles involve eventuality of various types, which serves as the source of the verbness of verb-based participles. Among

Eventives, Lexical resultatives differ from the others including Grammatical resultatives and other Eventives in that Lexical resultatives require inner aspect be active, while Grammatical resultatives require outer aspect be active.

Noun-based participles, being divided into the *talented* type and the *travelled* type, also have a shared basic structural component; that is, they have an adjectival projection dominating NP. The two types differ with respect to the type of the base noun. For the *talented* type the noun is a lexical category, while for the *travelled* type it is a metaphysical rather than a lexical noun. The *travelled* type's structure is richer than that of the *talented* type in that the former involve AspP below NP, while the latter does not. The morpheme *-ed* occupies the adjectival head in the case of the *talented* type and the aspect head in the case of the *travelled* type.

Adverbials and the prefix *un-* are distributed in three positions, the Specs of vP, (grammatical/outer) AspP and AdjP, according to their function and scope.

## 2.4. Licensing Conditions

There are a number of constraints on prenominal participial formation. Bresnan (1982) presents a theme subject condition. This condition, however, is rejected in Levin and Rappaport (1986) and Bresnan (1995). Langacker (1991: 202-3), Parsons (1990: 236), Levin and Rappaport (1989), Haspelmath (1994), Bresnan (1995) and McIntyre (2013) suggest a result state condition. Such a lexical semantic condition, however, also fails to capture a certain types of participle that are contextually conditioned. Ackerman and Goldberg (1995) provide detailed discussion of pragmatics of participial formation. Likewise, a pragmatic condition is not a necessary condition, however, though it may be a sufficient one. This subsection

presents a conclusive discussion of the various conditions and constraints on prenominal participial formation.

### 2.4.1. Syntactic Condition: Argument Structure

What I call 'Internal Argument Condition' here dates back to Bresnan's (1982) theme subject condition, which states that only verbs that assign a theme role to its subject can form prenominal participles.

(103) Internal Argument Condition (IAC):[26]
The noun modified by a prenominal participle must be an internal argument of the base verb.

Bresnan (1982) bases her theme subject condition, IAC here, on the fact that unergative verbs alone do not feed participial formation.

(104) a. * a smiled guest
b. * a swum frog
c. * a run boy

Passive participles formed from transitive verbs and perfect participles formed from unaccusative verbs are all subject to IAC.

(105) a. a respected guest
b. a captured frog
c. a murdered boy

(106) a. a departed guest
b. an escaped frog
c. a fallen boy

Superficially, this looks good. We, however, have a group of counterexamples, as already noted by Levin and Rappaport (1986), Haspelmath (1994) and Bresnan (1995)

herself. Firstly, unergatives, which assign only an external role, can form prenominal participles when they are modified by an aspectual adverb or particle.

(107) a. a run-away slave
b. an over-exercised athlete
c. a widely-travelled correspondent (Bresnan (1995: 13))

A group of unergatives can form prenominal participles even without being modified, on the other hand (cf. Section 2.2.3).

(108) a. a practiced liar (a liar who has practiced)
b. a confessed killer (a killer who has confessed)
c. a recanted Chomskyan (a Chomskyan who has recanted)
(Bresnan (1995: 13))

Failing to capture these data, IAC turns out invalid.

### 2.4.2. Lexical Semantic Constraints: Resultativity and Affectedness

It is widely accepted that participles in prenominal position and a predicative position denote a result state of a preceding event. Let us call this 'the result state condition'.

(109) Result State Condition (RSC):
A prenominal participle modifying a noun must denote a result state.

Indeed, RSC accounts for examples that do not come under IAC. As shown in Section 2.4.1, unergative participles, which otherwise are excluded in prenominal position, become acceptable when modified by adverbials that contribute to resultativity. As regards transitive participles, if the base verb does not lexically encode a result meaning, they cannot prenominally modify a noun, even though an adverb like *recently* is present.

(110) a. * a (recently) thanked/helped person
b. a broken/painted box (Wasow (1977: 338, 346))

It is also the case that the same participle is acceptable with one noun but not with another. When one scratches one's head, the result is not **a scratched head* but when one scores a glass surface the result is *a scratched surface* (Bolinger (1967: 9)).

(111) a. * a scratched head, sent goods, rung bells
b. a scratched surface, labeled goods, dented bells (Bolinger (1967: 9))

Unaccusative participles are productive with salient, relatively stable result states, according to McIntyre (2013). The (a) examples below are out because they, lexically or pragmatically, do not have the referents of modified nouns end up being in such a result state.

(112) a. * the gone/left/entered people
b. the departed/escaped people (McIntyre (2013: 34))

(113) a. * an ascended mountaineer/a grown boy
b. an ascended Christ/a grown tree/a grown up boy (McIntyre (2013: 34))

McIntyre (2013) states that *depart* and *escape* (cf. *detach, debar; attach, appear; emerge, emit*) have resultative prefixes while *gone*, *left* and *entered* do not. Pragmatically, for example, men but not trees have culturally recognized full-grown states (McIntyre (2013: 34), following Bresnan (1995:12)). Similarly, *a mountaineer ascended* is atelic, and entails no goal, while *Christ ascended* describes an ascent to Heaven rather than a goalless levitation act, he states.

Finally, as already mentioned in Section 2.2.3, unergative verbs like *confess*, *recant*, and *declare* designate verbal actions that change one's moral, legal, or administrative status (Bresnan (1995: 14)). This means that the participles denote some kind of result

state of a preceding event denoted by the participle.

All this is predicted by RSC. However, we still have a large number of examples that are not subject to RSC, as already discussed by McIntyre (2013). *Play*, *study* and *pat*, being atelic, do not encode an endstate. Yet their participles are acceptable in prenominal position.

(114) unplayed pianos, well-studied phenomena (McIntyre (2013: 35))

What is interesting is that when the prefix, particle or adverb is taken away, the participles turn out to be infelicitous. At first glance, it would seem that this is because the base verbs do not lexicalize a clear result state, much like *thank* and *send*. But the result state account ends up in failure given the preceding examples.

(115) a. * played pianos, studied phenomena
b. * a thanked person, sent goods

The key point in dealing with this problem is that, as already clear, to look at the prefix, particle and adverb, on the one hand, and their combination with the participles, on the other hand. As has been mentioned in Haspelmath (1994: 159) and Sadler and Arnold (1994: 193), the modified noun seems to be an affected object. Such prefixes, particles and adverbs in fact serve to assign affectedness to the object in a way or another. In **played pianos*, it is hard to say that the pianos are affected by anything, while in *unplayed pianos*, they may well be affected on the negative side. The degree adverb *well* coerces the object to be gradable so as to affect the object. Crucially, such affectedness brought about by the adverb's coercion is qualitative rather than quantitative. Quantitative affectedness has been well studied by, for example, Tenny (1987), who defines affectedness on the basis of the notion of

delimitation, which signals quantity, but not quality. For example, (116a) entails that the apple is holistically consumed while (116b) does not have such entailment.

(116) a. Bill ate an apple.
b. Bill ate at the apple.

Qualitative affectedness seems to have not been justified in a principled way. What is certain is that qualitative affectedness does not entail consumption of the object. But like quantitative affectedness, qualitative affectedness is accompanied by some change. If a new phenomenon has not been studied, it may be totally unknown to us, but if it has been well studied for a certain period of time, it is not unknown any longer. A change then takes place from unknown to known. One might think that such qualitative affectedness may not be derived by analogy with that affectedness defined by Tenny (1987) because the latter requires completive change, i.e. the apple must be holistically consumed, while qualitative affectedness here does not, i.e. *a well-studied phenomenon* is not necessarily entirely known to us and there is nothing unknown with it. Note, however, that change entailed by quantitative affectedness is in fact not necessarily holistic, though consumption may be. For example, the quantitatively affected object in the following sentence does not necessarily end up with paint all over it (Jackendoff (1990: 170)).

(117) Bill sprayed the wall (with paint). (Jackendoff (1990: 170))

This, if our analogy here is correct, leaves a possibility out there that qualitative affectedness coerced by the adverb *well* does not produce telicity or boundedness effects. This in turn accounts for why atelic verbs such as *play* and *study* are possible to form participles, i.e. *unplayed pianos* and *well-studied phenomena*. Note that this is

unpredicted by RSC, which requires a participle to denote a result state and its base verb to be telic. Another example is the following. *Talk about* is clearly not telic and does not have a result state meaning. But its participle is acceptable in prenominal position if it is modified by the degree adverb *much*. Here again, the adverb coerces the object to be affected qualitatively, much as in the case of *well*.

(118) the much talked about new show (Sadler and Arnold (1994: 190))

We can now conclude that a condition other than IAC and RSC is at work in participial formation. Let us formulate it as Affectedness Condition.

(119) Affectedness Condition (AC):
The noun modified by a prenominal participle must be affected.[27]

We, however, still have cases in which participles are well formed in prenominal position but are subject to none of these three conditions. Such participles are typically contextually constrained, as we will see in the following subsection.

### 2.4.3. Pragmatic Condition: Informativeness and Adverbial Modification

The following two pairs are the most representative examples that are not subject to the three conditions discussed above.

(120) a. # a built house
b. a recently built house

Verbs like *build*, being telic, lexically encode a COS meaning and certainly affect the object, which is a theme or patient argument. We then expect that *a built house* would be acceptable in principle given either of IAC, RSC and AC. This is not the case, however. In order to explain this problem, Ackerman and Goldberg (1995)

propose the following, which is termed Informativeness Constraint here.

(121) Informativeness Constraint (IC):
APPs can only occur if they are construable as predicating an informative state of the head noun referent.[28] (Ackerman and Goldberg (1995: 18, 28))

The contrast in acceptability in first pair above is then readily accounted for. The participle *built* designates a property that is already implied by the frame semantics or encyclopedic knowledge associated with the head noun referent and hence not construable as predicating an informative state of it. To designate such a property, the participle requires to be combined with some other element, the adverb *recently* here, that serves to make the head noun referent more informative. This constraint, based on their Non-redundancy Constraint, makes a contrast to Grimshaw and Vikner's (1993) event structure account of participles formed from a certain type of verbs. The latter account fails to capture certain facts. For example, in the following pairs, *kill* and *murder* share the same event structure, yet their participles exhibit a difference in acceptability in prenominal position.

(122) a. # a killed man
b. a murdered man

Under Ackerman and Goldberg's (1995) generalization in (123), which is subsumed under their IC, the semantically less specific *killed*, whose base verb *kill* is a or superordinate level verb, is not preferred vis a vis the semantically richer *murdered*, which is one of troponymic counterparts of *kill*, as well as the near-synonyms of *killed*, including *assassinated*, *slain* and *martyred*.

(123) An APP phrase is not felicitous if it is based on a superordinate level verb which contrasts with semantically more specific predicates.

(Ackerman and Goldberg's (1995: 27))

The addition of an adverb rescues the unacceptable *killed* because the adverb serves to make the modification semantically more specific, on the one hand, and to make the head noun referent more informative, on the other hand.

(124) a. # a killed chicken
b. a freshly killed chicken (Ackerman and Goldberg's (1995: 27)

The same applies to the following pairs.

(125) a. surreptitiously taken item/#taken item
b. freely given funds/#given funds
c. thinly cut meat/#cut meat
d. carelessly told secret/#told secret

(Ackerman and Goldberg's (1995: 26-27))

However, it seems that IC cannot be entirely correct. There are examples that are not subject to IC, but to IAC or RSC. Consider the following.

(126) a. an escaped thief
b. #a run thief
c. a run away thief

To escape, to run and to run away do not differ with respect to the paradigmatic informativeness of the head noun referent. Under IC, *a run thief* would be acceptable because the participle, in principle, is construable as predicating an informative state of the thief, much as in the case of the other participles/participial phrases, because if there is a thief who has run, there is also a thief who has not run. The infelicitous *a run man* is then not subject to IC but to IAC or RSC.

### 2.4.4. Conclusion

We have discussed four conditions of participial formation so far. Now we have the questions. What is the relationship between the four? Do they function dependently or independently? Bresnan (1995: 15) states that RSC and IC are members of what may be a family of conditions on the use of participles. Her discussion, and Ackerman and Goldberg's (1995), too, already imply that these two conditions are correlated and dependently on each other. As clear from Bresnan's (1995: 13) personal communication with Adele Goldberg, *a grown man* refers to a culturally recognized endpoint, namely adulthood, while *a grown tree* does not since there is no culturally recognized end state of treehood. Under IC, it would be that being grown cannot be construable as predicating an informative state of trees since trees are generally grown; there are no trees that are not grown, in principle. In contrast, not all men have a state of being adult. So there is an interaction effect between the pragmatic IC and the lexical semantic RSC.

Bresnan (1995) and Ackerman and Goldberg (1995), however, do not refer to AC, ignoring affectedness effects as discussed in Section 2.2.4.2. As noted in there, resultativity and affectedness are also interacted with each other, though there is what they do not share. In this regard, Haspelmath (1994: 159) notes in passing that it becomes useful to characterize a thing by means of a resulting state only if the previous event affected or changed the thing somehow. For example, an abused child is affected by the abusing action, he notes. Similarly, in *unplayed pianos* and *the much talked about new show*, the pianos and the new show are affected qualitatively. What is important here is that such examples as these also fall under IC, as briefly noted by Bresnan (1995: 14) and extensively discussed by Ackerman and Goldberg's (1995).

It then follows that RSC, AC and IC enter into a ternary relation. Interestingly, as

discussed by many, only internal arguments, not external ones are affected by the actions they participate in. Moreover, verbs with internal arguments readily show unaccusativity effects (Levin and Rappaport (1995)). This calls for a ternary relation among IAC, AC and RAC. It then turns out that there is a quaternary relation among the four conditions. They can function independently but not always. Each of them has their own virtues of explaining specific groups of participle and they altogether make up a family of conditions on participial formation.

## 2.5. Summary and Conclusion

This chapter has provided an extensive overview of the literature on prenominal participles and sorted out them according to their four different properties. It was shown that characterizing them as adjectival *vs*. verbal is not as effective as characterizing them as Stative *vs*. Eventive, though the former has a role to play in treating them from a lexicalist perspective. The Stative *vs*. Eventive (*vs*. Resultative as a subtype of Eventive) captures more interpretive facts of the participles. Stative participles involve S-eventuality and Eventive participles T-eventuality. Both kinds of eventuality serve as the source of the verbness of participles. The noun-based *vs*. and verb-based distinction is also important for dealing with a group of participles such as *travelled* and *experienced*. In terms of argument structure, prenominal participles are classified as transitive-based, unacusative-based and unergative-based, the last of which includes the *confessed* type and the *travelled* type.

With this done in Section 2.2, Section 2.3, employing a DM-based structural approach, presented a unified representation of the various types of participle. It was shown that Statives as well as Eventives (including all subtypes) involve a verbal

projection vP because they involve eventualities, from which their verbness comes. The difference between the two lies in $Asp_{Lex}$'s restriction of verb types. The required stativity of the participle is, however, brought forth via the stativizing $Asp_{Gram}$.

In the case of Resultatives, the required resultavity is located in different heads. In the case of the former, lexical aspect is active and in the case of the latter, grammatical aspect is. The distinctive interpretations of Eventives are attributed to the kind of the functional projection above vP, that is AspP. Noun-based participles are headed by an adjective head $Adj^0$, which is realized as *-ed* in the case of having the base noun as an ordinary noun. In the case of involving a metaphysical noun, the noun projection NP dominates AspP, in which the participle is inflected, with the dominating $Adj^0$ remaining empty.

Section 2.4 reviewed and summarized four conditions on participial formation, one being syntactic and the remaining three semantic. It was shown that none of the four conditions apply all types of participle independently, but they interact with each other and make up a family of conditions.

The discussion in this chapter has provided a direction to deal with prenominal participles with a broader view, which, I hope, has covered most, if not all, attested types of prenominal participle in PE and will have supporting roles in dealing with those in Early English. I have not aimed to deal with every aspect of various sundry things related, but hopefully the discussions presented in each (sub)section have shed a light on them in one way or another.

# Notes to Chapter 2

1. Henceforth, unless otherwise specified, when I refer to 'participles', I am referring to (prenominal) past participles in this chapter.
2. See Chomsky (1986b: 98-99) for Full Interpretation and Chomsky (1981: 49) for Case Filter.
3. See Bruening (2014) for discussion of some other distinctions. The adjectival *vs*. verbal distinction is observed to be too coarse by, for example, Embick (2004: 355) and classifying participles as adjectives is quite pointless unless we have a theory about lexical categories (Lundquist (2013: 17)). The lack of distinctive definitional properties for adjectives is discussed by Baker (2003: 190ff) and Morzycki (2014: 83-83), for example.
4. Henceforth, 'transitive-based participle', 'unaccusative-based participle' and 'unergative-based participle' are abbreviated as 'transitive participle', 'unaccusative participle' and 'unergative participle'.
5. See Embick (2004: 360, fn.6) for discussion of such participles from another perspective.
6. Bruening's (2014) another rejection of treating this group of participles as transitive is based on the fact that they are not allowed in predicative position (**She is confessed/recanted/avowed/declared/sworn/admitted*). In this regard, they are on a par with the *alleged* type again. Their unacceptability in predicative position, however, is not unique to them. It is the general property of attributive-only modifiers. As discussed by, for example, Morzycki (2015: 29, 45-48), the *alleged* type and the *former* type of adjectives take an argument hence impossible in

predicative position much as in the case of the *load* type of verbs as discussed in Levin and Rappaport (1986). *The feathers remained stuffed in the pillow* is well formed while *The feathers remained stuffed* is not (Levin and Rappaport (1986: 636)). So, it is unreasonable to consider that it is because they, the participles in (20) and (21), are not acceptable in predicative position that their base verbs are transitive verbs.

7. Marvin (2003), however, presents examples in which the participle, he claims, can only be interpreted as stative resultative.
8. They belong to neither stative nor resultative as identified by Embick (2004).
9. See Ritz (2012), for example, for more detailed discussion.
10. 'Lexical resultative' and 'Grammatical resultative' correspond to 'Stative resultative' and 'Perfect resultative' in Section 4.
11. For related discussion, see Gehrke (2015) and McIntyre (2013, 2015), who propose the following generalization.

    (i) State Relevance Hypothesis: Event-related satellites are unacceptable in (German, English, Hebrew) unless they contribute to the description of the state expressed by the participle or of the theme during the interval *i* during which this state holds. They are most acceptable if they provide information which can be inferred solely by inspection of the theme during interval *i*.
12. Post-*be* resultatives also lend support to this. *Is gone* entails *has gone* and *is dead*, *has died* (cf. Binnick (1990: 268).
13. Henceforth, capitals are used to distincguish what I refer to here from the traditional terms.
14. Distinctions of various resultative constructions between grammatical and lexical derivations have been widely discussed. For example, *hammer* itself does not have a resultative meaning and the result state is expressed by employing a secondary

predicate as in *John hammered the metal flat* (Embick (2004: 356)).

15. I thank Robert I. Binnick for providing me with this *wounded* example.
16. Experiential Eventives and (Grammatical) Resultatives also differ with respect to what they focus on. The former more focus on the pastness of the event while the latter on the current state.
17. According to Parsons's (1990: 234ff) original discussion, what he calls Resultant state is intended for what is commonly referred to as 'perfect state', which is associated with the Perfect of result, not with Experiential perfect, as often mentioned in the literature on the field. His definition of Resultant state, however, does not dissociate Experiential perfect from Resultant state, which seems to have not been explicitly discussed in the literature.
18. See Ritz (2012) for a summary of previous discussions of how to define perfectivity of perfect clauses.
19. This, however, does not necessarily mean that Eventives are always Experiential; they can sometimes be Resulative in appropriate contexts. Thus the question is not what the temporal context is, but rather what the *salient* temporal context is, as Binnick puts it (p.c.).
20. The label 'Stative', referring to Stative participles derived from verbs, is used as opposed to 'pure Stative'.
21. The feature [FIENT] is an alternative to the familiar [BECOME], indicating that the event moves towards a state. But [FIENT] is not entirely like [BECOME] in that it coerces a non-inchoative root to be stative. See the subsequent discussion in the text.
22. See Section 2.2.1.3 for discussion of another empirical problem with Embick's

(2004) account.

23. Sadler and Arnold (1994: 210) present a possible explanation of this. Kind-modification modifiers are merged with the nuclear noun in the lexicon, constituting a cluster. Under the current DM framework, it would be that such modifiers are merged with the root before the nominalizing head N merging with the root, which is a syntactic operation, however. This is to say that the entire structure in (88) merge with a root rather than with an NP as its speacifier.
24. The general meaning of the suffix 'having X, provided X' is represented by the subscript [have].
25. *Untraveled* in the following example can be paraphrased by 'that has no experience of traveling' rather than 'that has not traveled yet', clearly indicating that negation takes scope over the metaphysical nominal head, which in turn has a wider scope than the participle.

    (i) She seems too elegant to be an untraveled country girl.(COCA [NEWS: 2000])
26. This leaves a possibility out there that AspP is not the dominating projection in participial formation, but AdjP is.
27. I modify Bresnan's (1982) theme subject condition as IAC as presented here, given that a goal, patient and experiencer can also be modified by a prenominal participle (Levin and Rappaport (1986), Grimshaw (1990: 124-129)).

    (i) a. untaught children
        b. a badly paid agent
        c. unserved customers (Levin and Rappaport (1986: 629-630))
28. I will elaborate on this in Section 4.3.4, based on Tenny (1987).
29. 'APPs' is an abbreviation for 'Adjectival Past Participles'.

# Chapter 3

# Postnominal Past Participles in Present-day English: Structure and Labeling

## 3.1. Introduction

Postnominal past participles, though continuously studied, have received less attention in the literature. It has been observed that they denote events rather than states, unlike prenominal ones. Accordingly, they are eventive participles, not stative ones, in terms of the stative *vs*. eventive distinction. On the other hand, they are verbs, not adjectives, in terms of the earlier lexical distinction between adjectival and verbal participles. While scholars generally agree on these points, debates on the syntax of postnominal participles, centering on their categorical status and internal structure, have been combative.[1] It has been controversial whether the participles have finite relative clause structures, with the relative marker and auxiliary unpronounced for some reason, or nonfinite ones lacking inflectional layers and scope-discourse properties. Being treated as reduced relative clauses, which could refer to either reduced finite relatives or non-finite ones, the participles, needless to say, are modifiers of nouns. Postnominal participial modifiers, on the other hand, are interpreted as being predicated of the modified noun, unlike prenominal ones. Yet, linguists have largely ignored the subject-predicate relation, having solely concentrated on the host-adjunct relation.

This chapter aims to provide an accurate syntactic representation of the two

notions, modification and predication, and a device to solve problems that relativization poses for labeling theories in the generative framework. Section 3.2 takes up the first issue. The main proposal is that reduced relative clauses as a token of postnominal participial phrases have a small clause structure. In particular, they are headed by a functional head $Pred^0$, which mediates the subject-predicate relation. Section 3.3 addresses the second issue, which concerns labeling problems. It will be shown that relativization of the subject utilizing categorial features produces a modification relation between the subject and the predicate and that labeling of the entire noun phrase also relies on categorial features. Section 3.4 summarizes the discussion in Sections 3.2 and 3.3 and presents some consequences of the categorial feature based approach to labeling problems in relativization.

## 3.2. Categorical Status and Internal Structures

### 3.2.1. Non-finiteness and Reduced Structure: Aspect Phrase

A number of studies such as Kayne (1994), Cinque (2010) and Sleeman (2011) have been devoted to clarifying the internal structure of postnominal participles. Unlike prenominal participles, postnominal ones are tolerant of PPs, which serves as the basis on which clause-like structures are assigned to the participles. The radical difference between prenominal and postnominal participial structures is that the former, concerned with both grammatical aspect and lexical aspect (aspect and aktionsart, in traditional terms), is subject to word syntax while the latter, concerned only with grammatical (and with tense as well), is subject to clause syntax. Cinque (2010) takes it that participial phrases are full clauses in both prenominal and

postnominal positions. Cinque (2010), and Kayne (1994), too, however, does not aim to deal with participial phrases independently, with his analysis ending up an overgeneralization as far as the semantic and structural details are concerned. They propose that postnominal participial phrases are CPs, but without providing an empirical basis for their proposals. Sleeman (2011) attempts to refine their CP analysis, but still ignores some details. The key point of their proposal is that the CP relative is selected directly by the functional head $D^0$, not by the host noun modified by the clause. This Kaynean tradition, however, is not preferred as far as the selection is concerned. That is, $D^0$ selects for NP rather than CP in order to satisfy its nominal feature [N], in the sense of Chomsky (1995: 282).[2]

(1) the [$_{CP}$ [$_{NP}$ book]$_i$ [$C^0$ sent $t_i$ to me]]

In this subsection, I, following Chigchi (2016a), propose an AspP analysis, which takes postnominal modifiers as reduced relative clauses. Thompson (2001) provides evidence that reduced relatives are not CPs or TPs, unlike finite clauses. For example, no complementizer may be present in reduced relatives, unlike in non-reduced relatives.

(2) a. The passengers that were waiting for flight 307 complained to the flight attendant
b. * The passengers that waiting for flight 307 complained to the flight attendant. (Thompson (2001: 296-297))

(3) a. the jewels that were stolen
b. * the jewels that stolen

Similarly, inflectional elements cannot appear in reduced relatives.

(4) a. The passengers who should/could/may/might be waiting for the flight

spoke to the flight attendant.

b. * The passengers should/could/may/might waiting for the flight spoke to the flight attendant. (Thompson (2001: 298))

(5) a. the jewels that were should/could/may/might be stolen

b. * the jewels should/could/may/might stolen

Thompson's (2001) syntactic argument shows that the CP and TP projections are missing in reduced structures.[3] This does not only point to the fact that superficially reduced and non-reduced relatives differ with respect to whether CP and TP elements are present or not. This line of argument is in fact based on a principled theory of tense and aspect rooted in Reichenbach (1947) and developed later by Hornstein (1990), for example. Based on these, Thompson (2001) argues that Speech time is associated with TP, Reference time with AspP, and Event time with VP. Although he only deals with present participial clauses, which, he reasons out, consist of only Reference and Event time, his analysis can extent to past participles with a reduced relative structure. In fact, Hudson (1973) already observed that Reference time must be involved in reduced relatives including both past and present participial clauses. Hudson (1973: 254) concludes that in reduced relatives, tense is interpreted either deictically or derivatively. By 'deictic', Hudson (1973) means that Event time is interpreted to be before Speech time, and by 'derivative', he means that Event time is interpreted to be before Event time referred to by the main clause. For example, in the following sentence, the publishing event denoted by the participle in the reduced relative is in the past – Event time preceding both Reference time and Speech time. In this case, neither of Reference time and Speech time is before or posterior to the other, both referring to the present.

(6) Books published before the nineteenth century are very expensive to buy.
(Hudson (1973: 251))

The same is true of reduced present participial clauses. For example, in the following example, Event time is before Speech time, whether Reference time is before or co-temporal with Speech time, in consistent with Hudson's (1973) conclusion.

(7) The people living here twenty years ago had a maid. (Hudson (1973: 253))

But when Event time is not before Speech time and Reference time, there will be a clash, yielding an ill-formed sentence.

(8)* The people living here twenty years ago now live in Glasgow.
(Hudson (1973: 253))

Note that Speech time and Reference time in the above sentence is both present and the present participle does not refer to a past event. If the event is past, then a present participle cannot be used here. A past tense has to be used to denote the past event.

(9) The people who lived here twenty years ago now live in Glasgow.

In the case of passive/past participle, the sentence would employ a reduced relative like the following.

(10) The people forced to live here twenty years ago now live in Glasgow.

This is a further illustration of the validity of Hudson's (1973) conclusion, as also confirmed his example given below.

(11) Books published before the nineteenth century are very expensive to buy.

(Hudson (1973: 251))

This observation brings us back to the point that Reference time is involved in reduced relatives. If Reference time is not present, it is hard to interpret these sentences as such, since there would be no time that serves the criteria for Event time to be evaluated.[4,5]

The availability of AspP for reduced relatives is also supported by the presence of a certain preposition that serves to express the Perfect meaning. Hudson's (1973) example containing *since* clause clearly indicates that reduced relatives have a Universal/Continuative perfect meaning.

(12) a. Books published since the nineteen-fifties are often paperbacks.
b. * Books that have been published *since* the nine-teen-fifties are often paperbacks. (Hudson (1973: 251))

We now conclude that aspect is involved in postnominal participial clauses, as represented in (13).

(13) Books [$_{AspP}$ … published before the nineteenth century … ] …

Note that AspP here differs from that in prenominal participles in that it does not particularly take care of a result state. That is, postnominal participles always denote an event, not a result state, as has been observed since Bolinger (1967). This is exemplified by the following sentence, though Hudson (1973) does not present it for this purpose.

(14) Asparagus grows best in ground dug over well five years before.
(Hudson (1973: 254))

This sentence is not interpreted as, for instance, '… ground that has been dug …', because there would be a clash with the past time adverb *five years before*. Hudson (1973) implies that the most likely interpretation would be '… ground that is dug …'. Superficially, this is possible as resultatives can occur in the simple present tense. However, when co-occurring with an adverbial referring to the past, the resultative sense disappears and the present tense is not applicable.

(15) a. The car is damaged.
b. * The car is damaged five year ago.

Therefore, the most probable interpretation of the reduced relative in (14) would be that '… ground that was dug …'. This amounts to saying that reduced participial clauses do not denote a stative result state, unlike prenominal participles.[6] To sum up, AspPs in prenominal and postnominal participles are different with respect to whether they take care of resultativity or not.

### 3.2.2. Predication and Small Clause Structure: Predicate Phrase

In the preceding subsection, we saw that reduced relatives do not involve CP and TP layers but involve AspP. In what follows, we provide an accurate representation of how AspP, the predicate in the subject-predicate structure, are combined with the head noun, the subject of the predicate. Recall that reduced relatives have a modification relation, the primary one, with nouns, on the one hand, and a predication relation, the secondary one, on the other hand.[7]

Here, it is noticed that postnominal participles as reduced relatives do not generally differ from postnominal adjectives with respect to the fact that unlike prenominal modifiers, postnominal ones generally have a predication relation, in addition to a modification relation, with the head noun, as has been discussed in one

way or another by a number of cross-linguistic studies including Bolinger (1952 [1972], 1967) on Modern English and Modern Spanish, Higginbotham (1985) and Qurik et al. (1985: 420ff) on Modern English, Stavrou (1996: 83-84) on Modern Greek and Fischer (2000) on Old English. The question then naturally arises here for postnominal participles, which are analogous to postnominal adjectives:

(16) How is the predication relation between a postnominal participle and the head noun expressed structurally?

This subsection is devoted to answering this question. My main claim is that: The highest projection of reduced relatives is a predicate projection, PredP. The relevant representation is as follows.

(17) $NP_i$ [$_{PredP}$ $t_i$ $Pred^0$ [$_{AspP}$ $Asp^0$ … $t_i$ … ]]

NP originates in AspP, specifically the internal argument position of V, and moves to the Spec of PredP, where a predication relation between NP and AspP, the participial phrase, is established. NP further moves out of PredP to a position where a modification relation is established.

Before elaborating on this, we need to know how a predication relation in general is structurally represented. First note that a predication relation is often found in small clause structures. When it comes to small clauses, there immediately arises a question of what the node SC, for Small Clause, is exactly. An earlier analysis of small clauses (Stowell (1981, 1983) among others), which in fact does not correlate small clauses to predication, assumes the following structure for small clauses, with the note having no its own categorial identification; it's category depends on that of the lexical predicates. That is, the head of the predicate projects and determines the

category of the node SC.

(18) (…) [$_{SC\ (=AP/NP/VP/PP)}$ Subject [$_{AP/NP/VP/PP}$ Predicate]

Another view (Williams (1983) and much subsequent work), however, assumes that the subject and the predicate are two separate constituents in a predication relation, as represented below, where the category of SC is not dependent on that of the predicate but it still remains unclear what projection SC should be identified as.[8] SC, which itself is an ad hoc category label, lacks a particular head.

(19) (…) [$_{SC}$ Subject [$_{AP/NP/VP/PP}$ Predicate]

The mainstream analysis in recent studies, however, holds that the correct category label represented by SC is in fact a predicate phrase (Bowers (1993), Svenonius (1994), Moro (2000, 2004), den Dikken (2006), Shlonsky and Rizzi (to appear)). The category label of small clauses, which was a subject of controversy in earlier approaches, is now PredP, headed by Pred$^0$ (Bowers's Pr and den Dikken's R), which has propositional functions (Bowers (1993: 633), Baker (2003: 35), etc), as represented below, where, for simplicity's sake, 'Subject' and the category AP/NP/VP/PP are replaced by NP and XP, respectively. In such a structure, the subject-predicate relation is mediated by the functional head Pred$^0$.[9]

(20) (…) [$_{PredP}$ NP Pred$^0$ [$_{XP}$ X …]]

Now the crucial step is to show that PredP is indeed projected in reduced relatives as well as in small clauses. As evidence for the existence of PredP, Bowers (1993: 605) and Moro (2000: 43ff) present the following data, where *as* is a realization of Pred$^0$.

(21) They regard John as crazy and as a fool. (Bowers (1993: 605))

Interestingly, this *as* also appears in reduced relatives, but restricted to the past participle variant.

(22) a. The plan as currently conceived is seriously flawed.
(Huddleston and Pullum (2002: 1146))

b. Additionally, the case as presented focuses on a broad evaluation …
(COCA [ACAD: 2003])

It may well be argued that *as* here is a relative marker, just like the complementizer *that* and relative pronouns like *which* or *who* (Jespersen (1927: 168ff), Quirk et al (1985: 1115-1117), Huddleston and Pullum (2002: 1147-1148) and many others). In the following sentences, *as*, introducing the sentential relative clauses, plays the same role as *which*, which takes the preceding sentences as its antecedents.

(23) a. She is extremely popular among students, as is common knowledge.
(cf: which is common knowledge.)

b. I live a long way from work, as you know. (cf: which you know)
(Quirk et al. (1985: 1116))

*As* also introduces relative clauses containing a gap of a certain type of element.

(24) a. This is a photograph of the church as it was _ in 1900.

b. No one thought that Margot, as she was then known _ , would last the distance. (Huddleston and Pullum (2002: 1150))

The gap in relative clauses introduced by *as* can also be the subject or object of the verb or preposition, as shown below.

(25) a. such woman as knew Tom

b. such woman as Tom knew

c. such woman as Tom dreamed of (Jespersen (1927: 168))

All this strongly suggests that *as* introducing relative clauses is indeed a relative marker.[10] Note that in (24) and (25), the non-reduced relatives are in the domain of the noun phrases, much as in the reduced relatives in (22). This parallelism requires us to say that *as* in reduced relatives is also a relative marker.[11]

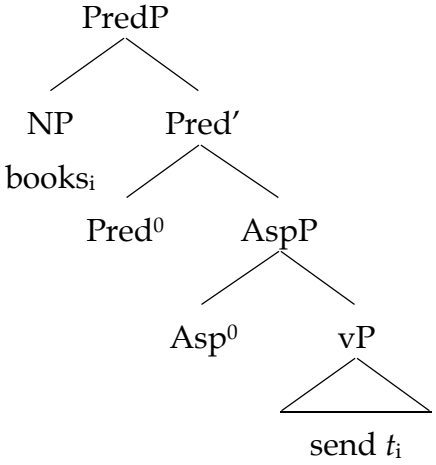
We now conclude that reduced relatives are indeed PredPs, like small clauses. Additionally, *as* in reduced relatives is in fact a realization of Pred$^0$.[12] An additional support for this argument is from the following data.

(26) The faculty of speech is the most salient quality of men as distinct from animals. (Egawa (1991: 397))

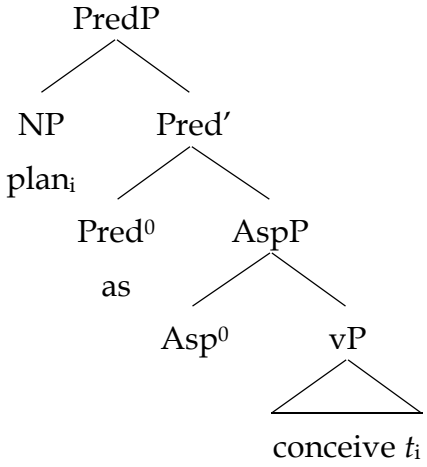
In (24), *as* cannot be a preposition and *as distinct from animals* cannot be a PP because prepositions do not generally take AP complements (Bowers (1993: 596)). Rather, *as* is a lexical realization of Pred$^0$ and *as distinct from animals* is a reduced relative with the PredP structure.[13]

We use a tree diagram to represent the PredP structure of participial reduced relatives as follows.

(27) a. The books$_i$ sent $t_i$ to me are about global warming.



b. The plan$_i$ as currently conceived $t_i$ is seriously flawed.

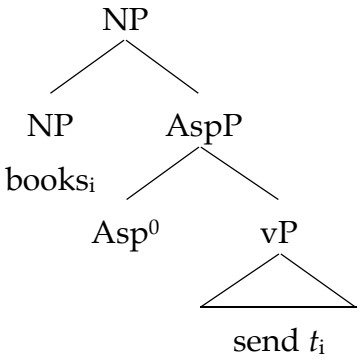



NP is base-generated in the thematic domain, in which it gets an internal theta role, and subsequently moves to the Spec of PredP to satisfy the EPP feature of Pred$^0$. The predicativity of postnominal participles, as opposed to the attributivity of prenominal ones, is produced in this phase and is evaluated later at the interface. Predication here, however, is not the primary relation between NP and the participial phrase. This, I argue, can be attributed to the fact that NP does not halt in the present position but further moves. In this sense, movement of NP to the Spec of PredP, creating a head-complement configuration with Pred$^0$, produces a predication relation and further movement of it to the final landing site produces a modification relation, the primary one.

One might wonder why it is not the case that NP moves directly to its final landing site, skipping over the Spec of PredP, given that PredP is not criterial and can be skipped over, as discussed by Shlonsky (2014a), for example. This is possible in principle and in fact is what would be predicted by the traditional head-raising/head internal analysis of (non-reduced) relative clauses, which does not postulate PredP. However, as far as predication is concerned, the PredP analysis is intriguing and more convincing in light of the facts concerning *as* and other predication-involving

constructions. Most, if not all, of such constructions are analyzed as small clauses with a PredP structure. If we abandon the PredP analysis for reduced relatives, how predication is computed and expressed in syntax remains problematic.[14] Moreover, assuming that NP moves directly to its final landing site outside the clause, whether PredP is present or not, would be wholly ignorant of passivization of NP because passivization is an operation of placing the object argument to a subject position within the clause. Note that the final landing site of relativized NP, which is already beyond the clause, can never be a subject position. In that case, passivization and relativization in reduced relatives would be undistinguishable and a single operation would encompass both of the two, as diagrammed below.

(28) The books$_i$ sent $t_i$ to me are about global warming. (assume that PredP is not projected)




Any attempt to find an intermediate position for NP in the AspP domain would fail to assign subjecthood to NP and therefore the subject-predicate relation cannot be established. Taking this into account, the PredP analysis puts us on right track to correctly understanding the structure of participial reduced relatives and allows us to postulate PredP so as to capture both passivization and the subject-predicate relation. In this sense, the Spec of PredP functions a subject position much as in (finite or nonfinite) TP, where the Spec of TP is a subject position.[15]

## 3.3. Labeling Problems

This section addresses certain issues concerning labeling in relativization. In particular, we deal with problems that relativization in reduced relatives and non-reduced relatives as well poses for the recent labeling theory and provide a strategy to solve them. It will be clear through the discussion in this section that relativization is, in point of fact, an operation that derives modification out of predication.

### 3.3.1. Why and How Labeling Matters Here?

This subsection first outlines why and how labeling matters in relativization in reduced relatives and then briefly reviews the labeling algorithm proposed by Chomsky (2013, 2015).

The following derivation is what we have so far.

(29) $NP_i$ [$_{PredP}$ $t_i$ $Pred^0$ [$_{AspP}$ $Asp^0$ … $t_i$ … ]] (= (17))

NP originates in AspP and moves to the Spec of PredP, where a relevant predication relation is established. NP further moves out of PredP to a position, where a modification relation is established. Here arises a technical question:

(30) What position does NP further moves to?

Given that PredP is the highest projection of reduced relatives, with no functional head selecting it, N cannot land in a Spec position. Nor does it occupy in any away a head position because it is a phrase, not a head, as exemplified by:

(31) The [total destruction of the city] caused by the earthquake made many

families homeless.

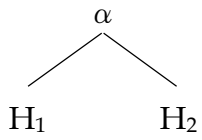
This would give rise a phrase – phrase structure, namely {NP, PredP} again.[16] Here comes a subsequent question:

(32) What is the label of {NP, PredP}?

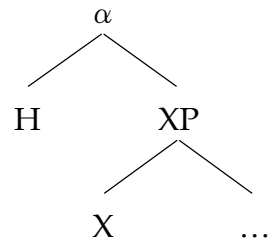
The label is bound to be NP as it is. But, given current labeling theories in the Minimalist framework, this compels us to solve the problem of how the label NP is assigned in the computation. Following subsections are devoted to dealing with this problem. Before going into detail, let us briefly review the labeling mechanism advocated by Chomsky (2013, 2015).

First note that there are three patters of merge:

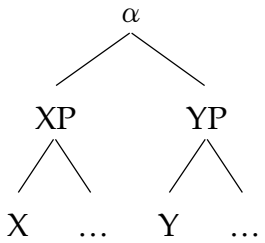
(33) a. $\{H_1, H_2\}$ (merge a head with another)




b. {H, XP} (merge a head with a phrase)




c. {XP, YP} (merge a phrase with another)




For each pattern, the set must be labeled in the need of identifying what object it

is at the interface (Chomsky (2013: 43)). In this sense, labeling may be considered as a subcase of the earlier Full Interpretation, as Rizzi (2015a: 321, fn.3) puts it. Chomsky (2013) proposes a labeling algorithm, which provides devices to label the set in each of the three patterns. He argues that the basic principle that underlies the labeling algorithm is minimal search – a third factor operation ((2013: 43).

The first pattern {H, H} seems to be restricted in merge of a functional head and an unlabeled lexical root, where the former projects to label the set because the latter itself has no label. Merger of two heads brought about by head movement is treated as a subtype of adjunction, which is not subject to minimal search in a strict sense, and therefore no particular labeling problems arise with head movement. Labeling in {H, XP} is straightforward: H projects since H is closer to $\alpha$ than the head of XP. What appears problematic under minimal search is the last pattern of merge, where neither of the heads of XP and YP is closer to $\alpha$ than the other. Here Chomsky (2013, 2015) provides two strategies for achieving labeling.

(34) a. To make XP and YP share a feature.[17]
b. To move one of XP and YP.

The first strategy requires XP and YP agree with respect to some feature so that the shared feature becomes the label of {XP, YP}. Under the second strategy, when one of the phrases moves, the copy left behind becomes invisible, leaving the remaining phrase as the only competitor for labeling.

Note that {NP, PredP}, associated with each of the two positions, namely the final landing site of NP and the Spec of PredP, falls under the third pattern of merge and the two strategies reviewed above come to be relevant. Before returning to whether and how the strategies work in labeling in relativization and find us answers to the

questions in (30) and (32), let us review two related previous accounts of labeling problems in (reduced) relatives and see whether they could provide solutions without appealing to the two labeling strategies.

### 3.3.2. Labeling in Relativization: Previous Accounts and Their Problems

Object reduced relatives have a property in common with non-reduced relatives. That is, the head noun is (base-generated and) interpreted as an internal argument of the predicate in the relative clause. A large number of studies have been devoted to clarifying this thematic relation. Those studies have two branches, which differ from each other as regards whether the head noun is base-generated in the argument position of the verb within the clause and subsequently moves out to the surface position (Schachter (1973), Vergnaud (1974), Kayne (1994), Bianchi (2000), Donati (2006), Donati and Cecchetto (2011, 2015)) or merge directly in that position without preceded by raising from within the clause. In the latter case, it is often assumed that a null operator, which matches the external head noun, serves to build the required thematic relation (cf. Chomsky (1977), Jackendoff (1977), etc).

(35) a. Head internal: books$_i$ sent $t_i$ to me
b. Head external: books Op$_i$ sent $t_i$ to me

Leaving aside the details of each analysis, we focus ourselves on how the head, whether it is internal or external, is combined with the relative clause to make up a syntactic object that is to be correctly labeled. A familiar study on this subject is Donati (2006) and Donati and Cecchetto (2011, 2015). They, adopting the head internal analysis, argue that what undergoes raising to the surface position is a lexical item rather than a phrase. Specifically, as shown below, the noun man merges within the clause and subsequently raises to become the head noun.

(36) the~~N~~ [$_N$ man that ~~man~~ will come] (Donati and Cecchetto (2011: 546))

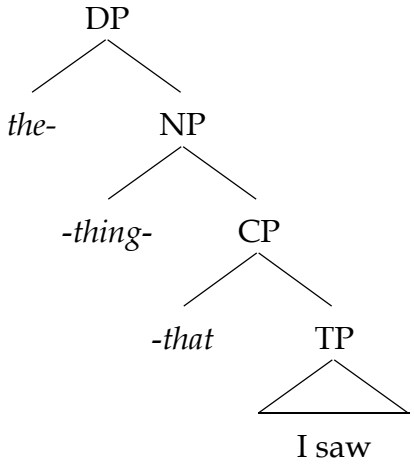
Three assumptions are made by them to connect relative structures with labeling. Firstly, what merges as an argument of the verb is a lexical item $n^0$; secondly, that lexical item is selected by the functional head $D^0$, which is still inside the numeration when it attracts $n^0$;[18] and thirdly and most importantly, $n^0$, after it raises, selects for the clause, from which it moves out, and projects by virtue of being a lexical item. All the three assumptions are based on their Probing Algorithm given below.

(37) Probing Algorithm
The label of a syntactic object {α, β} is the feature(s) that act(s) as a probe of the merging operation creating {α, β}. (Donati and Cecchetto (2011: 521))

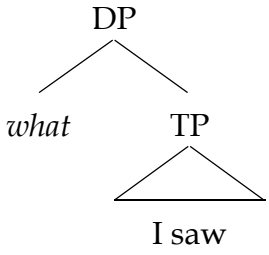
Admittedly, this analysis is more appealing than D-CP/TP analysis proposed by Kayne (1994), Bianchi (2000) and Tozawa (2013) in that it is consistent with the standard assumption that D, syntactically, selects for a nominal rather than a clause, though there is semantic dependency between a nominal determiner, $D^0$ here, and a restrictive relative clause. However, this analysis faces at least two major problems. Assuming that what is base-generated within the clause is a lexical item is incompatible with the fact that an argument of verbs must be structurally a phrase. What is base-generated within the clause, say, *man* in the above example, should be something like nP, which is composed of a nominalizing $n^0$ and a root *man*, but not $n^0$ alone.[19] Importantly, their assumption would force the head noun and the complement in phrasal nominals like *destruction of the city* to be introduced into the derivation separately. Their trial of fixing this problem using Late Merge seems quite ad hoc because Late Merge applies only to adjuncts, not to complements, and so complements would turn out to be all adjuncts.

The second problem with their analysis is that they treat ordinary relative clauses and free relative clauses alike. This would allow for a host to select for an adjunct, contra the widely accepted view that only a head and its complement enter into a selection relation. Specifically, relative clauses are not a complement to the head noun they modify. Nevertheless, the head noun, say, *man* in the above example, selects for the relative CP. This infelicitous assumption seems to be rooted in their ignorance or unawareness of the asymmetry between free relatives and ordinary relatives. Apparently, in free relatives *what* is the head noun, with which no problem arises, and the clause following it is an adjunct as it is. What calls for caution here, however, is that the apparent head *what* is a composite of a determiner analogous to *the*, a noun core and perhaps what could be taken as a complementizer, as can be represented by *the-man-that (I saw)*, for example.[20] This morphosemantic complexity of *what* forces it to appear as a head selecting for an adjunct. But this is not the case and free relatives cannot be treated alike with ordinary relatives as far as selection is concerned because, more specifically, in free relatives what may be a complementizer, which would be an element belonging to the clause, has fused into *what*. Largely due to this, it is not appropriate to claim that *what* selects for 'a relative clause'. What appears to be selected by *what* is instead merely part of a relative clause. Structurally, such a relative clause, with no (overt or null) complementizer, equals TP, not CP.[21] A correct syntactic representation of free relatives then should be like the following, where what may be a complementizer and the antecedent is not present in the clause, but in the relative *what* conceptually. They have fused into *what* in the sense of Huddleston and Pullum (2002: 1068).

(38) Conceptually analyzed structure:




(39) Syntactic structure:[22]




This is exactly the reason why free relatives do not allow any kind of complementizer and why they lack reduced counterparts. Recall that reduced relatives are non-finite, not needing to project CP. If they are combined with the relative *what*, its composite structure necessitating the existence of an intangible complementizer will conceptually have a collision with them.

(40) a. * what that/which I saw (*vs.* the thing that I saw)
b. * what sent to me (*vs.* the thing sent to me)

In this regard, the relative *what* is not a lexical head, but a phrasal head, as also suggested by Chomsky (2013: 46). All this strongly suggests that there is no perfect parallelism between free relatives and ordinary relatives with respect to selection in question. In sum, the selection relation that is established between a head and an apparent adjunct CP cannot be extended to ordinary relatives as suggested by Donati

and Cecchetto (2011). Their implementation of their own Labeling Algorithm thus ends up in failure, though the algorithm itself remains valid and plays an important role in labeling in relativization in the way presented in Section 3.2.4.

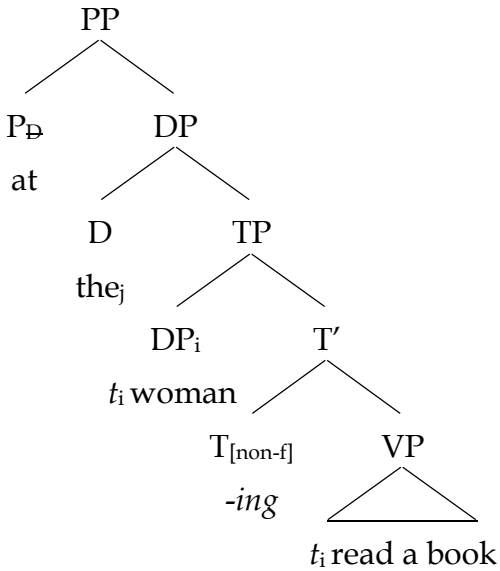
All this puts us in a position to adopt Donati and Cecchetto's (2011) Labeling Algorithm, repeated below, but reject their method to implement it in relativization.

(41) Probing Algorithm

The label of a syntactic object {α, β} is the feature(s) that act(s) as a probe of the merging operation creating {α, β}. (Donati and Cecchetto (2011: 521))

In what follows, let us review another analysis of labeling in reduced relatives. Tozawa (2013), adopting Donati and Cecchetto's (2011) Labeling Algorithm, proposes that in reduced relatives the D head is extracted out of the moved subject in the Spec of a non-finite TP and projects at the landing site by virtue of its probing feature, as shown below. Reduced relatives are thus the complement to D, which the preposition *at* in the numeration searches for and raises.

(42) Look at the woman reading a book.




(Tozawa (2013: 39))

The problem with this analysis, to mention only the biggest one, is raising of $D^0$

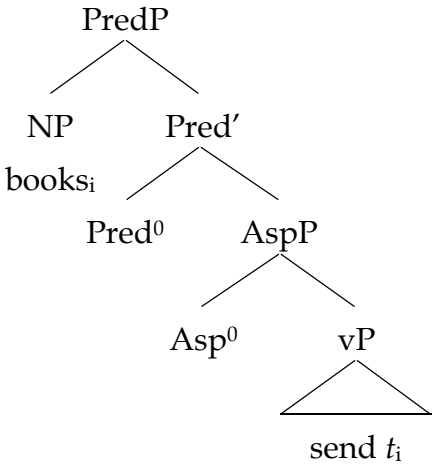
from a moved subject.[23] In response to a question from a reviewer, Tozawa (2013) states in a footnote that the moved subject is active since it is not Case-checked in the Spec of the non-finite TP and therefore is able to move. Whether this holds or not, it will distort the fact that English is not a determiner-raising language. Furthermore, when there is nothing like a preposition or a verb that searches for D, as in *The woman reading a book* is my friend, how to raise D remains unexplained. This D-raising analysis of reduced relatives is presented in the spirit of Donati and Cecchetto's N-raising analysis of non-reduced relatives but suffers different empirical problems pointed out above.

Thus, labeling in reduced relatives (and non-reduced relative also) calls for an alternative analysis consistent with the fact that the head noun originates as a phrase rather than a head within the relatives clause and determiners do not raise in English.

### 3.3.3. Labeling in Relativization: A New Account

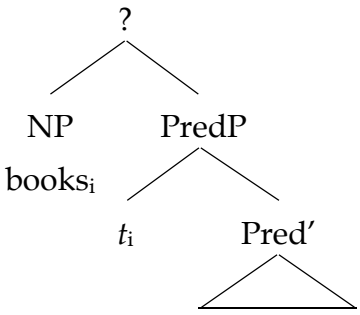
Suppose that we have arrived at the point of derivation where NP has raised from its base-generated position to the Spec of PredP.

(43) The books$_i$ sent $t_i$ to me are about global warming. (= (25))



The derivation proceeds because NP needs to be relativized. The subsequent operation is to drive NP out of the current structure so as to place it in a position, where the primary relation – modification - is established.

(44) The books sent to me are about global warming.




Three questions arise here.

(45) a. What triggers movement of NP from the Spec of PredP?
b. What position is the final landing site?
c. How is the label of the new set {NP, PredP} executed?[24]

The last question of how to label {NP, PredP} is our ultimate concern in this section. Discussion proceeds with aim of answering this question and we will find the answers to the other questions in the course of the discussion. First, it is noticed that the labeling algorithm proposed by Chomsky (2013, 2015) fails to label {NP, PredP} here.

(46) a. To make XP and YP share a feature. (To create a criterial configuration in the sense of Rizzi (1997) and his related works.)
b. To move one of XP and YP.

With the first strategy, in (44) we need to identify any feature that can be shard between NP and PredP. Unfortunately, no features are shared between the two at this point. The second strategy is not working here either because further movement

of the NP is already impossible. This being so, relativization in question appear to admit an alternative approach. The labeling algorithm I propose in what follows is able to recue {NP, PredP} from remaining unlabeled. The analysis is a novel blend of two proposals already present in Matushansky (2006) and Donati and Cecchetto (2011, 2015). The standard generative theory for years has hold that selection plays quite important roles in constructing phrasal structures and only a head already in the derivation can select or probe, in a strict sense. This tradition, however, is challenged by Donati and Cecchetto (2011, 2015), who emphasize that selection must activate categorial features. Let us first briefly review how categorial features work in Donati and Cecchetto's labeling mechanism. Donati and Cecchetto's activation of categorial features interacts with the following assumption.

(47) … an element in the numeration can probe an element in the computation and trigger external Merge. (Donati and Cecchetto (2011: 546))

For example, the verb *think* in the numeration has a selection feature [C] and probes for the syntactic object *that Mary will leave*.[25] As a result, merger of the two takes place.

(48) a. {think$_C$, . . .}
b. [$_C$ that Mary will leave]
c. [think$_{\in}$ [$_C$ that Mary will leave]] (Donati and Cecchetto (2011: 546))

Donati and Cecchetto extend this to relative clauses. But their implementation of the proposed labeling algorithm in relative clauses ends up problematic, as we have seen earlier. In what follows, let us have a look at how to implement it correctly. Suppose that we are now at the point of having constructed the relative structure as in (49b). Now this syntactic object PredP is to be searched for by the unvalued

categorial feature [uN] on *the* in the numeration.[26]

Because PredP has no nominal feature [N], [uN] on *the* has to look into PredP. PredP contains *books*, which has an interpretable feature [iN] (and an unvalued [D] also). Then [uN] on *the* probes [iN] on *books*.

(49) a. {the$_{[uN]}$, . . .}
b. [$_{PredP}$ books Pred$^{0}$ [$_{AspP}$ send $t_i$ to me]]
c. [the$_{[uN]}$ [$_{?}$ books$_{[iN]}$ Pred$^{0}$ [$_{PredP}$ $t_i$ [$_{AspP}$ send $t_i$ to me]]]

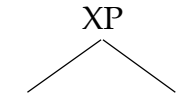
As a result, *books* is attracted to a position close to *the*. But to what position?[27]

It cannot be the complement position of *the*, unlike in the case of *think that …*. This is because landing in that position would give rise to a non-restrictive structure, contra the fact. That is, as shown below, PredP would adjoin to DP *the books*, but not to the NP *books*. One might suggest Late Merge of PredP with *books*, as Donati and Cecchetto do. This, however, is problematic, as we have seen earlier.

(50) [[the$_{[\sout{uN}]}$ [$_{NP}$ books$_{[iN]}$]] [$_{PredP}$ $t_i$ [$_{AspP}$ …$t_i$ send to me]]]

*Books* does not select for PredP, out of which it moves, because it is not a head, but a phrase consisting of a nominalizing head n$^{0}$ and a root. *Books*, however, can merge with PredP in principle and do so because nothing prohibits the possibility of merger of the two, as Moro (2004: 393) puts it, "Merge is unrestricted" (cf also Chomsky (1995). This is exactly what happens in External Merge of two phrases in many cases including bare small clauses in the sense of Moro (2000, 2004). He says that bare small clauses are not projected by any head (2004: 400), as diagramed below.[28]

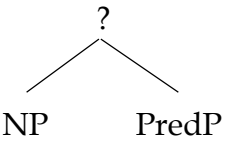
(51) Structure of bare small clauses




(Moro (2004: 400))

In this sense, {NP, PredP} at issue is in fact an Internal version of merge without the intervention of a head. The landing site for *books* is then simply the sister of PredP. This gives the following diagram, where the syntactic object as a result of merging *books* and PredP is unlabeled, but which is only a temporary state of affairs because the interface requires all nodes to be labeled.[29]

(52) {NP, PredP} (with D still in the numeration)

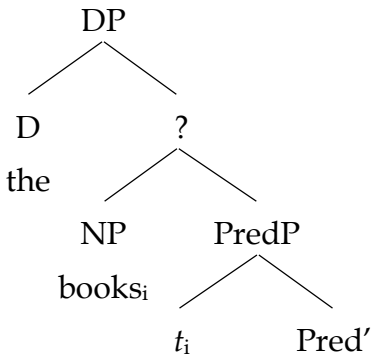



To put it more concretely, assuming that merge without the intervention of a head is unrestricted opens up the possibility of merger of NP and PredP here, as already noted. But this, at this point, does not necessarily mean that NP and PredP must merge. Note that merge, when we speak of it as unrestricted, takes the set of formal features of two syntax objects to yield a third one, as Moro (2004: 393) puts it. Moro (2004) leaves himself unspecific as to what formal features take part in bare small clauses, however.[30] In the case of {NP, PredP} here, we could then seek another way of yielding {NP, PredP}.

The mechanism works as follows. First note that NP has moved out of PredP because of [uN] on D. This gives two distinct construction spaces, as represented in (52). Since D is still in the numeration, what are present in the computational space are only NP and PredP. Now the derivation has arrived at the level of {NP, PredP}

just like {ZP, YP} in (51), with a bare small clause effect.[31] A fuller structure is like:

(53) The books sent to me are about global warming.




Here, not that a head, whether it probes from the numeration or from a syntactic position, must have a complement as usual. The intuitive idea here is the need of having a complement enforces merger of two syntactic objects in the computational space if, for any reason, a head fails to select a syntactic object as its complement. In particular, *the* fails to select for PredP because PredP lacks [N]. Similarly, *the* cannot take *books* as its complement because if it can, the resulting structure would be incorrect, as noted above. This in fact naturally follows from a property of Internal Merge (IM): An element that undergoes IM does not merge with the head that initiates IM. For example, T attracts the subject from a lower position but does not merge with it; what merges with the subject is its projection TP, or T' in the X-bar tradition. In the usual case, what initiates IM is a head already in the derivation. In contrast, in the case of relativization in question, it is a head in the numeration that triggers IM.

We now turn to discussion of how categorial features continue to play roles in labeling the new set {NP, PredP}. The substantial question here is which of NP and PredP becomes the label of {NP, PredP}. Recall that the feature-sharing strategy presented by Chomsky (2013) and the movement strategy by Moro (2000, 2004) and

Chomsky (2013) both fail to label {NP, PredP} here. Instead, Matushansky's (2006) proposal is crucial here. His main proposal is:

(54) Suppose we are merging a head $X^0$ and a nontrivial tree YP, and $X^0$ bears the uninterpretable categorial feature [uY]. C-Select establishes an asymmetric relation between the two heads, ... (Matushansky (2006: 78))

Matushansky's position is clearly that categorial features paly important roles in structure building. He is not concerned particularly with labeling. But his proposal implies that categorial features must be activated for labeling, which is important part of structure building in latest generative theories. The formulation below then naturally follows from (54).

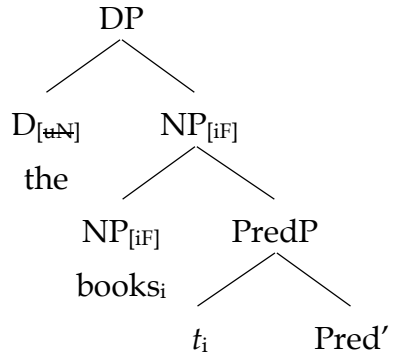
(55) A head $Y_{[iY]}$ or its projection $YP_{[iY]}$, which is selected by another head $X_{[uY]}$ projects and becomes the complement of X.

This formulation states that an unvalued categorial feature on a probing head renders the categorial feature of a goal, whether a head or phrase, active to project. As a result, the derived syntactic object gest labeled, which is the complement of the probing head. This strategy of labeling is now formulated as:

(56) Labeling Algorithm for Relativization (LAR)
Project the selectee where its categorial feature satisfies the selection feature of the selector.[32]

Noticeably LAR attaches importance to (categorial features of) selected phrases, which project. LAR works in reduced relatives as follows. The NP *books*, which bears [iN], is selected by its unvalued counterpart on D and therefore is activated. Since it is active, it is available for a further operation, labeling here. As a result, it projects and {NP, PredP} is labeled NP, with [uN] on D valued and deleted.

(57) The books sent to me are about global warming.




Now we have the answers to all the three questions posed at the beginning of this subsection, repeated below.

(58) a. What triggers movement of NP from the Spec of PredP?
b. What position is the final landing site?
c. How is the label of the new set {NP, PredP} executed?

This whole process of labeling produces a modification relation between the head noun and the participial phrase. Combined with a predication relation, which is produced in the domain of PredP, a modification relation makes up the relativization relation in postnominal participial phrases.

## 3.4. Summary, Consequences and Related Issues

This chapter has addressed the issue of the syntactic structure of postnominal participial phrases in connection with labeling of the entire phrase NP. Major issues were presented with aim of clarifying how a predication relation in addition to a modification relation, which together make up the relativization relation, is expressed in syntax. The labeling theory of the latest Minimalism in the generative framework served as the theoretical background of the proposed analysis. In particular, it was shown on the basis of empirical evidence that PredP is projected

above AspP and serves as the domain in which a predication relation is produced, with subjecthood assigned to the internal argument of the predicate, in particular, by moving it to the Spec of PredP. After the subject-predicate relation is established, the subject further moves to the sister position of PredP. This subsequent movement is triggered by satisfaction of the unvalued nominal feature [uN] on the D head. D probes from the numeration the subject in the computation space, creating a symmetric Internal Merge of NP and PredP. Since labeling (Full Interpretation, in some sense) and Dynamic Antisymmetry do not permit such merge to remain at the interface unless they are labeled. A modification relation is thus produced. The labeling job is done by categorial features on D and NP. This compensates for failure of the feature-sharing strategy and movement device in relativization. So, LAR in (56), which is termed Feature Activation strategy below, and what have been proposed in Donati (2011, 2015) and Chomsky (2013, 2015) make up what may be a family of labeling algorithms in the merge-based framework. It is noticed that none of the family members function in all cases awaiting labeling. What is right in a case may be right in another and vice versa.

(59) Labeling Algorithm
   a. Project the head: $\{_{HP}$ H, XP$\}$
   b. Feature sharing: $\{_{TP}$ DP$_{[\varphi]}$, TP$_{[\varphi]}\}$
   c. Singleton set: $\{_{vP}$ $t_{subj}$, vP$\}$
   d. Feature activation: $\{_{NP}$ NP$_{[uF]}$, XP$\}$

If the proposed analysis is on the right track, it leaves open the possibility that non-reduced relatives are also headed by Pred$^0$ in that they also have a predication relation with the head noun. This could be evidenced by the following data, where *as* could be treated as a realization of Pred$^0$.

(60) a. This is a photograph of the church as it was _ in 1900.
b. No one thought that Margot, as she was then known _ , would last the distance. (Huddleston and Pullum (2002: 1150))

Consistent with this view is Rizzi's (1997) analysis of non-reduced relatives as headed by subordinator head. In this sense, *as*, which is treated as a conjunction by traditional grammarians, would be a realization of the subordinator head. One also could argue that it is a prepositional complementizer that occupies the highest head of the left periphery of CP domain. Wherever it is to be located in, it creates the link between reduced and non-reduced *as*-relatives and allows us to treat them alike with respect to a predication relation. This in turn suggests a parallelism between *as*-relatives and *wh*-relatives.

The upshot of the proposed analysis in this chapter is that relativization, in both reduced and non-reduced clauses, is not simply built up in terms of pair-merge adjunction; relative clauses do not pair merge with the head noun. The modification relation is produced in the syntactic computation and evaluated at the interface. In this sense, the proposed analysis diverges with Chomsky's (2004, 2013) pair merge analysis of adjuncts. The crucial difference between them is that for pair merge, a modification relation is automatic in nature, with nothing special with it in the syntactic computation until transfer occurs, while for the algorithm proposed in this section, a modification relation is produced in the computation. Furthermore, for pare merge, a modification relation or adjunction is predetermined before merger of a modifying element and a modified element, while complementation is produced in the computation when selection/probing occurs. In contrast, the proposed algorithm assumes that merge itself does not distinguish adjunction and complementation.[33] This is to say that the adjunction *vs.* complementation distinction is made in the

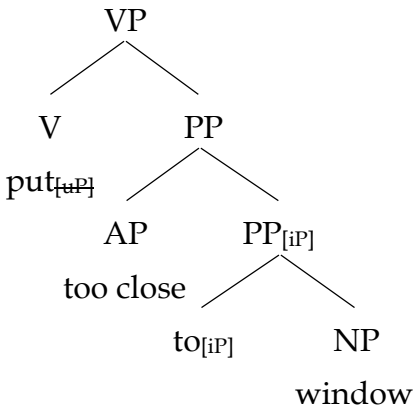
computation; the type of merge, i.e. set merge and pair merge, is not predetermined at or before the time of merge and there is no need to assume an ad hoc operation like SIMPL, which converts pair merge to set merge at the time of transfer (Chomsky (2004: 118ff)).

LAR gives great importance to roles played by categorial features. Projecting on the basis of categorial features also extends to some interesting cases presented by Hendrick (2007: 95ff). For example, expressions like *close to the window* act ambiguously as either an AP headed by *close* or as a PP headed by *to*, he says (2007: 95).

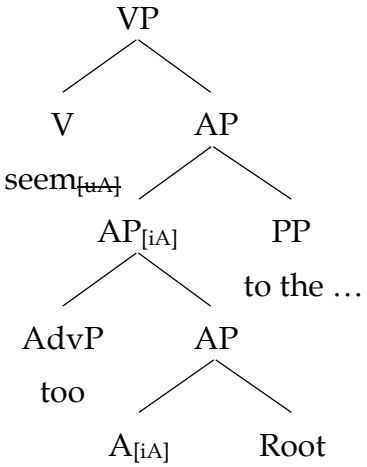
(61) a. She put the plant (too/awfully) close to the window.
b. The plant seems (too/awfully) close to the window. (Hendrick (2007: 95))

Since *put* c-selects for PP rather than AP, the label of the phrase is PP, where the categorial feature [iP] on *to* renders *to the window* active, which wins the labeling competition.[34] In the reverse case, [uA] on *seem* probes [iA] on *close*, whereby it projects, as shown below.

(62) a. She put the plant (too/awfully) close to the window.

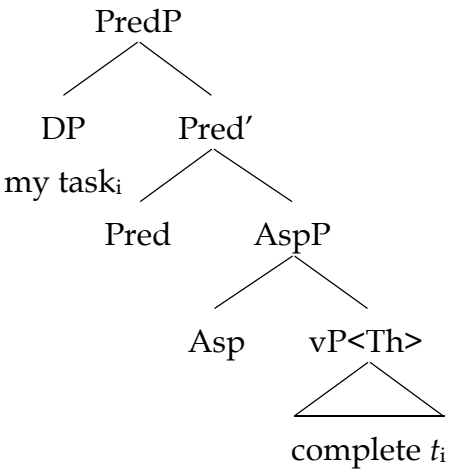


b. The plant seems (too/awfully) close to the window.




Another merit of the categorial feature based analysis is concerned with a certain type of small clause structures in which the subject halts in the Spec of PredP. One of such constructions is, for example, the absolute adjunct construction, which has been a hard nut to crack within the labeling theories. Under the PredP analysis, the subject of absolute adjuncts is expected to be located in the Spec of PredP, as shown below.

(63) My task completed, I went to bed. (Curme (1931: 152))




Under Chomsky's labeling algorithm, it is predicted that {DP, PredP} (Pred' in terms of X-bar schema) would remain unlabeled, yielding an infelicitous structure, contra the fact. This apparent contradiction is readily explained under the categorial

feature based approach. The subject halts in the Spec of PredP because it remains inactive. Note that no categorial feature renders it active at this point because [iN] on it has been satisfied by [uN] on D.

What seems problematic is why it is possible to halt in the Spec of PredP, which is a non-criterial position (Shlonsky and Rizzi (to appear)). Recall that an element in a non-criterial position must move, as they argue. This problem, however, can be resolved if there is a higher functional criterial projection above PredP. This problem then turns to be one of whether the subject of absolute adjuncts has a scope-discourse property, which could assign criterial status to the subject. This is a non-trivial question and to provide complete evidence to show that the subject of absolute adjuncts have a required interpretive property will take us far away. I, instead, simply illustrate two lines of reasoning.

First, no clause-internal element can appear on the left of the subject through topicalization, for instance. This could mean that the subject occupies the left most position, in particular, perhaps the Spec of TopP or ForceP.

(64) a. [My task completed before 7 pm], I went to bed.
b. * [Before 7 pm, my task completed], I went to bed.

The second line of reasoning is concerned with the asymmetry between some small-clause-talking verbs. Shlonsky and Rizzi note that the subject of small clauses selected by *think*, but not *consider*, cannot undergo raising.

(65) a. I consider [John intelligent]
b. John$_i$ is considered [ $t_i$ intelligent]
c. a man$_i$ who I consider [ $t_i$ intelligent]

(Shlonsky and Rizzi (to appear: 5))

(66) a. * I think [John intelligent][35]
b. John$_i$ is thought [ $t_i$ intelligent]
c. a man$_i$ who I think [ $t_i$ intelligent] (Shlonsky and Rizzi (to appear: 7))

They analyze this example as instantiating their Subject Criterion, arguing that SubjP, which is criterial, is optionally projected above PredP, which is not, in the case of *consider*, but obligatorily projected in the case of *think*. Another difference between the two verbs, not discussed by Shlonsky and Rizzi, is that the particle *as* is compatible with the former, but not with the latter, as shown below.

(67) a. I consider him as my best friend.
b. I consider him as intelligent. (Yokogoshi (2007: 178))

(68) a. * I think him as my best friend.
b. * I think him as intelligent.

The above data could show that the structure of small clauses may be richer and closer to finite for *think* than for *consider*. That is, it may be close enough to accommodate a topic-like subject in the case of *think*, hence SubjP.[37] This leaves a possibility out there that the structure of absolute adjuncts might be like that of those selected by *think*. If this is the case, the final landing site for *my task* is the Spec of SubjP.

(69) a. My task completed, I went to bed. (= (63))
b. [$_{SubjP}$ Subj$^0$ My task [$_{PredP}$ $t_i$ Pred$^0$ [$_{AspP}$ completed $t_i$]]], I went to bed.

This analysis can extend to small clauses in an argument position, as exemplified below.

(70) a. John unhappy is impossible to live with. (Bolinger (1952: 1137))
b. [$_{SubjP}$ John Subj$^0$ [$_{PredP}$ $t_i$ Pred$^0$ [$_{AP}$ unhappy]]] is impossible to live with.[36]

Postulation of SubjP above PredP remains compatible with the categorial feature based approach presented in this section, as far as the above data is concerned. However this approach is evaluated in the general framework, it deserves credit for (reduced) capturing the property shared between relative clauses and small clauses and providing a united analysis of them.

One final remark on roles of categorial features in labeling theories as well as on the general subject of this chapter is concerned with free relatives, pointing to the possibility of resolving the potential problems they could pose for labeling theories, in terms of the categorial feature based approach in connection with the spirit of Distributed Morphology.

# Notes to Chapter 3

1. Henceforth, unless otherwise specified, when I refer to 'participles', I am referring to postnominal past participles in this chapter.
2. The D-CP analysis is based on such data as below, which clearly shows the dependency between $D^0$ and a relative CP.

   (i) a. John made headway.
   b. * John made the headway.
   c. John made the headway Bill made.

   This dependency between $D^0$ and a relative CP, however, cannot represent that the former must select syntactically for the latter. I assert that this dependency is subject to what we may call 'theta-identification' in the sense of Higginbotham (1985: 564ff), but not to categorial selection. I will not elaborate on this here, however. Let me present a case that indicates that semantic selection does not always represent syntactic selection instead. In (ii), the postnominal PPs are not allowed without the prenominal adjectives, indicating that they are selected by the adjectives. But the suntan structure is like (iiia), not like (iiib).

   (ii) a. a famous actress for her *Lady Macbeth*
   b. a fat man around the waist (González Escribano (2005: 566-588))

   (iii) a. [$_{DP}$ a [$_{NP}$ [$_{AdjP}$ fat] [$_{NP}$ man [$_{PP}$ around the waist] ]]
   b. [$_{DP}$ a [$_{AdjP}$ fat [$_{NP}$ man] [$_{PP}$ around the waist] ]]

   For detailed discussion of the syntactic structure of such phrases, see Section 5.2.4 and González Escribano (2005).
3. Tozawa (2013: 39-40) argues that postnominal participial phrases are TPs because

they allow the epistemic adverb probably, e.g., *the person probably being a worker on the ship*. Indeed, epistemicity takes a wide scope over eventuality (Cinque (1999: 86-87)) and epistemic adverbs are often treated as adjoining to the inflectional projection (Ernst (2002: 453)). However, it does not seem that there is always a particular syntax projection matching a speaker-oriented element such as *probably*. Speaker oriented modality is involved in various positions quite freely. For example, as shown by *the probably correct assumption*, the speaker-oriented epistemic adverb is deeply embedded within the DP structure and no current theory seems to have postulated a modal projection in adjective phrases embedded in DPs.

4. See Hudson (1973) for further discussion of a difference between reduced and non-reduced relatives. Other than temporal semantics, information package also behaves different between reduced and non-reduced relatives (McKoon and Ratcliff (2003).
5. It might appear that Hudson's (1973) argument does not contribute to involvement of Reference time in reduced relatives since what he takes to be 'derivativity' (roughly corresponding to Reference time, here) is a matter of main clauses rather than of reduced embedded ones. However, his main clause 'derivativity' may well extend to reduced relatives in the framework of the recent refined theory in that field.
6. This turns out contradictory to Hudson's (1973) conclusion about non-reduced relatives, not about reduced relatives. Unfortunately, he makes an incorrect conclusion on non-reduced relatives.
7. Modification rather than predication is primary in that if the latter were primary,

the construction would be something like a small clause. See the subsequent discussion.

8. Williams (1983) offers evidence for the non-constituency. My purpose here does not require me to review the details of his arguments.
9. Basilico (2003), argues that the subject of verbal small clauses, e.g., *I saw John leave*, remains in its base-generated position in thematic domain. That is, the subject is not located in the Spec of $Pred^0$. This would give the following representation.

   (i) (…) [$_{PredP}$ Pred [$_{XP}$ NP X …]] (X=V)

10. For extensive discussion, see Jespersen (1927: 168ff).
11. I, however, do not treat *as* in reduced relatives as a complementizer like *that* for the reason that subject-less non-finite clauses cannot be headed by a complementizer, though it can be treated as a subjunct in the traditional sense.

    (i) a. * The case that presented by …
        b. * The case that to be presented by …

12. In this sense, reduced relatives, headed by $Pred^0$, resemble rich small clauses as opposed to bare small clauses, the latter of which is generated without the intervention of a head, as discussed by Moro (2000: 40ff; 2004), for example.
13. The voice projection is left out here.
14. The claim that predication has to be computed and expressed in syntax is not a new observation. For example, Bowers (1993: 633, 647ff) states that $Pred^0$ (his Pr) is required because it creates an unsaturated propositional function, which is then predicated of the subject NP (his external argument).
15. SubjP as assumed by Rizzi and Shlonsky is not projected above PredP for two reasons. Empirically, reduced relatives lack an overt subject within them, leaving any available position empty. This leads to the fact that the reduced relatives,

being nonfinite clauses, lack scope-discourse properties, which are typically selected by finite clauses (But see Section 3.4 for discussion of apparent counterexamples). Theoretically, SubjP is criterial and therefore blacks movement of the subject out of its Spec (cf. Shlonsky and Rizzi (to appear) and their related works). If we assume that reduced relatives project SubjP, relativization would be prohibited and they would turn out be non-relative clauses.

16. Note that when NP is in the Spec of PredP, they form a set {NP, PredP}, too. PredP in that case would be Pred' in X-bar schema.
17. To make XP and YP share a feature is to create a criterial configuration in the sense of Rizzi (1997) and his related works.
18. By assuming that $D^0$ in the numeration can select a syntactic object, Donati and Cecchetto successfully avoid a violation of Extension Condition (cf. Chomsky (1995: 190)), on the one hand, and successfully captures the categorial selection between $D^0$ and its complement, on the other hand.
19. They claim that words are heads, which probe by virtue of bearing categorial features (edge features, in Chomsky's sense). This claim is wholly ignorant of the synthetic property of words and is incompatible with the widely accepted DM theories, which claim that words are composed of categorizing functional heads and category-less roots. This renders Donati nad Cecchetto's argument more problematic in that their scenario, if combined with the spirit of DM, would be that what actually moves, for example, in *the man I saw*, is the head $n^0$, leaving the root *man* behind.
20. See also Chomsky (2013: 46) for discussion of this line of analysis.
21. The finiteness of the clause seems to be problematic. Whether it is inherited from

a C head as advocated by Chomsky (2007, 2008) is not uncontroversial.

22. This structure does not mean that the D head can select for TP. Note that the node DP in fact absorbs NP and CP as in the preceding structure, where it is an intangible C that selects for TP.
23. Another problem with this analysis is that it is not compatible with the fact that it is NP rather than TP or CP that is selected by $D^0$ and satisfies its nominal feature [N] (cf. Chomsky (1995: 282)).
24. Note that when NP is in the Spec of PredP, the syntactic object consisting of the two is also {NP, PredP}, as noted earlier, and this syntactic object also needs labeling. Here, the movement strategy in (34b) is at work. That is, after NP moves out of the Spec of PredP, what is left is $\{t_{NP}$, PredP} (PredP here = Pred' in X-bar schema) and is labeled PredP.
25. A similar view appears in Rizzi (2008).
26. The assumption that raising of the internal head of relative clauses is triggered by the categorial feature of $D^0$ is not new. Bianchi (2000: 62ff) assumes that the noun, for instance, *book* in the following example, raises from the complement position of *which* to its Spec.

    (i) $[_{DP}$ the $[_{CP}$ $[_{DP}$ book$_j$ which $t_j]_i$ $C^0$ $[_{TP}$ I read $t_i$ ]]]

    (adapted from Bianchi (2000: 62))

    She states that this takes place in the need of creating a proper agreement/checking configuration for the external $D^0$, *the* here, and NP, *book* here. She implements her assumption on the basis of Manzini's (1994) definition of minimal domain. Under that definition, Bianchi's assumption also covers the simpler case of (ii), she says.

    (ii) $[_{DP}$ the $[_{NP}$ book]] (Bianchi (2000: 63))

27. With Bianchi's (2000) assumption, what moves out of AspP to the Spec of PredP (in order to satisfy Relative Criteria, in the sense of Bianchi (2000)) and NP *books*) would be not simply NP *books*, but be DP with an invisible $D^0$. NP *books* then moves to the Spec of the internal DP in order to satisfy [N] of the external $D^0$.

(i) a. $\{the_{[uN]}, \ldots\}$
b. $[_{PredP}\ [_{DP}\ D^0\ books]_i\ Pred^0\ [[_{AspP}\ send\ t_i\ to\ me]]$
c. $[the_{[uN]}\ [_{PredP}\ [_{DP}\ books_{[iN]j}\ D^0\ t_j\ ]_i\ Pred^0\ [_{AspP}\ send\ t_i\ to\ me]]]$

This derivation, however, is impossible because reduced relatives with the PredP structure, lacking finiteness and scope-discourse property, are hardly said to be (Relative) criterial as Bianchi assumes for non-reduced relatives. Another reseaon to reject such a derivation is that $D^0$, with [N], would select PredP, which is has no [N], contra the standard assumption (cf. Chomsky (1995: 282)).

Merger of external arguments in their first merge position, the Spec of vP in the standard theory, is an equivalent of the case in question (cf. Chomsky (2013)).

28. NP does not halt in the Spec of PredP and must move because the Spec of PredP is not a criterial position (Shlonsky and Rizzi (to appear)). As they put it, "as far as labeling is concerned, specifiers must stay if they are in a criterial configuration; otherwise they must move".

29. Formal features can include phonological, semantic, morphological as well as syntactic features (Moro (2004: 417, fn.11)).

30. In (51), as the normal case of bare small clauses, either of ZP and YP must move, as expected by Dynamic Antisymmetry (Moro (2000, 2004), extending Kayne's (1994) LCA), so that XP is able to be labeled. In contrast, in (52) movement is already unavailable. The computation then has to seek another way to label {NP, PredP}.

31. LAR is in fact on a par with minimal search in the sense that the selectee projects to become the complement of the selector, which instantiates locality, as discussed by Matushansky (2006).
32. Krapova and Cinque's (2012) analysis of finite clausal 'complement' of nouns, i.e. *the claim that Fred didn't report his income*, as reduced relatives, i.e. *the claim which is that Fred didn't report his income*, also gives us the reason that adjunction and complementation are not distinguished by merge.
33. Categorial features on a head percolates up to its projection. In this respect, Matushansky (2006) treats phrasal movement as instantiating pied-piping with respect to categorial features.
34. This pattern seems to be well formed with pronouns, as exemplified below.

    (i) Nobody had thought him capable of that kind of thing.
    (Collins English Dictionary, 8th Edition (2004))

    This could be attributed to the fact that pronouns easily or sometimes obligatorily undergo raising-to-object to the matrix clause, as discussed by Ross (1967) and Lasnik (1999: 201). This difference between nouns and pronouns with respect to SubjP, however, casts doubt on Shlonsky and Rizzi's SubjP analysis of (66a), unless the difference mentioned receives a reasonable explanation from the perspective of scope-discourse properties. Another possible solution is the following. *Him* in (i) occupies the same position as *John* in (66a), namely the Spec of SubjP; it does not move. Rather, the AP (*capable of …*) moves rightward due to its heaviness. This makes sense if we take into consideration the fact that *think*, like *make*, can take AP to form a phrasal verb, such as *think better of*.
35. That *think* selects a richer structure can also be suggested by the fact concerning preposition *of*. As shown below, *as* is obligatory in small clauses selected by *think of*,

unlike in the case of *think*.

(i) a. Mayor Shinn thought of Tommy as a hooligan.
b. * Mayor Shinn thought Tommy as a hooligan. (Balazs (2012: 43))

(ii) a. * Mayor Shinn thought of that Tommy was a hooligan.
b. Mayor Shinn thought that Tommy was a hooligan.

Given that *of*, at least when it is combined with *think*, rejects finite clauses, the structure selected by *think of* as well as *consider* is not richer than that selected by *think* and vice versa.) (Basilico (2003) also observes that there can be a functional projection open for an aboutness subject in small clauses.

36. Where base-generated position of the subject should be is controversial in the literature. Baker (2003: 35ff) takes it that the subject is base-generated outside AP because an adjective does not assign a theta role. In contrast, Basilico (2003) assumes that AP is the thematic domain for the subject, where it is introduced into the derivation.

Language changes to outwit change

- Dwight Bolinger

# Chapter 4

# Prenominal Past Participles in Early English: An Aspectual Change

## 4.1. Introduction

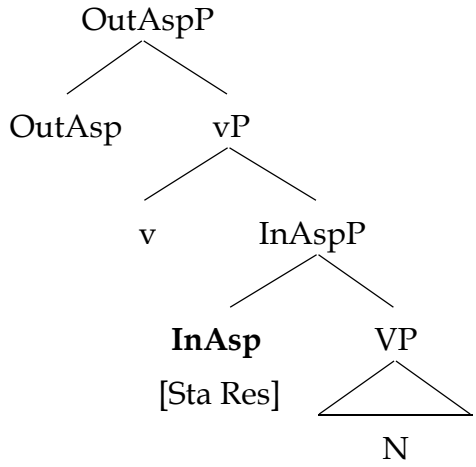
This chapter is devoted to an investigation of the historical development of participial formation, in particular, of prenominal past participles in English. As has been extensively studied and is well known, the Perfect construction (henceforth, the Perfect) in OE had a Resultative meaning, which was available mostly in the *have* periphrasis with the object-participle order and the *be* periphrasis, and the Perfect meanings such as Perfect resultative, Experiential and Universal began to be available after OE. While the historical literature has concentrated on the clause as a whole or the auxiliaries *have* and *be*, less attention has been paid to the participle itself in the clause. This leads to absolute ignorance of the history of participles in nominal domain. This chapter is devoted to investigation of prenominal participles in parallel with post-auxiliary participles in terms of such an aspectual change that took place between inner aspect and outer aspect in participial formation.[1]

Aspectuality is concerned with both lexical semantics of the argument of the head *-ed*, especially of the base verbs, and grammatically produced meanings, which is often discussed in connection with tense. In other words, aspectuality is concerned with both lexical and grammatical aspects of prenominal participles. I will show in this chapter that prenominal participles have expressed resultativity from the

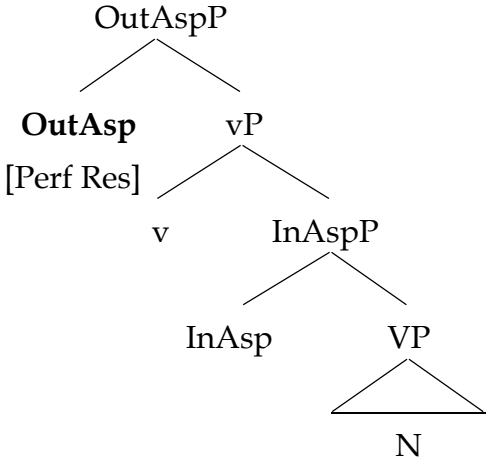
beginning and certain individual developments (or emergences), which were underlain by such a basic aspectual change in resultativity, took place in the history of participles. In particular, the resultativity of prenominal participles was expressed only lexical-semantically at the beginning and over time it came to be expressed grammatically also. To put it another way, prenominal participles in OE expressed Stative result states and later on the participles came to express Perfect result states in addition to Stative result states.[2] I argue that in OE, prenominal participles required their base verbs to lexically or derivationally encode certain meanings, in particular change-of-state (COS) meaning, which serve to express Stative result states and after OE, this requirement on the lexical semantics of the base verb was lost and prenominal participles came to express not only Stative result states but also Perfect result states. I also argue that this development of prenominal participles took place in parallel with that of post-auxiliary participles, though they may have not been exactly simultaneous. That is, the developments of participles in the two contexts have interacted and have been closely related with each other. This is to say that the development of prenominal participles has followed the same course as (4a, b).

From a theoretical perspective, I propose that the required resultativity in prenominal participles was associated only with inner aspect in OE and from EME onwards it came to be associated also with outer aspect. This is diagrammed below.[3]

(1) a. Stative Resultativity is located on InAsp:




b. Perfect Resultativity is located on OutAsp:




As shown in (1a), Stative resultativity is located in the inner aspect head, InAsp, and this is the situation in OE as well as EME onwards. The locus of Perfect resultativity, on the other hand, is the outer aspect head, OuAsp, as shown in (1b), which represent the situation in EME onwards. The trigger of this shift of the locus of resultatvity from InAsp to the OutAsp, I argue, was the loss of aspectual prefixes, which generally function as perfectivizing or transitivizing the verb by affecting its (internal) argument and assigning COS meaning to the verb, and this took place in EME.[4]

The locus shift from InAsp to OutAsp led to an importance consequence. That is,

it made it possible for prenominal participles to be formed grammatically and gave rise to the emergence of certain types of participle as prenominal modifiers in the history of English. Three types of prenominal participles are discussed in this chapter with respect to when and how they emerged. They are: unaccusative participles, e.g., *an escaped thief*, a certain type of unergative participles, e.g., *a practiced liar*, and Eventive participles, e.g., *recently announced visa rules*.

This chapter is organized into four substantive sections, sandwiched between this introduction and a summarizing section. Section 4.2 provides more detailed discussion of the development of Perfect Resultatives as outlined in (1) and certain consequences of it. Section 4.3 discusses the emergence of unaccusative participles. It is shown that the emergence of unaccusative participles was triggered by the emergence of a large number of ergative participles, on the one hand, and it was underlain by the change of the locus shift of resultativity. Section 4.4 discusses the emergence of a certain type of unergative participles and shows that their structural relevance with denominal *-ed* adjectives, which are treated as noun-based participles in this thesis (cf. Section 2.2.2), played a roles in their emergence; on the other hand, the emergence of unergative participles was also a consequence of the locus shift of resultativity.

## 4.2. From Stative Resultative to Perfect Resultative

### 4.2.1. Introduction

This section provides the details of the analysis of the development of Perfect Resultative from Stative Resultative in prenominal participles, which is presented as an instance of aspectual change. I first present three lines of reasoning to explain why prenominal participles in the earliest stage expressed Stative result states and

subsequently came to express Perfect result states in addition to the former. After that, I discuss from a theoretical perspective why this development was possible in the history of English participles. In particular, I propose that the locus of resultativity of prenominal participles shifted from InAsp to OutAsp. I first discuses in Section 4.2.2 how Perfect Resultative was developed in post-auxiliary participles. A related previous study, McFadden and Alexiadou (2010) will be reviewed and shown to be inadequate for capturing the historical status of participles in general. Section 4.2.3 provides the reasons for why prenominal participles expressed Stative result states in OE. Section 4.2.4 identifies the structural positions for the Stative resultativity and the Perfect resultativity. Section 4.2.5 discusses why the locus shift of resultativity took place. Section 4.2.6 presents certain natural consequences of the locus shift. Section 4.2.7 concludes the discussion in all these subsections.

### 4.2.2. The Rise of Perfect Resultative in Post-auxiliary Position

To understand prenominal participles in more depth, we have to take into account their interaction with participles in the *have* periphrasis.[5] This section is concerned with the question of how participles in the *have* periphrasis developed the Perfect sense in the history of English. Let me outline the discussion in this section by first giving a brief overview of the history of participles.

A large number of studies have discussed the two types of periphrasis and participles (Jespersen (1931: 29-31), Visser (1963-73: 2043-2044, 2189ff), Traugott (1972: 144-146; 1992: 191-193), Mitchell (1985: §§728-733), Brinton (1988: 99-102), Parsons (1990: 242-245), Bybee et al. (1994: 68ff), Haspelmath (1994: 161ff), Carey (1996: 35-40), McFadden and Alexiadou (2006, 2010), etc). As has been well-documented in these studies, the Perfect construction (henceforth, the Perfect),

exemplified in (2a-c) and structurally represented in (2d), in OE had a Resultative meaning, which was available mostly in the *have* periphrasis with the object-participle order, as illustrated by the PE examples in (3a-c) and structurally represented in (3d), and in the *have* periphrasis, as illustrated by the PE examples in (4).[6]

(2) Perfect:
   a. I have done my work. (Visser (1963-73: 2189))
   b. I have built the house. (Brinton (1988: 100))
   c. I have bound him. (Parsons (1990: 244))
   d. America [$_{VP}$ [has [[$_{V}$ found ]] [$_{NP}$ a role]]. (Denison (1993: 340))

(3) Resultative:
   a. I have my work done. (Visser (1963-73: 2189))
   b. I have the house built. (Brinton (1988: 100))
   c. I have him bound. (Parsons (1990: 244))
   d. America [$_{VP}$ [$_{V}$ has][[$_{NP}$ a role] [$_{A}$ found]]]. (Denison (1993: 340))

The Perfect points to the action itself, while the Resultative points to the state resulting from the action, as described by Bybee et al. (1994: 64)).[7]

(4) Resultative:
   a. The door is closed. (*vs*. The door has closed. (Perfect))
   b. He is gone. (*vs*. He has gone. (Perfect)) (Bybee et al. (1994: 63))

Of importance here is that the Perfect as well as the Resultative yield result states, as extensively discussed in the literature. But the result states are noticeably different in that result states in the Resultative EXPRESSES that very state, while result states in the Perfect merely ENTAIL it.[8] More specifically, in (2b), for example, (the participle in) the clause EXPRESSES an action and ENTAILS a state, while in (3b), (the participle in) the clause EXPRESSES a state and ENTAILS an action.[9] To give a

straightforward description in an informal style, in the Resultative, the result state is foregrounded and the action had faded into the background and vice versa in the Perfect, as illustrated below.

(5) Resultative:
   a. Stative Resultative: < event, ***STATE*** >
   b. Perfect Resultative: < **event**, *STATE* >

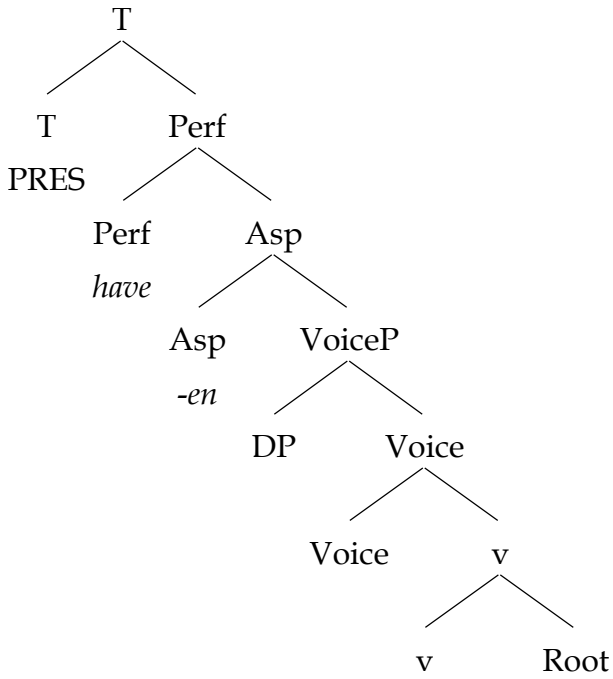
In this chapter, I use 'Perfect Resultative' to refer to the Perfect in (2) and 'Stative Resultative' to the Resultative in (3) in order to reflect that both of them involve resultativity.[10] The individual studies mentioned above have been devoted to clarify how the Perfect Resultative meaning was developed from the Stative Resultative meaning. Two points, which concern us in this chapter, have been agreed by most authors.

(6) a. The Perfect Resultative meaning became available or more salient throughout LOE and EME.[11]
   b. The types of the verb selected in Perfect Resultative have expanded towards PE; that is, the base verb of past participles have become less restricted to certain types;[12] and more additional meanings such as Experiential and Universal became available.[13]

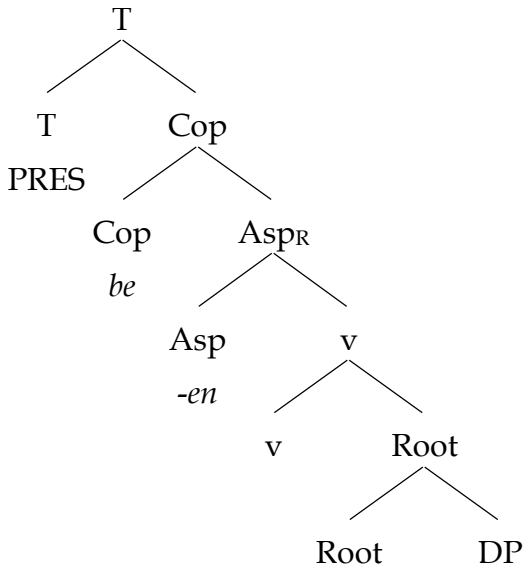
The majority of the literature in the filed has not been concerned particularly with the details of how it was developed, though they have contributed to understanding more about it in various ways. Recently, however, some authors tried to explain this essential question from a theoretical perspective in the generative framework. One familiar study is McFadden and Alexiadou (2010). They analyze the development of the Perfect construction in connection with the auxiliaries *be* and *have*, arguing that *have* underwent a change in its semantics and syntax while *be* did not.[14] They

conclude that "… the *have* periphrasis involved a clause-level Perfect head denoting anteriority, while the *be* periphrasis was a copular construction built around a Stative Resultative participle" (2010: 421), as diagrammed below.

(7) a. The structure of the *have* periphrasis:




b. The structure of the *be* periphrasis throughout the history of English:




(McFadden and Alexiadou (2010: 410-411))

McFadden and Alexiadou (2010: 409ff) propose that the *have* periphrasis in LME onwards contains material at the clausal tense-aspect level denoting anteriority to Reference time, with *have* spelling out the Perfect head. The auxiliary *be*, on the other hand, occupies the Copular head, combining with a Stative Resultative participle. A crucial difference between these two structures turns out to be one between different heads; in the former, the Perfect head is responsible for creating an Extended-now interval extending into the past and is spelled out as *have* (2015: 411), while in the latter, the auxiliary *be* spelling out the Copular head nothing more nor less than the normal copula that appears with predicate adjectives and nouns (2015: 412). They continue to claim that the *have* and *be* periphrases had different structures despite the fact that they were both Stative Resultative in OE; the emergence of the Perfect Resultative sense for the *have* periphrasis has nothing to do with a structural change. Clearly, this analysis attributes the difference between Stative Resultative and Stative Resultative merely to the heads selecting the participle, not to (the lexical-semantics and morpho-syntax of) the participle.

This analysis, however, faces some difficulties. The first can be presented as questioning: How did various types of verb, in particular atelic verbs, in addition to COS verbs, which are basically telic, come to be selected in the *have* periphrasis but not in the *be* periphrasis in EME onwards? Under their analysis, the answer would be that the expansion of verb type is simply due to the semantic change of *have*. It, however, is not clear in their analysis how a semantic change took place with *have* or, to put it another way, what exactly caused *have* (or the Perfect head) to obtain more dynamic senses such as Experiential perfect. With this question still remaining open

in their analysis, it necessitates a more in-depth consideration and analysis of what factors caused the shift, i.e. Stative Resultative > Perfect Resultative in general.

Another difficulty with this analysis is that it ignores to a great extent the widely accepted view and long held belief that the participle itself, not the entire clause, has underwent a change from expressing states to expressing actions, or put it another way, a change from functioning as an adjective to functioning as a verb (cf. Mitchell (1985: §728), Traugott (1992: 191-193) and many others). According this analysis, the difference between Stative Resultative participles and Perfect Resultative ones lies only in the outer aspect head, as seen from the comparison of (7a) and (7b).[15] Inner aspect, what used to traditionally called 'Aktionsart', is totally ignored in this analysis. In (7b), $Asp_R$ is intended for capturing Stative Resultativity. However, it is the head of outer aspect, so it does not impose restriction on the lexical semantics of the verb and any types of verb would be allowed in the *be* periphrasis, contra the fact that the *be* periphrasis basically only allow COS verbs, i.e. *The door is closed; ice cream is melted; The window is broken*, etc. vs. **The door is knocked (*vs. *The door has been knocked); *The car is driven (*vs. *The car has been driven); *The window is hit (*vs. *The window has been hit)*.[16] This asymmetry between COS verbs and others must be attributed to their lexical semantics and associated with inner aspect, rather than outer aspect. Failing to capture this fact, the structure in (7b) in turn dissociates the aspectual prefixes and inflectional status of the participle from the historical change that took place in the meaning and function of the participle. This empirical difficulty exposes the analysis to a theoretical weakness.[17]

Here, I suggest that we should not be restricted to (certain part of) certain structure, but should take a broader view covering all what may matter in a certain

development. I then demonstrate that changes took place not only with the selecting heads, which are lexically realized as *have* and *be* in the case of clauses, but also with the formation of participles. That is, there must have been some change in the means of selecting verbs as inputs of participles; the emergence of the Perfect Resultative sense in participles in both prenominal and post-auxiliary positions turns out be related with the interaction between outer and inner aspects, not merely with outer aspect as implied by McFadden and Alexiadou's (2010) analysis. Importantly, the emergence of the Perfect Resultative sense was developed in post-auxiliary participles in parallel with prenominal participles. In what follows, I elaborate on this.[18] I will mainly consider prenominal participles, not being concerned particularly with the selecting heads *have* and *be*. The core assumption of the analysis applies equally to post-auxiliary participles selected by *have* and *be*, though.

### 4.2.3. Prenominal Participles as Stative Resultative in OE

In this section, I claim that prenominal participles were Stative Resultatives in OE and provide three major reasons for my claim. The three reasons are related with 1) the obligatoriness of aspectual prefix, 2) restriction on adverbial modification and 3) the relationship between inflections and word order.

It is well known that past participles in OE were often marked with certain prefixes expressing perfective aspect (cf. Brinton (1988: 202ff), Elenbaas (2007: Ch.4), McFadden (2015), etc), which are listed below.

(8) *a-, be-, for-, forþ-, ful- (full-), ge-, of-, ofer-, to-, þruh-, up-, ut-, ymb-.*
(Brinton (1988: 202-203))

Elenbass (2007: 114) states, "Old English prefixes have a range of meanings, but at the core they share a common semantics. Not only are the meanings of the prefixes

invariably abstract, prefixes typically denote an endstate and express the total affectedness of the object." He also states that the core denotation of the prefixes is a COS meaning (2007: 118). Some of them, such as *be-*, *for-*, *ge-* and *ut-* have transitivizing effects, he notes (2007: 116-118, 158).

Importantly, most of prenominal participles in OE (94%), according to my corpus investigation, were marked with these prefixes in (7b), among which, *a-*, *be-*, *for-* and *ge-* were most frequently used, as shown in Table 4.1 (cf. also Appendix A).

Table 4.1. Distribution of prefixes of prenominal participles in OE[19]

| | | | |
|---|---|---|---|
| Prefixed | *a-* | 62 | 92 (%) |
| | *be-* | 24 | |
| | *for-* | 28 | |
| | *ge-* | 93 | |
| | others | 46 | |
| Non-prefixed | | 21 | 8 (%) |

This suffices to show that to be marked with a prefix was a condition for a verb to derive a participle as a prenominal modifier in OE. As seen in the table, the prefix *ge-* was most frequently used. The same holds true of participles in clausal contexts. McFadden (2015) observes that *ge-* can show up on any form of the verb but it was most frequent with past participles (89%), as shown below.

Table 4.2. Frequency of *ge-*participles, according to verb type

| Form | with *ge-* | without *ge-* | with *ge-* (%) |
|---|---|---|---|
| Present participle | 107 | 1493 | 6.7 |
| *to* infinitive | 430 | 2177 | 16.5 |
| Finite | 23723 | 102434 | 18.8 |
| Bare infinite | 4329 | 11188 | 27.9 |
| Imperative | 2273 | 5468 | 29.4 |
| Past participle | 11505 | 1484 | 89.0 |

(McFadden (2015: 22))

Moreover, the frequency of the prefix increases (99% and 97%) when the participle is used with an auxiliary, as shown below.

Table 4.3. Frequency of *ge*-participles, according to auxiliary

| Form | with *ge*- | without *ge*- | with *ge*- (%) |
|---|---|---|---|
| Participle with *be* | 861 | 10 | 99 |
| Participle with *have* | 125 | 4 | 97 |

(adapted from McFadden (2015: 38))

The data in Tables 4.2 And 4.3 implies that participles with *ge*- in clauses indeed expressed Stative result (his 'resultative' as opposed to his 'perfect') states, as concluded by McFadden (2015: 38). Considering the data in Table 4.1 in parallel with this, it is reasonable to conclude that prenominal participles did express Stative result states in OE. I suggest here that as far as predicative participles such as those in post-auxiliary position are Stative Resultative, prenominal participles are hardly Perfect Resultative in principle, in the sense that Eventive interpretations are more restricted in prenominal attributive position than in predicative position.[20] Recall that Stative Resultative points to the result state while the Perfect Resultative points to the action itself. (cf. Bybee et al. (1994: 64) and the discussion in (1) to (3) in Section 4.1.).

Another fact that supports the claim that prenominal participles were Stative Resultative in OE is that no prenominal participles were attested with adverbs that are often used to modify Eventive participles, according to my corpus investigation. One characteristic of such adverbs is that they contribute an event-related meaning to the participle or its base verb. To illustrate, adverbs such as *recently* and *previously* as well as manner adverbs such as *quickly* and *softly* serve to entail a preceding event

from which the result state comes; they do not modify the result state.

(9) a. recently arrived books, previously discussed topics
b. quickly fallen branches, softly spoken words

The adverbs that were used to modify prenominal participles are mostly degree adverbs or intensifiers (cf. Visser (1963-73: 1232)). Note that degree adverbs, for example, those in (9), do not generally have something to do with a prior event but with the result state of the event or some other kinds of state.

(10) a well established tradition, a badly damaged house, a very respected scholar

Visser (1235-1236) presents a list of prenominal participles modified by a preceding *-ly* adverb. Among the examples, most of which seem to be manner adverbs, the earliest one was attested around 1400: … *with grynly grownden gare*. 'a grimly grown gore'. He also presents a list of the *our dear bought victory* type of prenominal participles, where the word preceding the participle is also an adverb (1233-1234). The earliest one in the list was attested in c1205: *hæheste iborne mon* 'highest-born man'.

All these facts concerning adverbial modification put us in a position to argue that prenominal participles, lacking the Perfect Resultative sense, expressed Stative result states in OE and this is why the adverbial modification was restricted for them to a certain extent.

Still another fact lends support to the claim that prenominal participles were Stative Resultative in OE. Mitchell (1985: §710) writes, "Cargo (1896: 404-406) … gives figures which confirm the reasonable expectation that the object-participle order produces a higher percentage of inflected forms (twenty seven per cent) than

the participle-object order (fifteen per cent)". Although it has been observed that inflected and uninflected participles can be coexistent in the same clause (Mitchell (1985: §711), Traugott (1992: 191)) and has sometimes been asserted that inflection and the function of the participle has nothing to do with each other (Brinton (1994: 140)), the difference in frequency between inflected and uninflected participles with respect to word order itself suffices to indicate that there must have been a certain relationship between inflection and the function and meaning of the participle.[21] This can be illustrated as in (11) and (12).

(11) a. *have*-object-participle: participle inflected mostly
b. *have*-participle-object: participle uninflected mostly

(12) a. America [$_{VP}$ [has [[$_{V}$ found ]] [$_{NP}$ a role]].
b. America [$_{VP}$ [$_{V}$ has][[$_{NP}$ a role] [$_{A}$ found]]]. (Denison (1993: 340))

The data in my investigation, which was obtained from *The York-Toronto-Helsinki Parsed Corpus of Old English Prose* (YCOE), *The Penn-Helsinki Parsed Corpus of Middle English*, Second Edition (PPCME2) and is summarized in Table 4.3, more clearly shows the relationship between the presence/absence of inflections in the participle and word order.[22] As shown in Table 4.4, clauses with the *have*-object-participle order and ones with the *have*-participle-object order both existed in OE, while only the latter did in ME. Importantly, as shown in Table 4.5, participles were inflected *only* in clauses with the *have*-object-participle order in OE.

Table 4.4. Distribution of the *have* periphrasis in OE and ME[23]

| | O1 | O2 | O3 | O4 | M1 | M2 | M3 | M4 |
|---|---|---|---|---|---|---|---|---|
| *Have*-object-participle | 1 | 33 | 68 | 17 | 0 | 0 | 0 | 0 |
| *Have*-participle-object | 0 | 33 | 67 | 14 | 237 | 124 | 784 | 940 |

Table 4.5. Distribution of inflected participles in the *have* periphrasis in OE

| | O1 | O2 | O3 | O4 | M1 | M2 | M3 | M4 |
|---|---|---|---|---|---|---|---|---|
| *Have*-object-participle | 0 | 9 | 24 | 7 | | | | |
| *Have*-participle-object | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

An OE example of inflected participle with the *have*-object-participle order is given in (13); an OE example of uninflected participle with the reverse order is given in (14); and a ME example with the *have*-object-participle order is given in (15). Notably, the examples in (14) and (15), with the participles uninflected, already have the PE order. In contrast, the example in (13) shows that the participle, following the object and being inflected, expresses a Stative result state and can be categorized as an adjective in the traditional sense.[24]

(13) Đu hæfst me nu **manega bysna gereihte**,
You have me now many examples:F.PL.ACC explained:F.PL.ACC
Lit: 'You now have many examples explained to me'
(cosolilo,Solil_3:66.26.926: O2)

(14) Nu hæbbe we **awriten þære Asian suþdæl.**
Now have we written the Asian south (land)
'Now we have figured out the Asian's south land.'
(coorosiu,Or_1:1.11.25.167: O2)

(15) For treuly thou hast **chose the best partye.**
For truly you have chosen the best party
'For you have truly chosen the best party' (CMAELR4,20.568: ME)

Elsness (1997: 261) notes that inflected participles are found more in the *be* periphrasis than in the *have* periphrasis. This is consistent with the data in Table 4.5 in that only the *be* periphrasis and the *have* periphrasis with the *have*-object-participle order allow Stative Resultative readings. Because the participle in them is interpreted

as Stative, they are more adjective-like than those in the *have* periphrasis with the *have*-participle-object order, in which the participle has a stronger verbal sense.

It then follows that inflections of the participles must have been related with their Stative Resultative meaning, the stance taken by many authors including Mitchell (1985: §711), Traugott (1992: 191) and Denison (1993: 341) as opposed to Brinton (1994: 140) and Wischer (2004: 249).

This is further supported by the fact concerning the relationship between inflection and the position of adnominal participles. It is interesting to observe that postnominal participles all have strong endings while prenominal ones have both strong and weak endings, as summarized in Table 4.6. Examples of each pattern are in (16-18).

Table 4.6. Inflection of adnominal participles in OE

| | Strong | Weak |
|---|---|---|
| Prenominal | Yes | Yes |
| Postnominal | Yes | No |

(16) þa cwomon heo to **sumre ceastre gehrorenre** noht feor þonon
then came she to some city fallen:F.PL.DAT not far thence
'Then she came to some fallen cities not long ago'
(cobede,Bede_4:21.320.7.3209: O2)

(17) and he þa forðbrohte **abroðene berian**;
and he then brought-away rotten:M.SG.ACC berry
'and then they brought away the rotten berry'
(coaelhom, ÆHom_3:64.440: O4)

(18) þa **gemyndgedan** cirican
the remembered:M.SG.NOM church
'the remembered church' (cobede,Bede_3:14.204.13.2075: O2)

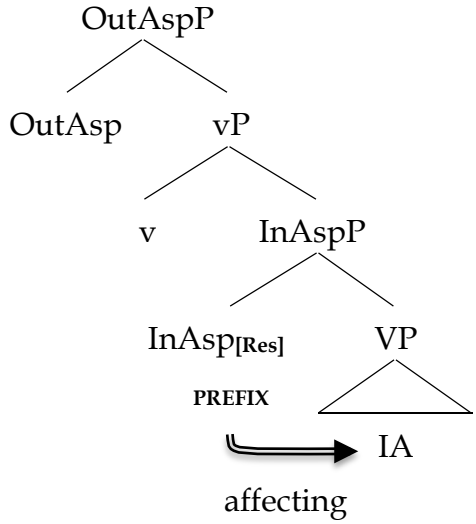
Interesting and importantly, adnominal participles behave alike with adnominal adjectives.[25] Given that the function and meaning of adnominal modifiers are sensitive to their positions, it is not difficult to see that inflections of adnominal participles did have something to do with their functioning as expressing result states.

Given these three lines of reasoning, i.e. each concerning 1) the obligatoriness of aspectual prefix, 2) restriction on adverbial modification and 3) the relationship between inflections and word order, we now conclude that prenominal participles in OE were indeed Stative Resultative.[26] In the following subsections, we will see that prenominal participles as well as post-auxiliary ones came to be unrestricted to Stative Resultative and developed the Perfect Resultative sense after OE.

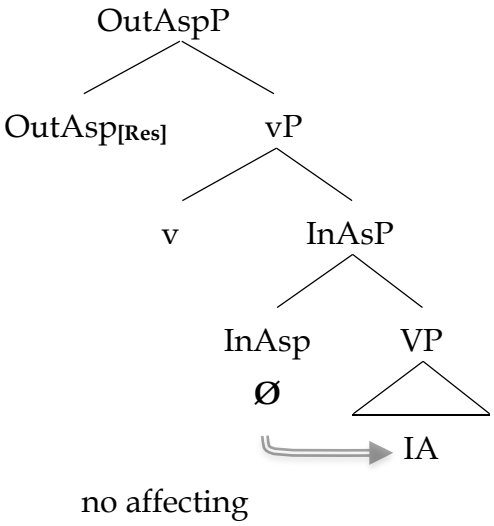
### 4.2.4. The Locus of Stative Resultativity and Perfect Resultativity

In order to clarify how the Perfect Resultative sense was developed, we first need to clarify what the structural difference between Stative Resultative and Perfect Resultative, in addition to the interpretive difference between them, is. This subsection deals with this issue, concentrating on how the two types of resultativity differ with respect to their associated structural positions. I first outline my proposal in (19a, b), which are fuller versions of (1a, b), and then elaborate more on them in what follows.

(19) a. The structure of Stative Resultatives in OE:




b. The structure of Perfect Resultatives in EME onwards:




The structure of Stative Resultative is represented in (19a) and that of Perfect Resultative in (19b). What is novel here is that InAsp is responsible for Stative resultativity and OutAsp for Perfect resultativity. This is supported by the fact discussed in the previous subsection: OE participles were always marked with aspectual prefixes, which were derivational rather than inflectional (cf. Visser (1963-73: 1223), McFadden (2015: 17, 41)). In this sense, the formation of the participles should be like (20a), not like (20b). The prefix is closer to the verb nucleus than the suffix *-en*, which is inflectional in nature.

(20) a. [ *-en* [ *ge-* [ V ]]][27]
b. [ *-ge* [ *-en* [ V ]]]

My proposal is partly inspired by Gelderen (2011), who takes the aspectual prefix *ge-* as located in InAsp, where it affects the internal argument (theme, in Gelderen (2011: 110)).[28] Verbs that affect their internal argument are often those that denote COS (cf. Tenny (1987: 70)). It is thus reasonable to assume that OE aspectual prefixes were in fact lexical realizations of InAsp. It is because they typically denote an endstate and express the total affectedness of the internal argument and assign COS meaning to the verb (Elenbaas (2007: 114)) that the participle is able to express Stative result states.

Note that the present analysis is compatible with the fact that OE participles did not take unergative verbs as their inputs, as discussed by McFadden and Alexiadou (2010: 391, 412) among many others. Unergative verbs were ruled out because they do not generally have an internal argument so that in participial formation, the aspectual prefix has no way to affect an argument (cf. Haspelmath (1994: 159)).[29] Perfect resultativity, on the other hand, is located on OutAsp (cf. Section 2.3.2.).

### 4.2.5. The Locus Shift of Resultativity: Perfect Resultative Derived

Aspectual prefixes, however, were lost in ME and the required resultativity came to have no overt morpheme any more; that is, the Inner aspect head came to be not lexically realized. Here arises another question: How would prenominal participles express the required resultativity now? Before answering this question, it must be noted that the required resultativity of prenominal participles was typically lexically marked by aspectual prefixes.[30] That is to say, there must be something that comes to take over the task from the aspectual prefixes. In other words, the required

resultativity now needs to be marked by some other overt items, whatever they are. The question then turns to be: What can be participle markers now? The answer is: The participle ending *-en* can. We represent this shift as follows.

(21) a. [ *-en* (not marker) [ *ge-* (**marker**) [ V ]]] (OE)

↓

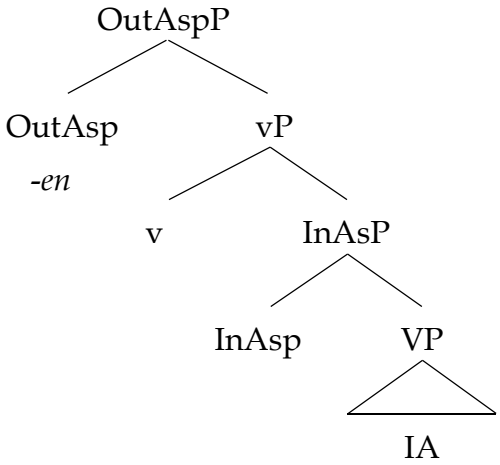
lost

↓

b. [ *-en* (**marker**) [ **Ø** [ V ]]] (EME onwards)

We now need to identify the structural position of this new marker *-en*. McFadden (2015: 40-41) locates this morpheme on an aspect head, $Asp_RP$, which is higher than the initiator phrase *init*P.[31] *Init*P, which is proposed by Ramchand (2008) in his verbal decomposition framework, corresponds to v*P and its notational variants including VoiceP (cf. Kratzer (1996)) and the agentive vP (cf. Embick (2004)). This is to say that McFadden's $Asp_RP$ corresponds to OutAspP in (19a, b). Thus, the morpheme *-en* is located on OutAsp, as shown below.[32]

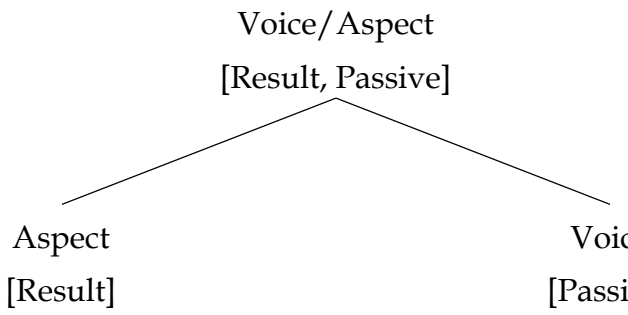
(22) The structural position of *-en*:




This seems plausible at first glance. However, a closer look reveals that the position of the morpheme *-ed* might not be OutAsP because this morpheme can be

the realization of passive participles; that is, it might occupies the Voice head, which is not represented in (13). This seems possible because prenominal participles in OE were typically formed from transitive verbs, as we will see in Section 4.3. In order to identify the precise position of the morpheme, we need to take a broader view. It is not difficult to see that in participles, especially prenominal ones in OE, Voice and Aspect could not be morphologically differentiated. In this respect, Cowper and Hall (2012) claim that in Early English, Voice and Aspect were bundled on a single head and subsequently split into separate projections, as shown below.

Figure 4.1. The separation of Voice and Aspect

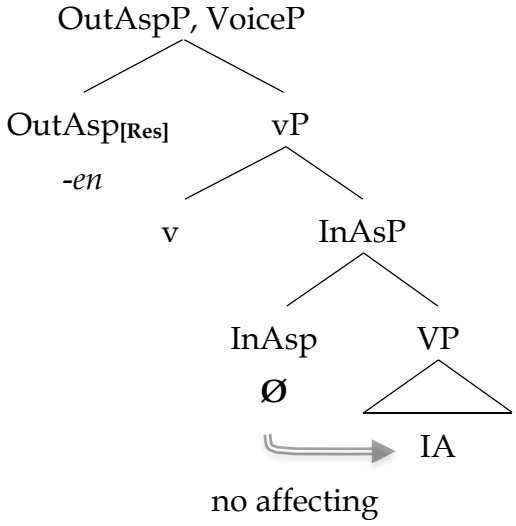



(Cowper and Hall (2012: 131))

We now then assume that the morpheme *-ed* is located on OutAsP, which is responsible for both the result and passive effects. When Voice and Aspect were separated sometime after EME, *-ed* came to occupy Voice in the case of transitive participles and OutAsp in the case of unaccusative and unergative participles.[33]

Returning to our initial question of what took over the task from OE aspectual prefixes, we now conclude that it is the morpheme *-ed*, the lexical realization of OutAsp (and of Voice as well) that took over that task. This amounts to saying that the locus of the required resultativity has shifted from InAsp to OutAsper. We now modify the representation as follows.

(23) The structure of Perfect Resultatives in EME onwards:




As seen in (23), the required resultativity came to be unrestricted to Stative Resultativity. Recall here that InAsp was responsible for Stative Resultativity by virtue of bearing the aspectual prefix. Since aspectual prefixes were lost in EME, nothing can affect the internal argument and assign COS meaning to the base verb of participle; that is, any types of verb in principle can now be available as inputs of the participle. On the other hand, OutAsp, which was inert in OE, became active and open to the required resultativity after OE.[34] As far as this happened, the Perfect Resultative sense must have come to be available because outer aspect, unlike inner aspect, is a grammatical functional category rather than a lexical one.

### 4.2.6. A Consequence: The Emergence of Eventive Participles

This shift has an important consequence. It opened up the possibility that more dynamic meanings such as Experiential perfect in addition to Perfect of result, Perfective Resultativity here, become possible in prenominal participles. In particular, Eventive participles became available due to this locus shift of resultativity. This subsection discusses how this shift leads to the various types of Eventive participles in PE as discussed in Section 2.2.4.

In Section 2.2.4, we discussed three types of Eventives, as listed below.

(24) a. Experiential: *the recently opened door*, *previously mentioned topics*
b. Habitual: *frequently asked questions*, *the most often cited reason*
c. Event-in-progress: *tortured people*, *operated-on people*

As discussed earlier in Section 2.2.4, these types of participle differ from Lexical Resultative participles, Stative Resultative participles in this chapter, in that they do not express result states. Note that they have a common characteristic: They are all related with grammatical, not lexical, aspect. They, on the other hand, differ from each other with respect to (im)perfectivity. Experiential Perfect is perfective while the other two are imperfective. I suggest that all these three are associated with the same head, OutAsp.[35]

As regards how to formerly identify them as associated with OutAsp, adverbial modification is arguably the most effective diagnostic and the most important clue to clarifying when they became available or more salient in the history of English. As discussed in the preceding subsection, there was restriction on adverbial modification; basically, only degree adverbs and intensifiers were able to modify prenominal participles in OE. The same is true of prenominal adjectives, as noted by Fischer (2001). This amounts to saying that the expansion of adverb types may have been in parallel with that of verb types in prenominal participles. This is already clear from Visser's (1963-73: 1234-1237) data, as also noted in the previous subsection. Visser shows that the occurrence of the most canonical types of adverbs and prenominal participles in PE is not found until EME.[36]

Thus, the emergence of Eventive participles is a later development in the history of prenominal participles. This is consistent with the observations in the literature

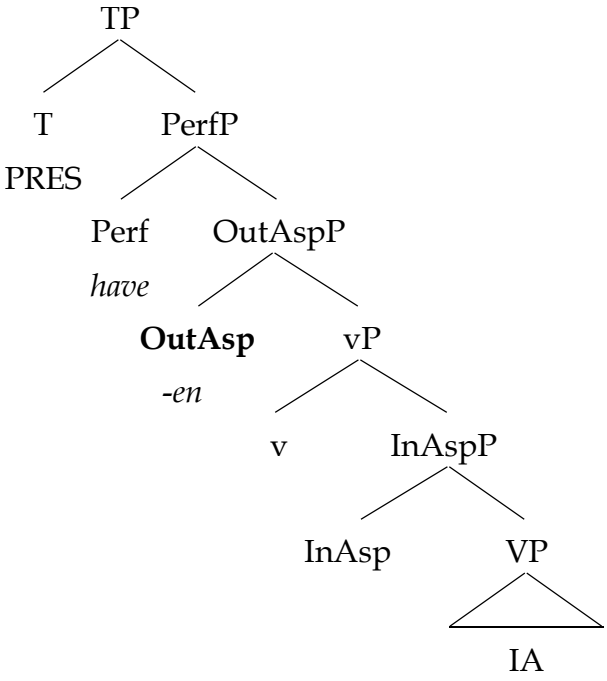
that the additional meanings such as Existential Perfect and Universal Perfect of post-auxiliary participles followed the development of the Perfect of result (Perfect Resultative, here) meaning, which took place throughout LME and EME. The story of this aspect change in the history of prenominal participles, however, is not over yet. It led to another two important consequences, an issue to discuss in detail in Sections 4.3 and 4.4.

### 4.2.7. Conclusion

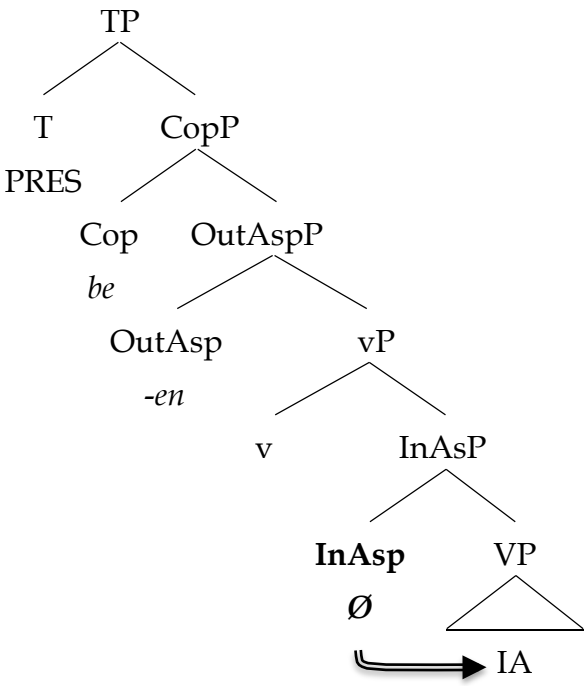
So far, we have seen that an aspectual change took place in the formation of prenominal participles in the history of English. To sum up this section, Prenominal participles were Stative Resultative in OE and Perfect Resultative in EME onwards. The locus of resultativity has shifted from InAsp to OutAsp due to the loss of aspectual prefixes in ME. In particular, it shifted in the need of marking the required resultativity. Since OutAsp became active, it brought about the Perfect Resultative sense as well as other dynamic/Eventive meanings. On the other hand, Stative Resultative has not die out since English has had verbs inherently affecting the internal argument without any morphemes.[37] Such verbs generally lexically encode COS meanings. Interestingly, throughout ME and EModE, a large number of ergative verbs, which typically have COS meanings, emerged, as we will see in Section 4.4.4.2.

One final thing to mention is that the locus shift of resultativity also holds true of post-auxiliary participles and the proposed analysis compensates for the weakness of McFadden and Alexiadou's (2006, 2010) analysis. Tying the structures in (19a, b) together with the structures of the *have* periphrasis and *be* periphrasis proposed by them, we can get (25) below.[38]

(25) a. The structure of the *have* periphrasis:




b. The structure of the *be* periphrasis:




PerfP and CopP are projected above OutAspP in (25a, b), respectively. For the *have* periphrasis, (25a) is basically the same as their original proposal in (6). What is novel here is the locus of Stative resultativity is InAsp, rather than OutAspP as in (7).

With the locus of Stative Resultativity in InAsp, (25b) successfully captures the fact that only COS verbs are allowed in the *be* periphrasis. It must be noted here that the structure in (25b) has survived into PE; it has not died out because of the loss of aspectual prefixes in EME. This is because, as already noted earlier in will be discussed in Section 4.3.4.2, there was emergence of a large number of ergative verbs, which are mostly COS verbs, throughout ME and EModE, which was almost immediately after the loss of the aspectual prefixes in EME. Also noteworthy is that it is the loss of the aspectual prefixes that triggered the rise of the Perfect Resultative structure, in particular the domain of AspP, in (25a).

## 4.3. The Emergence of Unaccusative Participles

### 4.3.1. Introduction

Unaccusative participles as well as transitive ones can be used as prenominal modifiers in PE, as we saw in Section 4.3.3. Some examples are given in (26) and (27).

(26) a. elapsed time
b. a fallen leaf
c. a risen Christ (Bresnan (1982: 30))

(27) a. a recently given talk
b. hard-fought battles
c. my broken heart (Bresnan (1982: 22))

In Early English, however, while transitive participles have been available since OE, unaccusative participles were not until EModE, as shown in the survey conducted in what follows. This diachronic asymmetry between the two has not been reported in the literature.

This section aims to provide an empirical investigation on the distribution of unaccusative participles in the history of English and to account for their emergence in EModE in terms of the aspectual change. This section is organized as follows. Section 4.3.2 presents a classification of unaccusative verbs with respect to their formation of prenominal participles and briefly discusses the argument structure of unaccusative verbs. Section 4.3.3 investigates the distribution of unaccusative participles in the history of English by conducting a survey of historical corpora and *OED*, as well as by examining the historical data in Visser (1963-73). Section 4.3.4 provides an analysis of their emergence in EModE, relating it to the emergence of ergative verbs and presenting it as a consequence of the aspectual change. Section 4.3.5 concludes this section.

### 4.3.2. Identification of Unaccusative Verbs and Their Argument Structure

Let us begin by asking what kinds of verb count as unaccusative verbs.[39] This section follows the classification proposed by Levin and Rappaport (1995), who claim that unaccusativity is syntactically represented but semantically determined. As shown in Table 4.7, which briefly summarizes their discussion of semantic properties of unaccusative verbs, whether a given verb counts as an unaccusative verb depends largely on the (non)agentivity involved in the eventuality described by the verb, regardless of the value of causality.

Table 4.7. Semantic properties of unaccusative verbs

| | Types | Members | Causality | Agentivity | Relevant sections in L & R |
|---|---|---|---|---|---|
| 1 | Appearance: | *appear, arise, emerge, …* | neither | nonagentive | §3.3.1, §3.3.2 |
| 2 | Disappearance: | *disappear, vanish, …* | neither | nonagentive | §3.3.1, §3.3.2 |
| 3 | Inherently directed motion: | *arrive, come, fall, …* | neither | nonagentive | §4.1.2, §4.2.2 |
| 4 | Existence: | *exist, live, remain, …* | neither | (non)agentive | §3.3.1, §4.1.3 |
| 5 | Simple position: | *hang, lay, stand, …* | neither | (non)agentive | §3.3.3, §4.1.3 |
| 6 | Entity-specific change of state: | *bloom, blossom, flower, …* | internally caused | nonagentive | §3.2.1, §4.2.1 |
| 7 | Change of state: | *bake, break, close, …* | externally caused | nonagentive | §3.2.1, §6.4.1 |
| 8 | Undirected motion: | *bounce, move, roll, …* | externally caused | nonagentive | §3.2.1, §4.1.4 |

(Based on Levin and Rappaport (1995))

Note that not all types of unaccusative verb form a prenominal participle. In particular, participles of unaccusative verbs that describe the existence of an entity fail to premodify a noun (cf. **an existed solution* (Levin (1993: 250))). In Table 4.1, verbs of existence in row 4, as well as simple position verbs in row 5, which also describe the existence of an entity at a particular location, belong to such types of verb.

As is well-known, externally caused verbs including COS verbs in row 7 and verbs of undirected motion in row 8 all participate in causative alternation. Prenominal participles of these verbs, therefore, give rise to ambiguity as regards whether the noun modified is associated with the surface subject or with the object (e.g., *a melted cheese*: 'The cheese melted.' *vs*. 'I melted the cheese.'). Only in the

former reading is the verb unaccusative; the latter reading is associated with the transitive variant. So, in order to eliminate this sort of ambiguity, this section does not investigate such verbs as target verbs that could derive unaccusative participles.

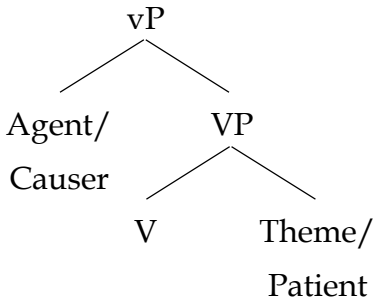
Moreover, participles of entity-specific COS verbs in row 6 are also ambiguous as regards how they are formed. For example, the word *blossom* has both the verb-based participle as in *a newly blossomed rose* and the noun-based one as in *the white-blossomed magnolias*.[41] Because a noun-based participle has no unaccusative base and cannot be morphologically distinguished from a verb-based one, entity-specific COS verbs are excluded from the discussion in this section.

Thus, unambiguous cases of unaccusative participle are restricted to participles based on the remaining three types of verb in rows 1-3, namely, verbs of appearance, verbs of disappearance and verbs of inherently directed motion, which share a common characteristic: they are nonagentive, on the one hand, and neither internally nor externally caused, on the other hand.[40] It is such unambiguous unaccusative participles that are the target participles in the investigation in this section.[42] In the remainder of this section, the label "unaccusative" is used to refer to only these three types of verb and "unaccusative participle" is used to refer to the participle based on them.

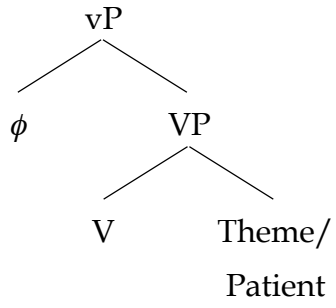
In what follows, let us discuss briefly the argument structure of unaccusative verbs in parallel with that of transitive verbs. Their underlying structures are represented in (3a, b), respectively.

(28) Transitive verbs (*write*, *send*, …): Unaccusative verbs (*arrive*, *fall*, …):

a.




b.




In (28a), the transitive verb has both an external and internal argument, where the former is assigned an agent/causer role and the latter a theme/patient role. In (28b), on the other hand, the unaccusative verb has a single argument that is assigned a theme/patient role, which is merged as its internal argument.

Note here that given IAC (cf. Section 2.4.1.), both transitive and unaccusative verbs can participate in the formation of prenominal participles, which modify the theme/patient argument.

### 4.3.3. Historical Data

This section first examines Visser's (1963-73) data of prenominal participles of intransitive verbs as a clue to clarifying when unaccusative participles emerged in the history of English. The result of the survey on the distribution of unaccusative participles are shown in Section 4.2.3.2. It was conducted by employing the following historical corpora: *The York-Toronto-Helsinki Parsed Corpus of Old English Prose* (YCOE), *The Penn-Helsinki Parsed Corpus of Middle English*, Second Edition (PPCME2), *The Penn-Helsinki Parsed Corpus of Early Modern English* (PPCEME) and *The Penn Parsed Corpus of Modern British English* (PPCMBE). The result of this survey is confirmed by the investigation based on *OED*.

#### 4.3.3.1. Examination of Visser (1963-73)

Visser (1963-73: 1227) reports that prenominal participles of intransitive verbs are not numerous in OE, providing the six examples in (29).[43] At first glance, these participles look like unaccusative participles. A closer look at them, however, reveals that they do not qualify unaccusative participles. Their PE translation and the semantic properties of the verbs involved are given in (30).

(29) ***asprungen***: Ancient Laws (Thorpe) ii, 160, 24, Is þeaw þæt *asprungenra manna* lic …man byreð on cricean.
***drunken***: c1386 Chaucer Knt.'s T. 403 We faren as he þat dronke is as a Mous. A *dronke man* woot wel þat he hath an hous.
***geblowen***: Andreas 1451, Geseh he *geblowene bearwas* standan, blædum gehrodene.
***gefaren***: Ælfred C.P.43, 15, þam *gefarenen breðer* þe ðæt wif ær ahte.
***gefeallen***: Paris Ps. (Thorpe) 148, 8, Fyr, forst, heȝel and *ȝefeallen snaw*.
***forsineged***: Trin. Hom, (Morris, O. E. Hom. ii) 61, þo *forsinegede men*, þe habbeð þo sinnes don þe biliggeð to here shrift.

(30) ***asprungen***: *asprungenra manna* 'grown man' <<change of state>>
***drunken***: *dronke man* 'drunken man' <<object unspecified>>
***geblowen***: *geblowene bearwas* 'blossomed grove'<<entity-specific change of state>>
***gefaren***: *gefarenen breðer* 'dead brother' <<disappearance>>
***gefeallen***: *ȝefeallen snaw* 'fallen snow' <<inherently directed motion>>
***forsineged***: *forsinegede men* 'sinful men' <<object unspecified>>

First, *drunken* and *forsineged* are unlikely to be unaccusative participles in that their base verbs are transitive verbs with the object unspecified.[44] Nor do *asprungen* and *geblowen*, based on COS verbs, qualify as unaccusative participles (cf. Section 4.2.2). The remaining two participles, *gefaren* and *gefeallen*, are hardly treated as wanted type of unaccusative participles, either, for the reason that they are marked with the aspectual prefix *ge-*, which is one of aspectual prefixes, listed in (31).

(31) *a-, be-, for-, forþ-, ful- (full-), ge-, of-, ofer-, to-, þruh-, up-, ut-, ymb-.*

(Brinton (1988: 202-203))

These prefixes were attached to a verb to perfectivize and trasitivize it and highlight the resultant state denoted by the verb (Brinton (1988: 202ff) and Elenbaas (2007: 116ff)). Visser (1963-73: 2041) is aware that whether or not some prefixed verbs such as *gefeallan* may be called intransitive is occasionally hard to determine, implying that it could be a transitive by virtue of bearing the transitivizing prefix *ge-*. As for *gefaren*, its base verb *faren* is often translated as 'go' and the participle itself may well be read as 'gone' or 'dead'. Note that *gone* has been special throughput the entire history of English and even in PE, *is/was gone* is fully acceptable (cf. Visser (1963-73: 2061)).

It is then likely that in *gefaren* and *gefeallen*, it is the prefix that enables them to premodify nouns. That is to say, it is because of the prefix, not because of the lexical semantics of the base verbs that serves to express the required Stative Resultativity.[45] Given this, these two participles are not treated as unaccusative participles as needed, though, admittedly, their base verbs do seem to be unaccusative verbs. Note that the goal of the investigation in this section is to find out the participles of unaccusative verbs whose inherent lexical semantics serves to form prenominal participles. If such participles as these two under discussion are included in the target list of our investigation, we must evidence that these participles function as prenominal modifiers independently from the aspectual prefix attached to them. However, it is hardly to treat the prefix as not functioning in prenominal participial formation given that the majority of prenominal participles in OE are marked with such prefixes, as noted earlier.[46]

Visser (1963-73: 1228-1231) also provides a number of examples of intransitive

participles premodifyng nouns from ME, which are given in (32), with their PE translation and the semantic properties of the verbs involved in (33).

(32) **Fained**: c1386 Chaucer, C, T. B 2208, Hise feyned freendes …

**Fordrunken**: c1205 Layamon 13517, Þa iseoȝen Þa Peohtes for-drunkene cnihtes.

**Forsworn**: c1300 Amis & Amiloun 1102, Forsworn man schal neuer spele.

**Knowen**: c1449 Pecock, Repressor 53, 22, … the heerer wole aske thus: "Is he a knowun man" as thouȝ …

**Mislived**: c1374 Chaucer, Troil IV, 330, O olde, unholsom, and mislived man.

**Rotten**: c1386 Chaucer C.T. B 4406, wel bet is roten appul out of hoord,…

**Shrunken**: c1400 Ragman Roll ix. in Wright Anecd. Lit. 84 Your shrunkyn lyppis and your gowuldyn tethe.

**Sunken**: 1375 Barbour Bruce iii. 417 Iamys of Dowglas..Fand a litill sonkyn bate.

**Thriven**: 13.. E.E. Allit. P. B. 298 Hym watz þe nome Noe,..He had þre þryuen sunez.

**Travelled**: 1413 Pilgr. Sowle (Caxton 1483) iv. xxxiii. 81 Auncyen trauayled men that ben experte in dedes of armes.

**Waxen**: c1250 Gen. & Ex. 2060, Ic stod at a win-tre ðat hadde waxen buges ðre.

**Withered**: c1470 Henry, Wallace VIII, 1037, That awld bulwerk I se off wydderyt ayk.

(33) **Fained**: feyned freendes 'delighted friends' <<change of state>>

**Forsworn**: Forsworn man 'man who has taken an oath' <<object unspecified>>

**Fordrunken**: for-drunkene cnihtes 'drunken knight' <<object unspecified>>

**Knowen**: knowun man 'man who has knowledge' <<object unspecified>>

**Mislived**: mislived man 'man who lives an evil life' <<unergative-based but obsolete now>>

**Rotten:** roten appul 'rotten apple' <<change of state>>

**Shrunken:** shrunkyn lyppis 'shrunken lips' <<change of state>>

**Sunken:** sonkyn bate 'sunken boat' <<change of state>>
**Thriven:** þryuen sunez 'grown sons' <<change of state>>
**Travelled:** trauayled men 'travelled men' <<unergative-based>>
**Waxen**: waxen buges 'bugs that have fully grown' <<change of state>>
**Withered**: wydderyt ayk 'withered oak' <<change of state>>

Among these participles, those which are based on COS verbs do not qualify as unaccusative participles, for the same reason as mentioned above. Moreover, the base verbs of *for-drunkene*, *forsworn* and *knowun* are clearly not unaccusative verbs but transitive verbs with the object unspecified. The remaining *mislived* and *travelled* are unergative-based and so do not qualify as unaccusative participles as needed.[47]

Turning to the data of prenominal intransitive participles after ModE provided by Visser (1963-73), 38 out of the 49 participles qualify as unaccusative participles, judging from the semantic properties of their base verbs. The list in (34) shows the relevant participles with the years of the first attested examples in parentheses.

(34) advanced (1855), arrived (1896), ascended (1861), capsized (1882), collapsed (1610), come over (1534), deceased (1586), departed (1599), elapsed (1644), entered (1606), escaped (1933), expired (1647), failed (1655), forgone (1656), gone (1598), happened (1610), lain (c1522), perched (1883), pretended (1727), progressed (1850), prospered (1661), recurred (1898), relapsed (1570), retired (c1648-50), returned (1908), revolved (1593), risen (1821), scampered (1906), shotten (1532-3), strayed (1529), tippled (1660), toppled (1871), tottered (1570), transfused (1652), transmigrated (1682), transpired (1652), transuded (1827), vanished (1593) (Visser (1963-73: 1228-1231))

#### 4.3.3.2. Data Based on Historical Corpora

Based on YCOE, PPCME2, PPCEME and PPCMBE, I have investigated the distribution of transitive and unaccusative prenominal participles in the history of

English by checking the first occurrence of the prenominal participle of each transitive/intransitive verb. The result is summarized in Tables 4.8 and 4.9. While transitive participles have been attested since OE, examples of prenominal intransitive participles began to be found in EModE and all of them involve unaccusative participles. Some examples of unaccusative participle are given in (35).

Table 4.8. Distribution of first occurrences of transitive participles

| Period | OE | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Token | 1561 | 172 | 88 | 406 | 403 | 224 | 373 | 405 | 347 | 441 | 412 |
| Type | 274 | 96 | 15 | 75 | 39 | 78 | 114 | 141 | 111 | 120 | 112 |

Table 4.9. Distribution of first occurrences of intransitive participles

| Period | OE | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Token | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 13 | 5 | 18 | 8 |
| Type | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 1 | 4 | 0 |

(35) a. I have delivered and payd to his hands for this last ***past Martynmas*** rent v=li=,
(EPOOLE-E1-P2,163.7)

b. that will not suffer The Bodyes of their poore *departed Debtors* To goe … (MIDDLET-E2-H,21.520)

c. That the right and title of Lady Elizabeth, sister to the *deceased Queene*, and .. (HAYWARD-E2-H,3.5)

Notably, this result is consistent with the examination of Visser's (1963-73) data in the previous subsection, thereby confirming the emergence of unaccusative participles in EModE.

#### 4.3.3.3. Data Based on *OED*

I have also investigated the distribution of unaccusative participles by utilizing the quotation search function of *OED*. The methodology adopted here is to list out

the years in which the first occurrences of unaccusative verbs and their prenominal participles were attested. Table 4.10 summarizes the result of this investigation; the list of unaccusative verbs is based on that of verbs of appearance, verbs of disappearance and inherently directed motion given in Levin and Rappaport (1995: 281-282).

Table 4.10. First occurrences of unaccusative verbs and their prenominal participles[48, 49]

| | Year of base verb | Year of participle | | Year of base verb | Year of participle | | Year of base verb | Year of participle |
|---|---|---|---|---|---|---|---|---|
| *[advance]* | 1509 | [1795] | *[rise]* | c1200 | [1821] | *exude* | 1574 | |
| *[arrive]* | 1297 | [1896] | *spread* | a1300 | c1511 | *gush* | a1400 | |
| *[ascend]* | 1382 | [1861] | *surge* | 1511 | 1635 | *happen* | c1375 | |
| *burst* | 1297 | 1812 | *tumble* | a1300 | 1649 | *issue* | c1330 | |
| *come* | c825 | 1562 | *appear* | 1375 | | *leave* | a1225 | |
| *down* | 1499 | 1818 | *arise* | c1000 | | *materialize* | 1880 | |
| *[depart]* | c1290 | [1599] | *awake* | c1000 | | *occur* | 1538 | |
| *disappear* | 1530 | 1857 | *awaken* | c885 | | *perish* | c1250 | |
| *emanate* | 1756 | 1874 | *coexist* | 1677 | | *plop* | 1821 | |
| *[enter]* | c1300 | 1796 | *derive* | 1662 | | *plunge* | c1380 | |
| *[expire]* | 1455 | [1647] | *descend* | a1325 | | *recede* | 1480 | |
| *fall* | c890 | 1776 | *die* | c1135 | | *result* | 1432 | |
| *flee* | c825 | 1621 | *emerge* | 1667 | | *stem* | 1577 | |
| *flow* | a1000 | 1626 | *ensue* | c1500 | | *stream* | a1225 | |
| *[go]* | c825 | [1598] | *erupt* | 1657 | | *supervene* | 1647 | |
| *lapse* | 1641 | 1667 | *escape* | 1292 | | *transpire* | 1597 | |
| *[recur]* | 1468 | [1897] | *eventuate* | 1789 | | *vanish* | 1303 | |
| *[return]* | a1366 | 1600 | *exit* | 1607 | | *wax* | c897 | |

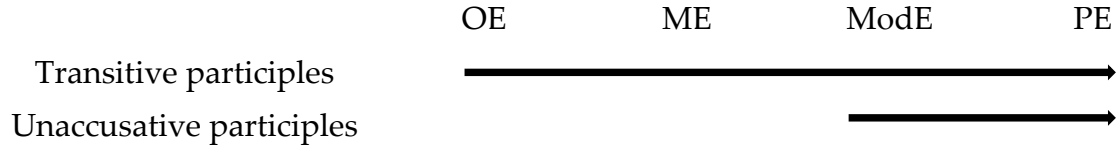
This table shows that 22 out of the 54 verbs have prenominal participles. It is important to note that none of these participles was found until the 16th century,

which coincides with the conclusion reached in the preceding two subsections. Some examples are given below.

(36) a. 1896 Godey's Mag. Feb. 133/2 On the outskirts of the Monceau quarter, which is peopled with *'arrived' artists*.
b. 1796 Coleridge Ode Departing Year i, Ere yet the *entered cloud* foreclosed my sight.
c. 1599 B. Jonson Ev. Man out of Hum. v. iv, Shedding funereal tears over his *departed dog*. (*OED*)

In closing this section, the historical development of prenominal participles is summarized in the figure below. It is observed that while transitive participles have existed throughout the history of English, unaccusative participles were not attested until EModE.[50]

Figure 4.2. Historical status of transitive and unaccusative participles




### 4.3.4. Analysis

Having revealed the distribution of unaccusative participles in the history of English, this section provides an analysis of how they emerged in EModE. Section 4.3.4.1 proposes that the licensing condition AC was still independently at work in ME, due to which unaccusative participles were not available until EModE. Section 4.3.4.2 proposes that a reanalysis of ergative participles led to the emergence of unaccusative participles. Section 4.3.4.3 discuss the emergence of ergative verbs anf their participles.

#### 4.3.4.1. The Unavailability of Unaccusative Participles due to Affectedness Condition

This section clarifies why unaccusative participles were unavailable as prenominal modifiers until EModE. Let us first briefly review the condition on prenominal participials in OE and ME. When we take a closer look at the transition from OE to ME, we can see that the same condition was at work in these two periods. First recall that OE prenominal participles were marked with the aspectual prefixes, which affect their argument.

As discussed in Section 4.2, only participles of verbs bearing an ability of affecting their argument - call them 'affectedness verbs' - can have function as prenominal modifiers. This allows us to assume that the Affectedness Condition (AC) as discussed in Section 2.4.2 was at work in prenominal participial formation in OE.

(37) Affectedness Condition:
The base verb must be an affectedness verb (in OE).

Here we need to clarify the very property of affectedness verb. Tenny (1987: 79) gives the following definition.

(38) A verb is an affectedness verb iff it describes an event that can be delimited by the direct argument of the verb. (Tenny (1987: 79))

It is not difficult to see here to say that a verb has a COS meaning is, to some extent, to say that the verb describe an event can be delimited by its internal argument (direct argument, in Tenny's words). Indeed, as observed by Tenny, affectedness verb class includes verbs with various types of COS meaning.

What is interesting is that unaccusative verbs as discussed in this section are not included in the affectedness verb class provided by Tenny's (1987: 106). Recall that

unaccusative verbs we are concerned with in this section include: 1) verbs of appearance such as *appear, arise, emerge, …*, 2) verbs of disappearance such as *disappear, vanish, …* and 3) verbs of inherently directed motion such as *arrive, come, fall, …* (cf. Table 4.7). Interestingly, the internal argument of these types of unaccusative verb generally does not delimit the event described by them.[51] It is then follows that because unaccusative verbs are not affectedness verbs, they do not satisfy AC in (37). Because AC was still at work even after the loss of aspectual prefixes in EME, it is reasonable to argue that non-affectedness verbs including unaccusative verbs were not able to drive participles as prenominal modifiers in that period.

Note here that AC was open for only affectedness verbs including COS verbs and others. Most, if not all, of affectedness verbs in PE are transitive verbs (Tenny (1987: 70ff, 106)). As for verbs in OE, the aspectual prefixes functioned as affecting and transitivizing verbs (cf. Elenbass (2007: 114, 116-118, 158)), and so the participles of prefixed verbs could premodify nouns. After the loss of the prefixes in EME, participles of affectedness verbs, inherently encoding COS meanings, were still able to premodify nouns under AC, yielding Stative result meanings via inner aspect, which has continuously been active. Participles of non-affectedness verbs such as unergative intransitive verbs like *work* and accusative verbs like *arrive* began to appear in the *have* periphrasis in EME (cf. Visser (1963-1973: 2191), McFadden and Alexiadou (2010: 392)). However, participles of unergative verbs like *worked* and accusative verbs like *arrived* were not available in prenominal position in the same period. This is because AC was still at work in ME. On the other hand, participles of transitive verbs, not restricted to affectedness verbs such as COS verbs but including

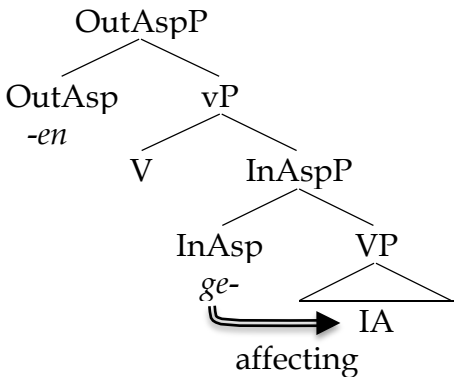
them, began to produce Perfect Resultative meanings (cf. *the recently damaged car*) via outer aspect, which has been activated due to the locus shift of resultativity.[52]

To sum up, unaccusative participles were not available until EModE due to AC. In the following subsection, we discuss how they became available as prenominal modifiers in EModE.

#### 4.3.4.2. The Emergence of Unaccusative Participles due to Reanalysis of Ergative Participles

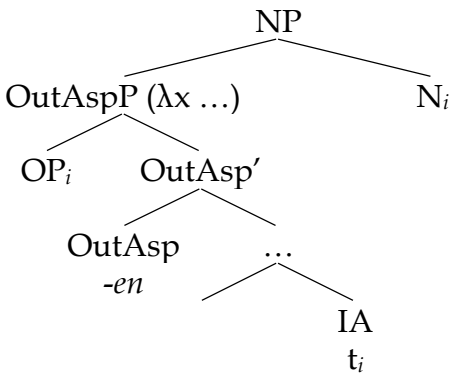
First note that, in some sense, AC is a lexical constraint on the formation of prenominal participles. Let me repeat the structure appealing to affectedness in (19b) as (39a) below.[53]

(39) a. The structure of the participle:




(cf. Section 4.2.)

b. The structure of the entire NP:




(based on Bruening (2014))

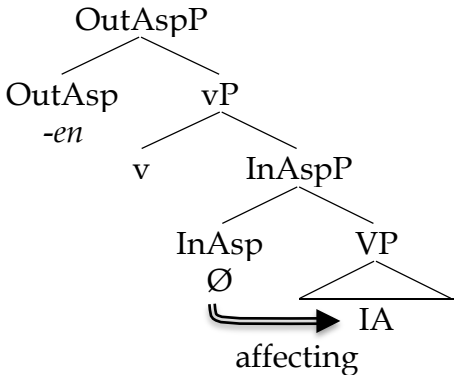
In (39a), the prefix affects the internal argument and so renders it available to be modified by the participle. The aspectual prefixes were lost in ME, however. After the loss of the prefixes, the locus shift of resultativity took place and outer aspect became active. This, however, did not render inner aspect inert, as noted earlier.

Recall that InAsp has continuously been responsible for Stative resultativity, as indicated by the examples below.

(40) a. The lake is frozen; The ice cream is melted.
b. the frozen lake, the melted ice cream (cf. Grimshaw (1990: 182, fn.14))

This is because unprefixed verbs inherently encoding a COS meaning such as *freeze* and *melt* can also affect their internal argument (cf. Tenny (1987: 70, 101)). Noteworthy here is the fact that ergative verbs are mostly fall under this type of verbs with a COS meaning. This leads us to assume that participles of ergative verbs were able to function as prenominal modifiers in ME. With this assumption, we represent the structure of ergative-based participles as follows.

(41) The structure of ergative-based participles (after OE):

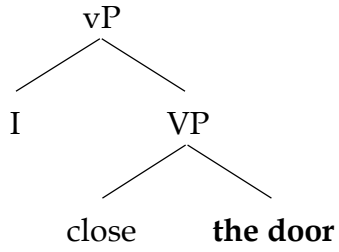



In (41), the prefix has disappeared from InAsp, but an inherent COS meaning is still possible there and so the internal argument, IA of ergative verbs can still be affected. Now the question, which is our primary concern in this section, comes to us: How the structure in (41) is related with the emergence of unaccusative participles? We find out the answer to this question in what follows.

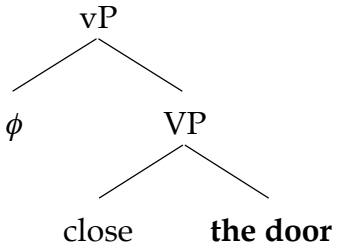
We first focus ourselves on ergative verbs, whose participles have the structure in (40) above. One characteristic of ergative verbs deserves special attention here: They

have both causative transitive and unaccusative intransitive variants. Their argument structure is then relevant here. The structure of the causative transitive variant is represented in (42a) and that of the unaccusative intransitive variant in (42b).

(42) a. The transitive variant:
(cf. *I closed the door.*)

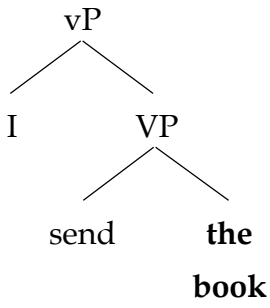



b. The intransitive variant:
(cf. *The door closed.*)

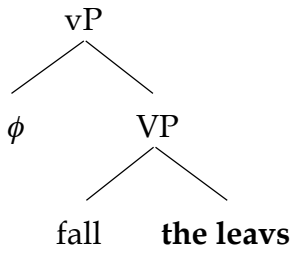



Crucially, the structure of the intransitive variant is the same as that of unaccusative verbs, following the standard assumption that the surface subject of unaccusative verbs originates as the internal argument, as shown in (43b).[54]

(43) a. Transitive verbs:
(cf. *I sent the book.*)




b. The intransitive variant:
(cf. *The leaves fell.*)




It is now not difficult to see that the structural parallelism between the transitive variant of ergative verbs and unaccusative verbs connects the participial structure in (41) with unaccusative participles. This leads us to expect that ergative verbs served as a trigger for the emergence of unaccusative participles. Let me elaborate on this in what follows.

Note that prenominal participles based on ergative verbs have two possible sources, namely (42a, b), which in turn means that once the participle of a given ergative verb is established as a prenominal modifier, its derivation is ambiguous between (42a) and (42b); it is interpreted as derived either from (41a) or from (41b). This ambiguity opens up the possibility that the participle could be interpreted as derived from the latter, (42b), and this indeed happened. The conjecture here is that language learners in the relevant period would reanalyze a prenominal participle, which was formerly derived from one of the two sources, say, the transitive variant, as the one derived from the intransitive variant of the same verb, as shown below.

(44) a. the closed door: interpreted as 'Somebody closed the door.' (cf. (42a)).
b. the closed door: interpreted as 'The door$_i$ closed $t_i$.' (cf. (42b)).

This reanalysis from (44a) to (44b) easily occurs if the child is provided enough data to stimulate it. It is reasonable to assume here that the emergence of a large number of ergative verbs was in fact available as such data. The crucial step now is to show that there indeed was emergence of a large number of ergative verbs before the emergence of unaccusative participles and triggered the reanalysis. We discuss the emergence of ergative verbs in the following subsection.

#### 4.3.4.3. The Emergence of Ergative Verbs and Their Participles

First, it is necessary to make a list of the years in which the first occurrences of ergative verbs and their prenominal participles were attested, just as we did for unaccusative verbs in Table 4.10. Among the list of 322 ergative verbs in Wikitionary, the top 50 verbs by frequency in Corpus of Contemporary American English (COCA) were chosen as the target of the investigation based on *OED*. Table 4.11 summarizes the result of this investigation.

Table 4.11. First occurrences of ergative verbs and their prenominal participles[55]

| Base verb | Year of intransitive | Year of transitive | Year of participle | Base verb | Year of intransitive | Year of transitive | Year of participle |
|---|---|---|---|---|---|---|---|
| *bake* | 1605 | c1000 | 1620 | *land* | 1382 | a1300 | 1835 |
| *bend* | 1398 | c1320 | 1599 | *lower* | 1606 | 1659 | 1707 |
| *break* | a1000 | 851 | 737 | *mix* | 1632 | 1480 | 1557 |
| *burn* | c1000 | c1200 | 1340 | *move* | c1250 | 1382 | 1592 |
| *change* | c1275 | c1230 | 1580 | *raise* | 1470 | a1220 | c1550 |
| *clear* | 1627 | 1590 | a1711 | *rest* | c950 | c1205 | a1586 |
| *close* | c1385 | c1250 | 1382 | *roll* | 1390 | c1375 | 1467 |
| *combine* | 1712 | c1440 | 1603 | *separate* | 1684 | 1432 | 1535 |
| *connect* | 1744 | 1691 | 1789 | *shake* | c950 | a1000 | 1523 |
| *cook* | 1857 | 1611 | 1855 | *shift* | 1605 | c1000 | 1595 |
| *crack* | c1000 | c1300 | c1440 | *shut* | 1470 | c1000 | 1474 |
| *develop* | 1843 | 1592 | 1859 | *sink* | c975 | a1300 | 1375 |
| *drive* | c900 | a1067 | 1641 | *slide* | a950 | c1537 | 1599 |
| *drop* | c1000 | a1340 | 1600 | *split* | 1590 | 1590 | 1648 |
| *dry* | c1200 | c888 | a1340 | *start* | a1000 | 1440 | c1611 |
| *end* | a1000 | c975 | 1598 | *stir* | a1000 | a1023 | 1577 |
| *expand* | 1807 | 1432 | 1667 | *stop* | 1375 | 1530 | 1578 |
| *fill* | c1330 | 1605 | 1769 | *stretch* | 1485 | a1000 | 1518 |
| *float* | a1100 | 1649 | 1735 | *tear* | 1526 | c1000 | 1362 |
| *fry* | a1000 | 1607 | 1608 | *tire* | c725 | a1000 | 1581 |
| *freeze* | 971 | 1494 | 1375 | *wake* | c1250 | c1400 | 1649 |
| *gather* | a891 | c725 | 1388 | *back* | 1486 | 1578 | |
| *grow* | c725 | 1774 | 1340 | *decrease* | 1393 | c1470 | |
| *improve* | 1650 | 1292 | 1617 | *drain* | 1587 | c1000 | |
| *increase* | c1380 | c1386 | 1552 | *open* | c1000 | c1000 | |

As shown in Table 4.11, 46 out of the 50 ergative verbs are found to have their prenominal participles and as shown in the statistical analysis in Table 4.12, which is based on Tables 4.10 and 4.11, the majority of these participles were first attested in

ME or EModE, while all cases of unaccusative participles were first attested in EModE or LModE, as we saw in Section 4.3.3.3.[56]

Table 4.12. Distribution of ergative verbs and their prenominal participles[57, 58]

| | OE | ME | EModE | LModE |
|---|---|---|---|---|
| Ergative verbs | 5 (10.87%) | **21 (45.65%)** | **14 (30.43%)** | 6 (13.04%) |
| Ergative participles | 1 (2.17%) | **11 (23.91%)** | **27 (58.70%)** | 7 (15.22%) |

It is thus reasonable to conclude that the emergence of a large number of ergative verbs in ME and EModE was indeed available as data to stimulate the reanalysis in (44). As long as the reanalysis takes place, the child will try to derive a participle from an accusative verb as a prenominal modifier because the argument structure of unaccusative verbs (cf. (43b)) resembles that of the causative intransitive variant of ergative verbs (cf. (42b)). That is, the child learns prenominal unaccusative participles as a new construction based on the structural resemblance. We now conclude that this indeed happened given the emergence of a large number of ergative verbs and their participles throughout ME and EModE.

### 4.3.5. Conclusion

This section has discussed how unaccusative participles emerged in EModE. Based on the data obtained from Visser (1963-73), the corpora and OED, it was shown that unaccusative participles were not available as prenominal modifiers until EModE and this is because unaccuative verbs do not satisfy the licensing condition AC, which was still at work in ME. It was argued that their emergence in EModE was triggered by the emergence of a large number of ergative verbs, which have the same argument structure as unaccusative verbs. Due to the dual nature of ergative verbs, a reanalysis took place with their participles used as prenominal modifiers and by

analogy to participles of their causative transitive variant, unaccusative participles became available as prenominal modifiers.

Note that as the reanalysis took place, the licensing condition AC got diluted and inner aspect became inert for unaccusative verbs.[59] Then we must answer the question of how the required resultativity is assured. This leads us to question of the locus shift of resultativity. Because unaccusative participles do not express Stative result states but rather Perfect result states, the required resultativity is bound to be expressed via outer aspect, which has already become active. If outer aspect had never become active for participial formation, unaccusative participles would not have emerged because there would have been no locus for the Perfect resultativity of unaccusative participles. On the other hand, the loss of the aspectual prefixes induced the emergence of ergative-based participles, which in turn led to the emergence of unaccusative participles. In this sense, the emergence of unaccusative participles may be seen as an important consequence of the aspectual change from inner aspect to outer aspect, though it is triggered directly by the emergence of ergative verbs.

## 4.4. The Development of Unergative Participles

### 4.4.1. Introduction

This section addresses the issue that how unergative participles as exemplified in (45) came to be available in PE.

(45) a. a well-prepared teacher (= a teacher who has prepared well) (Bresnan (1995: 13))

b. a practiced liar (= a liar who has practiced) (Bresnan (1995: 13))

c. an experienced sailor (Bruening (2014: 419))
d. an unpublished author (Bruening (2014: 419))
e. There is no learned scholar who is not a reader. (COCA [ACAD: 2004])
f. She was perhaps one of the most well read women, … (COCA [SPOK: 1999])
g. A well travelled man I am. Aren't I? (COCA [FIC: 2001])

Recall that such participles are not subject to Affectedness Condition (AC), but to Result State Condition (RSC), repeated below.

(46) Affectedness Condition:
The base verb must be an affectedness verb.

(47) Result State Condition:
A prenominal participle denotes a result state.

This leads us to predict that such participles were developed as a result of broadening of the types of verbs as input to Perfect Resultative participles. This prediction is born out, as we will see. However, one characteristic of such participles immediately poses a question here. That is, they express a certain type of possession as a result of accomplishment of a prior event or action, as we have seen in Shapter 2.2.2. In light of this fact, we analyzed them as a special type of noun-based participles. This leads us to the correlation between the notion of noun-basedness and their historical development. With this in mind, we now turn to their historical status, paying attention to when they began to be attested in the history of English.

### 4.4.2. Historical Data: Based on *OED*

Unergative participles have not previously been characterized in the literature of English history, though some examples such as *learned* that could fall under this group were recorded sporadically in previous works. Table 4.13 provides a list of

unergative participles recorded in *OED*.

Table 4.13. First occurrences of unergative participles (the *travelled* type participles)

| | Used as verb | Used as noun | Participle | Prenominal participle |
|---|---|---|---|---|
| *Experienced* | 1588 | 1377 | 1576 | 1592 |
| *Fought(en)* | c900 | c1000 | 1631 | |
| *Learned* | c900 | | c1340 | 1556 |
| *Practised* | c1460 | 1553 | 1568 | 1568 |
| *Prepared* | 1466 | 1535 | 1526 | 1526 |
| *Read* | c900 | 1825 | 1586 | 1650 |
| *Studied* | c1300 | c1300 | 1530 | 1602 |
| *Travelled* | c1290 | c1375 | 1413 | 1413 |
| *Written* | 831 | | a1911 | 1959 |

It must be noted here that these examples are listed in *OED* as exemplifying the sense such as "having X, provided with X, gained X by V-ing" of a given verb. For example, *experienced* is described as "Having experience; wise or skilful through experience" and *learned* as "Having profound knowledge gained by study". The first attested example of each participle is given below.

(48) **Experienced**: 1576 J. Knewstub Confut. (1579) Q ij b, Men not experienced of his goodness particularly must needs think, etc.
**Flown**: 1608 Sylvester Du Bartas ii. iv. Tropheis 1049 Their far-flow'n wings.
**Fought**: 1631 Chapman Cæsar & Pompey Plays 1873 III. 166 So many staid and dreadfull soldiers?··long foughten?
**Learned**: 1556 Chron. Gr. Friars (Camden) 48 The byshoppe of Wynchester, with dyvers other byshoppes & lernede men.
**Practiced**: 1568 Grafton Chron. II. 507 A companie of warlike and practised souldiours.
**Prepared**: 1526 Pilgr. Perf. (W. de W. 1531) 73 In a prepared or disposed

soule he maketh ye fyrst beame of loue to shyne.

**Read**: 1586 A. Day Eng. Secretary ii. (1625) 127 He ought··to be well languaged, to be sufficiently read in Histories and Antiquities.

**Studied**: 1530 Tindale Answ. More Wks. (1573) 247/1 The naturall man··be he··neuer so well sene in the law, neuer so sore studied in the Scripture, …

**Travelled**: 1413 Pilgr. Sowle (Caxton 1483) iv. xxxiii. 81 Auncyen trauayled men that ben experte in dedes of armes.

**Written**: a 1911 D. G. Phillips Susan Lenox (1917) II. xii. 355 He's had several failures.·· They say he's written out.

Most of the participles were attested in ModE in either predicative use or prenominal attributive use. Only two of them are from ME: *learned* (c1340) and *traveled* (1413). *OED* lists (49) as the first attested example of *learned*.

(49) **Learned**: c1340 Cursor M. 10416 (Laud) This lady was of muche price lovid and lernyd [older texts lered] ware and wyse.

However, *lernyd* here is indistinguishable from the variant that is possibly formed from the transitive variant of *learn*. As *OED* puts it, *learned* in its early use denoted a person that has been taught, instructed or educated; its narrowed sense of 'having profound knowledge gained by study' was developed later. This suggests that unergative participles were in fact not available until the 15th century.

*Fought(en)* is recorded to have had an earlier occurrence.

(50) **Fought(en)**: c1275 Lay. 26189 On wis cniht com ride to þis kinges ferde þat was al for-fohte. c1350 Will. Palerne 3686 ȝour mene··þat feynt ar for-fouten in feld.

Note however that these two occurrences are both marked with the aspectual prefix *for-*. Given that this prefix has a function of transitivizing or perfectivizing, as

noted in Chapter 4.3, we cannot exclude the possibility that the two occurrences were formed from the transitive variant. Therefore, this participle cannot qualify as an active participle but as a passive one.

It then can be concluded that unergative participles are a later development like as unaccusative participles, in the history of English participles. This leads us to the question why this development is later than that of transitive participles. To put it another way, why were unergative participles not available until EModE and how they came to be available from then on. We discuss these question in the following subsections.

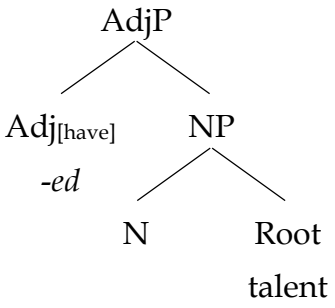
### 4.4.3. Analysis

In this section, we discuss what brought about unergative participles in EModE. To find out the answer to this question, we have to take the *talented* type into account for the *talented* type and the type under discussion are share a noun-based structural component, as discussed in Sections 2.3.2.2 and 4.4.1.

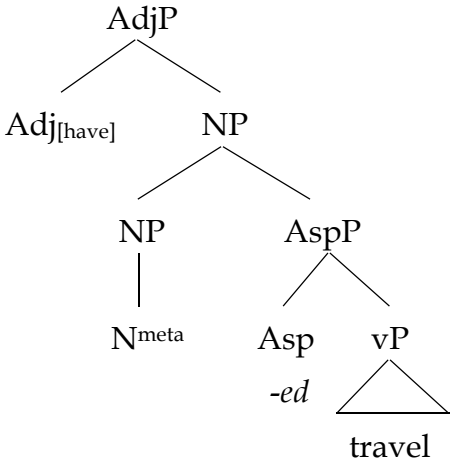
#### 4.4.3.1. Structural Resemblance

In fact, as will be clear, unergative participles under discussion were brought about by the *talented* type through structural resemblance. Their structures are given below.

(51) The structure of noun-based participles (the *talented* type):



(52) The structure of noun-based participles (the *travelled* type):




Obviously, NP is present in both cases, though the head nouns differ from each other with respect to whether they are pronounced or not (cf. Section 2.3.2.2).

#### 4.4.3.2. The *Talented* Type Participles

Now we have a look at the historical status the *talented* type, clarifying the possibility of their relevance to the development of unergative participles, namely the *travelled* type of noun-based participles. The servey focuses on the periods of time when they are first attested.

The *talented* adjectives have been attested since OE. *OED* and Visser (1963-73: 1223) provide OE examples such as *hringede* 'ringed' and *hócede* 'hooked', *healede* 'ruptured' and so on. The survey here, utilizing the quotation search function of *OED*, has found a number of ME and EModE participles, as summarized in the tables below.

Table 4.14. First occurrences of the *talented* type participles (derived from human-body-part nouns)[60]

| | Used as verb | Used as noun | Participle |
|---|---|---|---|
| *Bearded* | c1380 | c825 | c1380 |
| *Boned* | 1871 | c1000 | 1297 |
| *Breasted* | 1599 | c1000 | c1314 |
| *Eared* | 1440 | a1000 | 1434 |
| *Eyed* | 1566 | a700 | c1374 |
| *Footed* | 1557 | c950 | 1453 |
| *Haired* | 1539 | a800 | c1380 |
| *Headed*$_1$ | c1374 | c825 | c1374 |
| *Hearted*$_1$ | c897 | c1000 | c1205 |
| *Legged* | 1628 | c1275 | 1470 |
| *Necked* | | c897 | 1486 |
| *Skinned* | 1547 | c1200 | c1400 |
| *Tailed* | 1817 | a800 | 1297 |
| *Tongued* | 1832 | c897 | c1369 |
| *Toothed* | c1410 | a900 | 1413 |

Table 4.15. First occurrences of the *talented* type participles (derived from part-of-plant nouns)[61]

| | Used as verb | Used as noun | Participle |
|---|---|---|---|
| *Bloomed* | c1250 | c1200 | c1505 |
| *Blossomed* | c890 | 971 | c1340 |
| *Branched* | 1398 | a1300 | c1350 |
| *Colored* | c1325 | c1290 | c1325 |
| *Flowered* | 1393 | a1225 | c1360 |
| *Leaved* | 1611 | c825 | c1250 |
| *Rooted* | a1340 | a1150 | 1390 |

Table 4.16. First occurrences of the *talented* type participles (derived from abstract nouns)

| | Used as verb | Used as noun | Participle |
|---|---|---|---|
| *Cultured* | 1510 | c1420 | 1764 |
| *Diseased* | c1340 | c1330 | 1574 |
| *Headed*$_2$ | c1374 | c825 | 1600 |
| *Hearted*$_2$ | c897 | c1000 | 1538 |
| *Languaged* | 1636 | c1290 | 1605 |
| *Minded* | 1340 | c1000 | 1503 |
| *Sized* | a1400 | a1300 | 1582 |
| *Talented* | a1633 | c1430 | 1827 |

#### 4.4.3.3. The Expansion of Nominal Types

Of interest in the above tables is the expansion of the type of the base noun selected by *-ed*. It is not difficult to see that in the earlier period, approximately 1200-1350, the type of the base noun was basically restricted to a concrete noun; they were human-body-part nouns, as seen in Table 4.14 and or instrument nouns, as shown in the data provided by *OED* and Visser (1963-73)).[62]

(53) copped 'topped', healed 'ruptured', hocede 'shaped like a hook', hoferede 'humpbacked', hringed(e) 'furnished with rings', micelheafdede 'big-headed', sureagede 'blear-eyed', þriheafede 'three-headed', twi-læpped 'having two skirts', thrifotede 'having three feet', thrihiwede 'having three forms'

(Visser (1963-73: 1223))

The subsequent expansion covered part-of-plant nouns in ME, as shown in Table 4.15 and abstract nouns in EModE, as shown in Table 4.16. In this respect, *OED* describes that "The suffix is **now added without restriction to any n**. from which it is desired to form an adj. with the sense 'possessing, provided with, characterized by' (something). Visser (1963-73: 1223) also writes, "In later English the forms that came

down from Old English (like *ringed* and *hooked*) and analogous new formations ended n *-ed*, …".

Expansion from concrete nouns to abstract nouns can also be found in participial forms based on the same verb. For example, *hearted* and *headed* (cf. Tables 4.13 and 4.15) were used to denote a person having a heart as a bodily organ or a head as body part in the 14th century and subsequently developed meanings such as 'spirited' and 'matured' in the 16th century, according to the examples listed in *OED*, given below. Note that the associated nouns are concrete nouns in (54) whole abstract in (55).

(54) **Headed**: [c1374 Chaucer Troylus ii. (993) 1042 Yf a peyntour wolde peynte a pyk With asses feet and hede it [MS. Gg. 4. 27 **hedit**] as an ape.]
**Hearted**: 1340 Hampole Pr. Consc. 7505 Here es no man lyland Swa hard-**herted**.

(55) **Headed**: 1600 Shakes. A.Y.L. ii. vii. 67 All th'imbossed sores, and **headed** euils.
**Hearted**: 1538 Leland Itin. V. 26 Coltes· ·better fed then **harted** or apt for War.

The overall picture of the expansion then looks like the following: (56a) > (56b) > (56c) > (56d).

(56) a. [$_{AdjP}$ *–ed* [$_{NP}$ $N^{concrete}$ (human-body-parts, etc.)] (cf. Table 4.14)
b. [$_{AdjP}$ *–ed* [$_{NP}$ $N^{concrete}$ (parts of plant, etc.)] (cf. Table 4.15)
c. [$_{AdjP}$ *–ed* [$_{NP}$ $N^{abstract}$ (mind, disease, etc.)]] (cf. Table 4.16)
d. [$_{AdjP}$ *–ed* [$_{NP}$ $N^{meta}$ (KNOWLEDGE, SKILL, etc.)]] (cf. Table 4.13)

Note here that metaphysical nouns such as *knowledge* and *skills*, which are further abstract, in (56c) lack phonological forms. They are not lexicalized arguably because

in the phonological sequence, say, 'H(ost) - *ed*', the suffix is necessarily hosted by the verbal root, for example, *travel*.[63]

The scenario in (56) deserves further attention in that it could derive a structure like (57), in which a result noun occupies the position, as shown below.

(57) [$_{AdjP}$ *-ed* [$_{NP}$ N$^{meta}$ (WORKS, PUBLICATION, etc.)]] (cf. (45))

For example, *an unpublished author* is understood as 'an author who has no publications or works'. Of particular interest is the fact that nouns like *publication* and *works* as discussed here are not pronounced, e.g., **publication-ed, *work(s)-ed*, etc. This leads us to assume that (57) is a further expansion from (56d).

Now it can be assumed that the structure, in which the adjective head *-ed* selects a nominal category, easily opens up the possibility that the restriction on the type of noun weakens so that a (further) abstract noun can also be selected, if it creates a possessive relation as required by the head *-ed*. This assumption is plausible given the data in Tables 4.13-4.15. All in all, structural resemblance (or structural identity) with regards to the adjective head's government of a nominal category gave rise to the emergence of unergative participles.

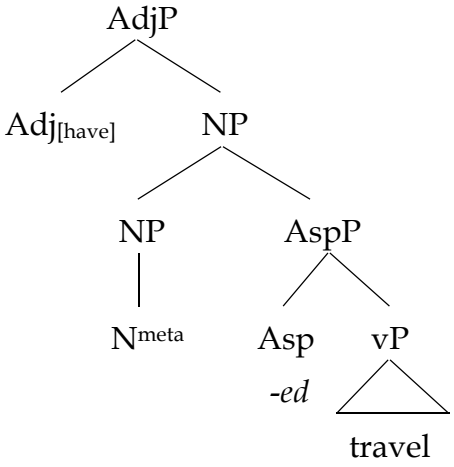
### 4.4.4. Conclusion

This section has attempted to clarify the development path of a certain group of unergative participles. The survey based on *OED* has showed that the unergative participles were not available until EModE. It was argued that the structural resemblance, i.e. the NP-*ed* structure, was the factor of the emergence of the unergative participles. In particular, it was proposed that in the NP-*ed* structure, the NP came to allow a wider range of nominal types. It was also noted that the

expansion of nominal types has been based on the possessive relation between the NP and the modified noun, where the suffix *-ed* express the meaning 'possessing X, having X, provided with X, characterized by X'. As a result of the expansion, unpronounceable metaphysical nouns became available in the structure, giving rise to the unergative participles.

Before closing this section, I must be noted that the emergence of the unergative participles in EModE is in fact another important consequence of the aspectual change discussed in Section 4.2. Recall that this special group of unergative participles is not subject to AC. This is because the modified noun is an external argument and the base verb is not an affectedness verb, that is, not a COS verb. They are instead subject to RSC because they generally express result states, as noted by Bresnan (1995) (cf. Section 2.2.4). This, as mentioned in Section 4.4.1, leads us to predict that these participles were developed as a result of broadening of the types of verbs as input to Perfect Resultative participles. This prediction has been born out. Note that when outer aspect became active after the locus shift of resultativity, an increasing number of participles began to be derived via outer aspect, that is, derived grammatically. Also note that these unergative participles have a structure, repeated below, in which AspP is present below NP headed by a metaphysical noun.

(58) The structure of noun-based participles (the *travelled* type):




In (58), AspP, being the outer aspect projection, is located above vP; it cannot be InAspP because the lexical semantics of the base verb does not serve to express a Stative result state.[64]

It then follows that unergative verbs are derived grammatically. Specifically speaking, they have a structure involving grammatical/outer aspect-related part, as seen in (58), though that part is embedded under NP.

All this allows us to argue that the emergence of this group of unergative verbs in EModE is indeed a consequence of the aspectual change as discussed in this chapter. If the aspectual change had not happened in the history of English, the AspP component in (58) would not have been available for unergative verbs under discussion. All in all, they emerged as a result of the expansion of the type of the base verb in noun-based participles, on the one hand, and it remains as a consequence of the aspect change that took place in the history of prenominal (and post-auxiliary) participles.

## 4.5. Summary and Conclusion

The aim of this chapter has been to clarify how prenominal participles in PE were shaped out of their earlier counterparts. The investigation conduced in each section has showed a hitherto unreported fact concerning participial formation: The locus of the required resultativity shifted from the inner aspect head to the outer aspect head, due to the loss of the aspectual prefixes in EME and this locus shift of resultativity brought about certain individual consequences.

Section 4.2 discussed the first of the consequences: Eventive participles became available from EME onwards as a natural consequence of the rise of the Perfect structure. Section 4.3 discussed the emergence of unaccusative participles, which was shown to be the second consequence of the aspectual change. Lastly, in Section 4.4, I have showed that a certain group of unergative participles, which have a noun-based structure, emerged as another consequence of the aspectual change.

It was also shown that the emergence of unaccusative and unergative particples took place as direct results of some other changes; in particular, the former was as a result of the emergence of a large number of ergative verbs and the latter the expansion of the type of the base verb of noun-based participles. Structural resemblance was shown to have played important roles in both cases, on the other hand.

The investigation in this chapter has also showed that the development of verb-based and noun-based participles share a common feature: The type of the base word has expanded towards PE and various meanings have evolved to prenominal participles.

# Notes to Chapter 4

1. Henceforth, unless otherwise specified, when I refer to 'participles', I am referring to prenominal past participles in this chapter.
2. See Section 4.2.2 for a detailed illustration of Stative result states as opposed to Perfect result states.
3. 'Inner *vs.* outer aspect' here (cf. Travis (1997: 7)) corresponds to the traditional 'lexical *vs.* grammatical aspect' or 'situation *vs.* viewpoint aspect' (cf. Smith (1991: 3)).
4. For discussion of the interaction or relationship between affectedness and transitivity, see Tenny (1987: 70ff).
5. I, following Traugott (1992) and McFadden and Alexiadou (2010), employ the name 'the *have* periphrasis' for clauses with the auxiliary *have* and the Perfect meaning, which are sometimes referred to as '*have* Perfect' or 'the Perfect construction' in the literature.
6. Some authors use the term 'adjectival' to refer to the intended meaning 'The entity is not in a currently holding state'.
7. Bybee et al. (1994) use the term 'anterior' for the Perfect.
8. Many scholars and grammarians are often not careful with using terms. The words such as *denote*, *describe*, *entail*, *express*, *imply*, *infer*, *refer to*, *signal*, *signify*, etc. are often used interchangeably by them. In order to be accurate enough with the notions under discussion in the text, I use the word *express* in meaning that in the real world, the referent, whether concrete or abstract, of a given linguistic expression is directly identified by that expression. E.g., in (1b), the participle *built*

identifies the state of the house its referent in the real world, where I say, "The participle expresses the state." In the other case, I use *entail* in meaning that a given linguistic expression does not identify but rather renders something, whether concrete or abstract, true in the real world. E.g., in (2b), the participle *built*, which identifies a past action of building with current relevance as its referent, leads to a result state of the action, which holds true in the real world. Then, I say, "The participle entails the state. See also Section 2.2.4.5 for discussion concerning 'entailment'.

9. See also Bybee et al. (1994: 54, 61-64) among many other for an alternative way of describing the distinction between the Perfect (their 'anterior') and the Resultative. A crucial difference between them in PE is that the Perfect, but not the Resultative, has additional meanings, traditionally referred to as 'Experiential/Existential', 'Universal/Continuous' and 'Hot News/Recent Past', etc (cf. Comrie (1976: 56-65), Binnick (1990: 264-281), Parsons (1990: 234-239), Ritz (2012: 883) and many others).
10. Stative Resultative and Perfect Resultative here correspond to Lexical Resultative and Grammatical Resultative discussed in Section 2.2.4, respectively.
11. See Tragott (1972: 93), Mitchell (1985: §728-733), Carey (1996: 34) and McFadden and Alexiadou (2006: 277; 2010: 392), for example. Disagreement with these authors include Brinton (1988: 100) and Wischer (2004: 249). It seems that of disagreement among authors exists over the analysis of individual examples, not over the construction in general (cf. Ringe and Taylor (2014: 437)).
12. See Bybee (1994: 69ff), McFadden and Alexiadou (2010: 392), for example.
13. See Carey (1996: 35), McFadden and Alexiadou (2010: 401-402), for example. (Lee

(2003), however, claims that the Existential meaning and Universal meaning were already available for OE *have* periphrasis.

14. See Toyota (2008) for a different position as regards *be*.
15. McFadden and Alexiadou (2006: 276) write, "The most important element here is the $Asp_R$ head (in (7) in the text). It produces a state which is the result of a prior event, and thus requires as its complement an eventuality which can reasonably produce a result state. This explains why iteratives, duratives and atelic predicates in general don't like to show up in the *be* perfect. Admittedly, their assumption seems to be on the right track. But this is far from sufficient to explain what happened to the participle itself.
16. Those like *The man is arrested* and *The leaf is fallen* are at best dubious in PE because the base verbs do not have COS meanings (cf. Grimshaw (1990: 182, fn.14)). The marginal *be gone*, arguably an idiomaticalized cluster, for example, in *The man is gone* seems to be an exception. Another apparent, but not true, exception consists of a certain group of verbs such *follow*, *surround*, *cap*, etc. Such verbs, when selected by *be*, typically require an argument be present, e.g., *The house was surrounded by mature trees; The event was followed by another; The mountain is capped by snow* (cf. Grimshaw (1990: 124-128)). Clearly, argument structure is crucial here. Participles of such verbs, however, are indifferent from those of COS verbs in that the former have Spatial Stative meanings while the latter have Stative Resultative meanings. So, they do not qualify as exceptions to the semantic selection in the *be* periphraris.
17. McFadden (2015) investigates the prefix *ge-* and is ware of its function in participial formation. His analysis of this prefix compensates for the weakness of

McFadden and Alexiadou's (2006, 2010) analysis of the *have* periphrasis and the *be* periphrasis to some extent.

18. A preliminary approach is given in Chigchi (to appear).
19. The numbers in the table represent occurrences of type, not token.
20. Recall the earlier discussions in Sections 2.2.1 and 2.2.4 as well as the sources cited there that post-auxiliary position is more tolerant of Eventive participles than prenominal position.
21. Mitchell (1985: §§711), Traugott (1992: 191) and Denison (1993: 341), for example, seem to also take this stance, unlike Brinton (1994).
22. I restricted my search of YCOE and PPCME2 to auxiliary(*have*)-initial clauses in which an accusative object immediately precedes the participle and those in which the participle precedes an accusative object.
23. The periodization of the history of English in the corpora is as follows: O1 (-850), O2 (850-950), O3 (950-1050), O4 (1050- 1150), M1 (1150-1250), M2 (1250-1350), M3 (1350-1420), M4 (1420-1500), E1 (1500-1569), E2 (1570- 1639), E3 (1640-1710), L1 (1700-1770), L2 (1770-1840), L3 (1840-1900). In Tables 4.4 and 4.5, O1 and O2, O3 and O4, M1 and M2, and M3 and M4 are combined as EOE, LOE, EME, and LME, respectively. The term 'Early English' in this thesis is used as a cover term for OE (to 1150), ME (from 1150 to 1500) and EModE (from 1500 to 1710).
24. The translation of the OE examples into PE in this thesis is based on *An Anglo-Saxon Dictionary* (Bosworth and Toller (1898)) and the translation of ME examples is based on *A Middle-English Dictionary: Containing Words Used by English Writers from the Twelfth to the Fifteenth Century* (Stratmann and Bradley (1891)).

25. See Fischer (2001) for discussion of the inflectional status of prenominal and postnominal adjectives.
26. As for post-auxiliary participles, they might have been already obtained the Perfect Resultative sense earlier in O2 given the asymmetry discussed in Tables 4.3 and 4.4.
27. This structure is strongly supported by the fact that *ge-* was not attached to noun-based participles, namely *-ed* adjectives, in OE, as noted by Visser (1963-73: 1223). The noted fact suggests that the prefix was part of the base verb.
28. Consistent with this is McFadden (2015: 38), who also associates *ge-* with inner aspect (*res*, in his terms) rather than outer aspect.
29. Gelderen (2011: 110) claims that in OE, *ge-* used to function as adding a theme argument to the verb, whereby a valency change took place in the history of certain verbs.
30. In this sense, aspectual prefixes, the lexical realization of the Inner aspect head in nature, functioned as participle markers because basically only prefixed verbs were able to derive participles.
31. Based on Ramchand's (2008) verbal composition approach, McFadden (2015) locates *ge-* on the head of a result phrase, *res*P, which roughly corresponds to InAsp in (11) and (12).
32. This is the same for McFadden and Alexiadou (2010). They, however, ignore the Inner aspect.
33. In the case of noun-based participles, in which the base noun is not a metaphysical noun, it occupies a higher head, Adj, as we will see in Section 4.4.
34. Cowper and Hall (2012: 137-138) present a similar structure, suggesting the

possibility that OutAsp was inert at first and subsequently became active while InAsp became inert. This assumption seems to be problematic for their analysis of passivals in LModE but not for the present analysis here.

35. Of course, they may be split onto different aspect heads, if we adopt Cinque's (1999) functional hierarchical approach. What is certain is they can never be associated with InAsp.
36. The earliest example in his list was attested in c1205 (cf. Section 4.2.5).
37. Stative Resultative has survived into PE and presumably the majority of prenominal participles in PE are still Stative Resultative, e.g., *the closed door*, *the damaged car*, *the broken window*, etc. See also examples of post-auxiliary participles in (3) in the introduction.
38. VoiceP is left out here, just for the sake of simplicity.
39. Related discussion was given in Section 2.2.3, where, however, we were not concerned with the type of unaccusative verbs in connection with participial formation.
40. See Levin and Rappaport (1995: 90-110) for detailed discussion of internal and external causation.
41. Participles as in *the white-blossomed magnolias* are noun-based because the participle is often combined with an element that can only modify the base noun, unlike those as in *a newly blossomed rose*, in which it is clear that the participle itself is modified by the adverb. Visser (1963-73: 1224) also notes that such participles in Me and ModE are ambiguous between noun-based and verb-based.
42. Participles based on COS verbs and verbs of undirected motion are discussed in Section 4.2.4.2 in connection with the question of what triggered the emergence of

unambiguous unaccusative participles as mentioned above.

43. *Drunken* is included in the list of OE participles provided by Visser (1963-73: 1227). The examples containing this participle he provides, however, are all from ME and ModE (1963-73: 1228).
44. These two participles may fall under the unergative type as discussed in Section 2.2.3.
45. Recall our earlier discussion that prenominal participles were Stative Resultative in OE.
46. Note that this could imply that prenominal participles in OE were subject to a licensing condition entirely different from that in PE: basically, they were required to be marked with aspectual prefixes regardless of the types of their base verb.
47. See Section 4.4 for discussion of unergative participles like these.
48. The verbs/participles that also appear in Visser's (1963-73) data are enclosed in square brackets.
49. That some of the verbs in Table 4.10 were not attested with their prenominal participles does not necessarily mean that they cannot participate in the formation of unaccusative participles, as shown in the following examples from other sources than *OED*.

    (i) a. *the recently emerged forces of the Left* (COCA [ACAD: 1999])
    b. *an escaped convict* (Bresnan (1995: 12))

50. By utilizing *OED*, I have also investigated the distribution of prenominal participles based on entity-specific COS verbs, and found out that there were no examples attested before EModE in which the participle is modified by an adverb; the earliest such example is given in (i). Given that such examples unambiguously

involve a verb-based participle, this result would be compatible with the conclusion reached in this section that unaccusative participles emerged in EModE.

(i) 1646 CRASHAW Steps to Temp. 29 A mouth, whose *full-bloom'd lips* .. are roses. (*OED*)

51. Tenny (1987: 106) was aware of this and did not include these types of verbs in his affectedness verb class. Unaccusative verbs under discussion and affectedness verbs defined by Tenny are similar with respect to telicity, yet they differ with respect to delimitation as discussed by him. Note that the term 'unaccusative verb' used by Tenny in his dissertation refers to the causative transitive variant of ergative verbs like *melt*, but not pure intransitive unaccusative verbs we are discussing, such as *escape* and *fall*.
52. Noteworthy here is the fact that participles of some transitive verbs withnot COS state meanings, which are not affectedness verbs, did appear in prenominal position in ME, according to my corpus investigation (cf. Appendix B). This is somewhat unexpected under AC. I tried to capture this fact in terms of changes in licensing condition of prenominal participial formation in Chigchi (2016b): AC in OE > Transitive Verb Condition (TVC) in ME > Internal Argument Condition (IAC) in EModE onwards. The question of how such conditions, in the history of prenominal participles, functioned and interacted with each other where the lexical semantics of Early English verbs is concerned is left open for future research.
53. Following Bruening (2014), I assume that the structure of the entire NP can be represented as in (19b), in which the modified noun is connected with the internal argument position through the lambda operator.

54. Recall that unaccusative verbs under discussion do not include those with a COS meaning (cf. Table 4.7). The intransitive variant of ergative verbs is also often referred to as unaccusative verbs. But these two types of unaccusative verb have different lexical semantics, as also noted in Table 4.7, despite the fact that they share the same argument structure.
55. It must be noted that the years given in the table are only of the relevant examples that could form a causative-anticausative pair rather than merely a transitive-intransitive one. For example, the verb *fill* with the stative meaning (Jackendoff (1990: 159)) 'to occupy the whole capacity or extent of' (cf. *OED*) in fact does not participate in the causative alternation, and so this use of the present verb is not counted in the table.
56. As we can see in Table 4.11, *freeze* and *grow* were attested with their prenominal participles (in 1375 and 1340, respectively) before they became ergative verbs with the emergence of the transitive variant, so such participles were based on the intransitive variant. Another is *break*, whose participle as a prenominal modifier was attested (in 737) before both its transitive and intransitive variants emerged. This, however, is not surprising because they are both affectedness verbs.
57. The figures for ergative verbs show the distribution of the first examples indicating the establishment of the ergativity of them, not of the first examples of their transitive or intransitive variants.
58. Note the asymmetry between ergative and unaccusative participles: the former were attested, while the latter were not in ME. In particular, unaccusative participles, unlike ergative participles, lack the transitive source and they emerged by analogy with ergative participles, as we have seen. This indicates that

the emergence of ergative participles must have taken the lead.

59. As the same time, IAC became active towards PE, as discussed in Chigchi (2016b, to appear).
60. Some of these adjectives are morphologically identical to verbal participles. The years in which the (transitive causative) verbal variant and the nominal variant (used to denote body part) of each item are introduced are also included in the table. The extraction of the date of the first attested examples carefully follows *OED*'s description; the dates in the Adj column are only associated with the relevant sense 'having X, provided with X'.
61. The investigation method in this table is the same as that in Table 4.14 and 4.16.
62. Visser's examples listed in (53) are all from OE and many of them are not recorded in *OED*.
63. An elaboration on this from the perspective of adjunct fusion in connection with phonology would give us a clear answer. I leave this issue open for future research.
64. Recall that generally only COS verbs can derive a Stative result state and their participles can appear in the post-copula position, as exemplified below (cf. also Section 4.2.2).

(i) a. * The man is arrested.
b. * The leaf is fallen.
c. The lake is frozen.
d. The ice cream is melted. (Grimshaw (1990: 182, fn.14)

# Chapter 5

# Postnominal Past Participles in Early English: Word Order Changes

## 5.1. Introduction

This chapter discusses word order changes that took place in postnominal past participial phrases. When it comes to word order, information structure must be relevant. As for West Germanic languages including English, it is often observed that word order changes are correlated with information structure in a way or another, though the latter sometimes might not serve as triggers of the former. Word order changes, however, are also often imposed by syntactic constraints.

Two major cases of postnominal participial phrases are discussed in this chapter, where it is shown that information structure is at work in the syntactic derivation of the word orders and a given change is constrained semantically or syntactically. Split participial phrases were allowed earlier in the history of English but were lost in later periods. It is argued that in earlier periods a given nominal modifier could move to prenominal position if it is required to take a wider scope over the modified noun. Let us refer to such movement as 'scope-taking movement'. It is also shown that the loss of split participial phrases was due to the emergence of a semantic constraint. Another case of information structure-related operation is PP-fronting in postnominal participial phrases and other non-finite participial clauses. It is regarded as a device for defocalization; it takes place when non-focused elements need to move out of narrow focus positions. The differences as regards PP-fronting between non-finite and finite clauses and the late loss of PP-fronting in non-finite clauses have

much to do with syntactic constraints such as phasehood and cyclic linearization.

This chapter is organized as follows. Section 5.2 addresses the issue of split participial phrases. After giving a brief introduction to the section, I present the historical status of split participial phrases and provide an analysis of their syntactic structure and discuss why they were lost. In the remainder of the section, I discuss split adjectival phrases in PE in connection with split participial phrases in question. Section 5.3 is concerned with PP-fronting in postnominal participial phrases. The section first introduces what is discussed in its substantive sections and presents corpus data. After that, an analysis and consequences of the investigation are presented in the remainder of the section. Section 5.4 discusses the asymmetry between finite clauses and non-finite participial clauses including postnominal participial phrases, with respect to their syntactic structure and their loss. After presenting corpus data, the section presents an explanation of the asymmetry. Section 5.5 concludes and summarizes all the discussion in this chapter.

## 5.2. Split Participial Phrases and Their Loss[1]

### 5.2.1. Introduction

This section investigates the historical status of English split past participial phrases, in which the participle and the PP complement are split around the noun modified, as exemplified in (1).

(1) Ælfred, Bede (Miller) 362. 15. swa swa hie þæt ***sende wite from Gode Sceppende*** …
'… the punishment sent by Father God… ' (Visser (1963-73: 1246))

Using Visser's (1963-73) data as a starting point for inquiry, this section conducts

an empirical investigation of such participial phrases (henceforth, referred to as 'split past participle phrases (SPPs)') and attempts to explain why they were allowed at first but subsequently became obsolete in the history of English. I will show that split past participial phrases were introduced into the West Saxon dialect from Latin in EOE and then extended from the South to the Midlands, but this construction began to decline in EME and were lost eventually. I will argue that the prenominal participle in this construction originates in postnominal position, forming a constituent with the PP, and moves to prenominal position for scopal reason.

In PE, SPPs are not allowed, as shown in (2a), which is the PE counterpart of (1); the participle is required to follow the modified noun in postnominal position, as shown in (2b).[2]

(2) a. * the sent punishment by God
b. the punishment sent by God

The survey of English historical corpora in this section will show that SPPs first appeared in texts that are translations of Latin in the EOE period, and to some extent, extended to non-Latin varieties in the LOE and ME periods. I will argue on theoretical grounds that the participle merges in postnominal position and moves to prenominal position for scopal reason, yielding SPP.

The organization of this section is as follows. Section 5.2.2 investigates the distribution of SPPs in the history of English by conducting a survey based on historical corpora as well as by examining the historical data in Visser (1963-73). Section 5.2.3 provides a theoretical analysis of how SPPs are derived. Section 5.2.4 discusses split adjectival phrases. Section 5.2.5 concludes this section.

### 5.2.2. Historical Data

#### 5.2.2.1. Examination of Visser (1963-73)

Little attention has been drawn to SPPs in Early English. Visser (1963-73: 1146), being the only related study available, provides a number of examples of earlier SPPs. He, however, neither conducts a thorough investigation nor provides a theoretical explanation. His examples are given in (3)-(6) below; four among the 12 examples are from OE, three from ME, four from EModE and one from LModE. PPs are shown in italics and participial phrases in bold; the whole NP is underlined.

*Examples from OE:*

(3) a. Ælfred, Bede (Miller) 362. 15. swa swa hie þæt **sende** wite *from Gode Sceppende* …
'… the punishment sent by Father God …'
b. Ælfric, Hom, ii, 290. 15. **gecorenra** manna *to þam ecan life*.
'… man chosen to have an eternal life …'
c. Wulfstan, se deð swa. þe his **gehalgodan** swale *mid þam fullwihte* besmit mid tham
'… soul purified with the baptism …'
d. Letter of Alex, the Great to Aristotle, 44. 4. ðu **unoferswyðda** Alexander *in gefeohtum*
'… Alexander not conquered in battles …'

*Examples from ME:*

(4) a. c1400 A Deuout Treatyse Called The Tree, 99. 3. It is right nedfulle þat such new trew **tornid** soules *fro synne* haue an enemy forto withstond.
'… soul torn by sin …'
b. c1438 Bk, Marg. Kempe 150. 28. A **wel growndyd** man *in scripture*…
'… well grounded man in scripture …'
c. c1445 Pecock, Donet 7. 27. A **litil learned** man *in carpentrie* kanne and …
'… little-learned man in carpentry …'

*Examples from EModE:*

(5) a. 1561 Norton & Sackville, Gorboduc I, ii, 363. That mynyng fraude shall finde no way to crepe Into their **fensed** eares *with graue aduise*.
'… ears fenced with grave advice.'
b. 1593 Shakesp., Rich. II. III. ii. 8. As a **long-parted** mother *with her child*.
'… mother long-parted with her child.'
c. 1607 Idem, Timon IV. ii. 13. A **dedicated** beggar *to the air*.
'… beggar dedicated to the air'
d. 1611 Idem, Cymb. III, iv. 106. the **perturb'd** court, *For my being absent*.
'… court perturbed for my being absent.'

*Example from LModE:*

(6) 1894 Mrs. H. Ward, Marcella II. X. 252. The ruffian has been a **marked** man *by the keepers and police* … for the last year or more.
'… man marked by the keepers and police …'

What should be noted in these examples is that the postnominal PPs do not form constituents with the modified nouns; they instead base-generated as constituents with the prenominal participles and as a result of movement, the participial phrases end up split around the noun.

Another noticeable characteristic of these examples is their dialectal distribution. The four OE examples are all from texts that are West Saxon translations of Latin originals; the latter two of the three ME examples are from Eastern England, with the remaining one unknown; the first of the four EModE examples is from Southern England and the remaining three are all from works of Shakespeare, who is said to have spoken a Midland dialect; the only example attested in the LModE period is from a work of the Australian novelist Augusta Arnold, who was educated in England.

#### 5.2.2.2. Data Based on Historical Corpora

I have conducted a survey of the distribution of SPPs in the history of English by

employing the same corpora: YCOE, PPCME2, PPCEME and PPCMBE. There are 25 examples in total attested in these corpora; 10 among them are from EOE, 10 from LOE, three from EME and two from LME; no examples are found in the Modern English corpora PPCEME and PPCMBE. The attested examples are given in (7)-(10).

*Examples from EOE:*

(7) a. oðÞe Þa **gesettan** Cristes scep *in middum wulfum* hwylcum heorde he fleonde forlete.
'… Christ's sheep settled in middle of wolves …'
(cobede,Bede_2:6.114.18.1082)

b. Þæt he his feondum swiðe arode & Þa **gefremedan** teonan *fram him*,
'… wrong committed by him …' (cobede,Bede_3:16.226.34.2328)

c. swa swa hie Þæt **sende** wite *from Gode* Sceppende Þurh ...
'… the punishment sent by Father God… ' (cobede,Bede_4:28.362.10.3634)

d. … mid **swiðe** geswenctan *horse for ærninge*.
'… horse that was afflicted much in running …'
(cogregdC,GD_1_[C]:4.38.27.436)

e. Soðlice ic seo & ongyte in Þam **forð gelæddan** wætere *of Þam stane*,
'… water led out of the stone …' (cogregdC,GD_2_[C]:8.120.13.1431)

f. …com sum cniht mid **swiðe geswencedum** horse *for ærninge* to Iuliane …
'… horse much afflicted in running …' (cogregdH,GD_1_[H]:4.38.26.398)

g. gebærn to ahsan & swefl & **gebærned** sealt *& pic to ahsan* & swa oster scella
'… salt that has been burnt into ashes …' (colaece,Lch_II_[1]:8.2.5.599)

h. & **awylled** linsæd *on meolce* supe mid,
'… linseed boiled on milk …' (colaece,Lch_II_[3]:11.1.1.3634)

i. sele him etan gewyrtodne henfugel & **gesodenne** cawel *on godum broðe*,
'… colewort cooked into good broth …' (colaece,Lch_II_[3]:12.1.1.3640)

k. Eft is heofena rice gelic **asendum** nette *on Þa sæ* & of ælcum fisccynne gadrigendum.
'… a net sent to the sea …' (cowsgosp,Mt_[WSCp]:13.47.898)

*Examples from LOE:*

(8) a. and hi sylfe worhton him **agotenne** *god of golde* nu iu,
'… god made by pouring gold …' (coaelhom, ÆHom_21:47.3103)

b. … Þæt sum $oðer munuc hwilon, **swiÞe geÞogen mann** *on mihte & on gearum,*
'… a man who strongly grew up with might and …'
(coaelhom, ÆHom_28:83.4051)

c. ða clypodon hi ealle, kyrrieleyson, **up ahafenum** handum *wið heofonas weard*.
'… hands raised for heavens' help …' (coaelive, ÆLS_[Basil]:450.772)

d. … he wæs he wurðode æfre God **up awendum** handbredum *wiÞ Þæs heofones weard*.
'palms (of hand) turned for the heaven's help'
(coaelive, ÆLS_[Oswald]:114.5449)

e. and stod him tomiddes **upastrehtum** handum *to heofonum*
'hands stretched towards heaven' (coaelive, ÆLS_[Thomas]:210.7672)

f. æfter Þam fers and **gesealdre** bletsunge *fram Þam abbode*,
'blessings made by the abbot' (cobenrul,BenR:11.35.15.484)

g. Se weg is seo **fortredene** heorte *fram yflum geðohtum***.**
'a heart treaded by bad thought' (cocathom2, ÆCHom_II,_6:54.65.1102)

h. … ða towerdan gelaðunge **gecorenra** manna. *to ðam ecan life*;
'a man chosen to have an eternal life'
(cocathom2, ÆCHom_II,_17:166.160.3691)

i. on stiðre hæran **upahafenum** eagum. and handum *to heofenum.*
'eyes and hands that are raised towards heaven'
(cocathom2, ÆCHom_II,_39.1:296.296.6757)

k. Heofona rice is gelic **gehyddum** goldhorde *on Þam æcere*;
'treasure picked up in the land' (cowsgosp,Mt_[WSCp]:13.44.889)

*Examples from EME:*

(9) a. Creator Spiritus, wið **$upaheuene** echnen ant honden *toward heouene*,
'eyes and hands that are raised towards heaven' (CMANCRIW,I.54.129)

b. ant sende **iselede** iwrites *wid his ahne kine-ring* ȝeont al his kineriche.
'sealed writings against his Kingship' (CMKATHE,25.95)

c. & bliðe wið Þeos bone ber on heh **iheuen up** honden *towart heouene*.

'hands that are raised towards heaven' (CMMARGA,88.529)

*Examples from LME:*

(10) a. evyn as the newe knyghtys of the Bathe wente whythe **furryde** hoodys *with menyver*.
'hoods furred with Menever' (CMGREGOR,165.878)

b. and the glorie of **chosen** men *to blisse*,
'men who are chosen to be blessed' (CMPURVEY,I,38.1757)

There is little doubt that all these are examples of SPPs since it is unlikely that the head nouns and the PPs form constituents; the PPs are interpreted as dependent on the prenominal participles, judging from their meanings; and most, if not all, of them appear to be adjuncts. The same holds true for Visser's (1963-73) examples.

Let us now have a look at the dialectal distribution of these examples. The 10 EOE examples are all from texts that are translations of Latin originals: Eight among the 10 LOE examples are from texts written in the West Saxon dialect by the same author; The three EME examples are all from the West Midlands; The two LME examples are from southern texts. Notably, these examples show a very similar dialectal distribution to that of Visser's (1963-73) examples.

Visser's examples and those obtained from the corpus search are combined in Tables 5.1 and 5.2. Table 5.1 shows whether they are from Latin texts or not and Table 5.2 indicates their dialectal distribution.

Table 5.1. Distribution of split participial phrases

| Period | EOE | LOE | EME | LME | EModE | LModE |
|---|---|---|---|---|---|---|
| From Latin texts | 11 | 5 | 0 | 0 | 0 | 0 |
| From Non-Latin texts | 0 | 8 | 3 | 5 | 4 | 1 |
| Total | 11 | 13 | 3 | 5 | 4 | 1 |

Table 5.2. Dialectal distribution of split participial phrases

| | EOE | LOE | | EME | LME | EModE | LModE |
|---|---|---|---|---|---|---|---|
| West Saxon | 11 | 13 | Southern | 0 | 2 | 1 | 0 |
| Mercian | 0 | 0 | West Midlands | 3 | 0 | 0 | 0 |
| Kentish | 0 | 0 | East Midlands | 0 | 2 | 3 | 0 |
| Northumbrian | 0 | 0 | Northern | 0 | 0 | 0 | 0 |
| Unknown | 0 | 0 | Unknown | 0 | 1 | 0 | 1 |

We can see from Tables 1 and 2 that SPPs were not of English origin; they were introduced into English under the influence of Latin and appeared in the West Saxon dialect in the South in EOE. Note, however, that they began to extend to non-Latin varieties in LOE in the same area, with eight out of the 13 examples from texts that are not translations of Latin texts. Moreover, the distribution of the examples from ME and EModE represents the spread of SPPs from the South to the Midlands after LOE; afterwards, they began to decline from EME on but still occurred sporadically until LModE. To sum up, SPPs came into existence in English under the influence of Latin but underwent a decline and eventually disappeared from the language.

### 5.2.3. Analysis

#### 5.2.3.2. The Derivation of Split Participial Phrases

Having overviewed the historical distribution of SPPs, this section presents a theoretical analysis of how they are derived. Adopting the theory of transformations, I tentatively assume that participles are base-generated in postnominal position, forming a constituent with the PP, and have raised to prenominal position, as represented in (12).[3, 4]

(12) [$_{NP}$ Participle$_i$ NP [$_{PredP}$ $t_i$ PP]]

I assume that the participle moves out of PredP to the Spec of NP for scopal reason. In what follows, I reason out how such scope-taking movement is tolerated.

It has been observed that the same adjective can occur either in prenominal or in postnominal position, as exemplified in (13).

(13) a. the visible stars (include Capella, Betelguese, and Sirius)
b. the stars visible (include Capella, Betelguese, and Sirius)
(Larson (1998: 155))

Larson (1998) observes that "*Visible stars* in (13a) is most naturally read as referring to those stars whose intrinsic brightness makes them visible to the unaided eye - stars of magnitude 5 or brighter on the standard astronomical scale. By contrast, *stars visible* in (13b) is understood to refer to those stars that happen to be visible at present." In (13a), *visible* is an attributive adjective, while in (13b), it is a predicative one. As observed by Bolinger (1967) and Larson (1998), adjectives can denote either a stage-level or an individual-level state in prenominal position. This is supported by the following data, where the adjective has two occurrences.

(14) a. The visible stars visible include Capella.
b. The visible visible stars include Capella. (Larson (1998: 155))

In (14a), the prenominal *visible* has an individual-level, while the postnominal *visible* has a stage-level reading, much as in (13a, b). It is interesting to note that prenominal position allows two occurrences of the same adjective, as in (14b), where the first one is interpreted as stage-level, while the second one as individual-level. Note, however, that in terms of the attributive *vs.* predicative distinction, the

prenominal *visible*, whether stage-level or individual-level, is an attributive adjective, while the postnominal one is a predicative adjective. According to Alexiadou and Wilder (1998), all prenominal adjectives are attributive, regardless of whether they denote state-level states or individual-level ones. The individual-level *vs*. stage-level distinction does not always correspond to the attributive *vs*. predicative distinction.

As regards their derivation, Larson (2000: 3-4) argues that adjectives with an implicit relative reading, which roughly correspond to stage-level adjectives, are base-generated in postnominal position and move to prenominal position when required. Here arises a question about the reason for such movement: Why do they move? Larson (2000) does not explicitly address this question. I suggest that the reason lies in the attributive *vs*. predicative distinction. Here it must be noted that attributive and predicative adjectives are different with respect to their scope in relation to the modified noun. It is plausible to say in a sense that the former take a scope over the noun, while the latter do not. It then follows that adjectives generated postnominally move to prenominal position in order to take a cope over the modified noun.

Before elaborating on this, let us first look at differences between attributive and predicative modifiers observed in the literature. The basic difference lies in their function. Stavrou (1996: 80: fn.2), among many others including Bolinger (1952, 1967), Higginbotham (1985), Alexiadou and Wilder (1998), Larson (1998, 2000) and Fischer (2001)), accurately describes that attributive modifiers constitute an essential part of the sense (reference, in Bolinger's (1967) sense) of the noun and as such they are necessary for its identification, while predicative adjectives assign a property to the already identified (referent of the) noun, and in this function they constitute

additional, not necessary, information.

Viewing this from another angle, attributive modifiers in fact have scopal effects on the noun. Taking a well-known pair in (15) as an example, only the attributive rather than the predicative variant of the adjective grades with respect to the attribute given in the noun, as observed by Higginbotham (1985: 563).

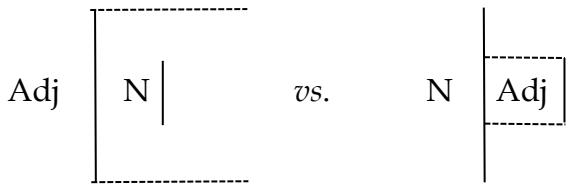
(15) a. That is a big butterfly.
b. That butterfly is big. (Higginbotham (1985: 563))

In (15b), the adjective and the noun are separated by the auxiliary *is*, and it follows that (15b) counts as false with respect to the entity for which (15a) counts as true. Higginbotham (1985: 563) states that when the adjective is separated syntactically from the noun, the semantic link is also broken, which reflects its "analytic style." The pair in (15) can be paraphrased as that in (16). As the paraphrase in (16a) indicates, the attribute of the entity, a butterfly here, grades along with the property, 'big' here, denoted by the adjective. This is not true for (16b).

(16) a. That is a butterfly, and it is big (for a butterfly).
b. That butterfly is big. (Higginbotham (1985: 563))

Bolinger (1952: 1121) describes this difference between attributive and predicative modifiers as follows. Prenominal modifiers overshadow the whole of the following noun, while postnominal ones 'split' the noun, as diagrammed below.

(17)




(Bolinger (1952: 1121))

This diagram straightforwardly mirrors the scopal effect in question, indicating that it is necessarily obtained by placing the adjective before the noun.

Given all this, it is reasonable to conclude that modifiers, when used to assign an attribute to the noun, must end up preceding the noun no matter where they are base-generated. If it is a stage-level adjective, then it must move from postnominal position to prenominal position and such movement takes places for a scopal reason.

With this conclusion, we return to SPPs, in which participles generated postnominally moves to prenominal position. From a point of view of the above conclusion, such movement in SPPs takes place in order for participles to take a scope over the modified noun. It thus instantiates scope-taking movement, gaining a theoretical ground from the distinction between attributive and predicative modifiers, such movement instantiates.

#### 5.2.3.3. The Loss of Split Participial Phrases

As regards the loss of SPPs, I assume that it is related with the loss of other split constructions such as split genitives.

(18) on tocyme Þæs ecan deman
at arrival the:M.GEN.SG eternal judge:(M)GEN.SG
'at the coming of the eternal judge' (Allen (2008: 98))

SPPs differ from the latter as regards the base-generated position and the direction of movement involved, on the one hand, and they share a common characteristic, information-related movement, with it, on the other hand. SPPs involve raising to the left, while the other heavy shift to the right (Allen (2008: 98)). The common characteristic they share, on the other hand, is that there is no selection relation between elements split around the head noun. In split genitives, as Allen

(2008: 98) suggests, the semantic relation between the head noun of the NP and the genitive phrase was not important. As for SPPs, most, if not all, of the PPs in (3) to (10) qualify as adjuncts, indicating that they are not selected by (the base verbs of) the participles. Given this, we predict that English came to disallow phrases to be split if they don't involve selection relation, which leads to the loss of SPPs.[5]

In this respect, we should note that indeed, in PE, only selection-involving phrases allow elements in them to be spilt out, as discussed in González Escribano (2005).[6]

(19) a. a similar car to mine
b. * a tired woman in the evening (González Escribano (2005: 564-566))

This in fact serves as a semantic constraint on SPPs as well as on other split constructions. It then can be concluded that SPPs were lost because this constraint came to be at work in the history of English.[7] In connection with this constraint, we discuss split adjectival phrases in PE in the following Subsection.

### 5.2.4. A Related Construction: Split Adjectival Phrases in PE

It is possible to construct split adjectival phrases (henceforth, SAPs), but not SPPs, in PE, as exemplified in (20).

(20) a. a famous actress for her *Lady Macbeth*
b. a fat man around the waist
c. a similar car to mine
d. a subsequent article to Chomsky's
e. a brave man to jump into the water
f. a stupid girl to reject such an offer (González Escribano (2005: 566-588))

In (20), The adjectives select the postnominal PPs or the infinitival clauses. In

contrast, in (20), the adjectives do not select the postnominal elements. This is consistent with the arguments given in the preceding Subsection that English came to disallow phrases to be split if they don't involve selection relation and in PE, only selection-involving phrases allow elements in them to be spilt out.

(21) a. * a married woman to a businessman
b. * a satisfied worker with his pay
c. * an extended rumor in the capital
d. * a tired woman in the evenings
e. * a condemned prisoner to shot at dawn
f. * an established company in Japan (González Escribano (2005: 565-596))

Another characteristic of SAPs is that only adjectives describing individual-level, not stage-level, states seem to allow in SAPs. The SAPs given in (20) all describe individual-level states rather than stage-level ones, according to González Escribano (2005). Adjectives describing stage-level states, on the other hand, end up ungrammatical when they are separated from the elements following them, as shown in (22).

(22) a. * a liable person to prosecution
b. * a next person to me
c. * an observant citizen of the law
d. * a thankful neighbor for her attentions
e. * an unaware child of the danger
f. * a due payment in thirty days
g. * a restless child in her seat
h. * a transferable sum in a few days (González Escribano (2005: 565-567))

In what follows, we discuss the derivation of SAPs. On might suggest that they are derived in the way SPPs are. However, they do not have the same derivation; that

is, prenominal adjectives in SAPs are not derived as a result of movement from postnominal position. Here is the reason for this.

In the SPPs we discussed in the preceding Subsection, the prenominal participles seem to have denoted stage-level states or situations. This can be indicated by their occurrence with the postnominal PPs. In contrast, adjectives in SAPs describe individual-level states, as noted above. Note here that individual-level adjectives base-generated in prenominal position, as discussed in the preceding Subsection. Therefore, it is reasonable to assume that the discontinuity of the SAPs in (20) is not derived as a result of movement of the adjectives from postnominal position to prenominal position. They should be considered as base-generated in the surface position.

Here arises a question. How to derive the dependency or the selection relation between the prenominal adjectives and the postnominal elements, if they are not base-generated as consitituents?[8] The following reasoning gives us the answer.

First note that a semantic selection does not necessarily instantiate a syntactic (or categorical) selection; that is, a semantic selection between two elements does not entail them to form constituents. For example, in noun phrases such as *the Paris that I know*, it is clear that there is certain dependency between the determiner and the restrictive relative clause; the prenominal determiner selects the postnominal relative clause, in the sense of Vergnaud (1974) and Kayne (1994). Taking the semantic selection between the determiner and the relative clause, these authors take the determiner as also syntactically selecting the relative CP, forming a constituent. This, however, is hard to be empirically supported for the there does not exist a determiner-relative clause sequence (i.e., *the that I know*) in the first place; that is,

determiners do not category-select CPs. Similarly, in SAPs, the selection between postnominal PPs and prenominal adjectives is a semantic one, not a syntactic one, and so they are not necessarily base-generated as constituents in the underlying structure.

Returning to our earlier question, I thus suggest the following possibility. SAPs such as (23) and those in (20) have the structure in (24a), where the PP is located higher than the adjective.

(23) a strong department in semantics (González Escribano (2005: 566))

(24) a. a [[strong department] in semantics]
b. * a [strong [department] in semantics]
c. * a [strong [department in semantics]]

The structures in (24b, c) are no available for SAPs; (24b) yields a ternary structure; (24c) yields a structure in which the PP forms a constituent with the noun, contra the fact. Let us elaborate the assumption in (24a). Superficially, (24a) does not fit for the semantic relation between the prenominal adjective and the postnominal PP. Here, it must be noted that the surface structure in (24a) has an underlying structure like that in (25).[9]

(25) a. a [[strong department] ~~strong~~ in semantics]
b. There is a strong department. The department's strength is in semantics.

In (25), there is another occurrence of the same adjective immediately preceding the PP. I suggest that in fact it is this occurrence that takes the PP. It is important to note here that the same adjective has two occurrences in the same structure. Here, it is assumed that the lexicon has the adjective and the numeration doubles it. In syntax, the either of them can be pronounced. When the postnominal one is pronounced, the

structure is like (26a).[10]

(26) a. a [department [strong in semantics]]
b. There is a department. The department is strong in semantics.

Noticeably, there is no movement involved in the SAP structure in (25a); the adjective is base-generated prenominaly and the its semantic relation with the postnominal PP is obtained via an unpronounced occurrence of the same adjective.[11]

Now we have a look at how the structure in (25a) is supported by the following fact given in (27a), where the prenominal *possible* induces the reading 'someone that was a possible candidate', suggesting that it is not directly related with the postnominal clause. Its structure in (28) is parallel to the SAP structure in (25a).

(27) a. Mary interviewed every possible possible candidate.
b. Mary interviewed every possible candidate possible. (Larson (2000: 4))

(28) Mary interviewed every possible$_i$ possible candidate $t_i$ for her to interview.
(Larson (2000: 4))

(25a) and (28) differ, on the other hand. The former does not involve movement while the latter does. This is because adjectives in SAPs, such as *strong* does not describe a stage-level state, but an individual-level one, as noted earlier. In contrast, the structure in (28) is associated with an implicit relative reading (Larson (2000: 2ff)). This roughly means that the promoted *possible* is not interpreted as describing an individual-level state but a stage-level one, much as in the case of *visible visible stars*, as discussed in (13).[12]

To sum up, this Subsection, SAPs are available in PE, but their derivation is lot like that of SPPs in Early English. This is because in the former, prenominal adjectives describe individual-level states while in the latter, prenominal participles

describe stage-level states. This asymmetry in turn supports the conclusion in Section 5.2.3 that English came to disallow phrases to be split around the noun, if they do not involve a selection relation.

### 5.2.5. Conclusion

This section has investigated the historical status of SPPs. It was shown that SPPs were introduced in EOE from Latin and extended to non-Latin varieties in LOE and that while there was a tendency of SPPs extending from the South to the Midlands in LOE, they began to decline from EME on and eventually became obsolete. I suggested that their decline is related with the decline of split genitives in the history of English. It was shown that SPPs were derived as a result of movement of the participle from postnominal position to prenominal position, which takes place for scopal reason, instantiating the interaction of SPPs with information structure. It was also shown that they were lost because English came to disallow phrases to be split around the modified noun if they do not involve a selection relation. This appears as a semantic constraint on split constructions in English. In the last Subsection, we discussed SAPs in PE and showed that they have a different structure than that of SPPs in Early English and that the unacceptability of stage-level adjectives in SAPs lends support to the conclusion that English came to disallow split phrases without a selection relation, which leads to the loss of SPPs.

## 5.3. PP-fronting in Postnominal Participial Phrases and Its Loss

### 5.3.1. Introduction

This section discusses a hitherto unnoticed fact that a postnominal participial

phrase could have the participle preceded by a PP as its argument or adjunct until the 18th century in the history of English. Assuming that PPs are base-generated in postverbal position and move to preverbal position after the change of word order from head-final to head-initial in Middle English, I will show that PP-fronting was in fact a device for driving a defocused element (PP, here) out of the end position, thereby allowing a focused element (participle, here) to occupy the position after the fronted PP.

In PE, (verb-internal) PPs are not allowed to precede the verb, unlike adverbs (Jackendoff (1972) among many others).

(29) a. Bill dropped the bananas quickly.
b. Bill dropped the bananas **with a crash**. (Jackendoff (1977: 73))

(30) a. Bill quickly dropped the bananas.
b. * Bill **with a crash** dropped the bananas. (Jackendoff (1977: 73))

Neither does postnominal position allow PPs to precede participles in PE.

(31) a. the bananas dropped quickly
b. the bananas dropped with a crash

(32) a. the bananas dropped with a crash
b. * the bananas with a crash dropped

In Early English, however, it was possible for PPs to precede the verb both in finite and non-finite clauses, as exemplified in (33) and (35). The PE counterpart of (5), which is a finite clause, would be ungrammatical, as shown in (34). The verb in each example is shown bold and the PP in italics; the whole verb phrase is underlined.

(33) and steorren sculen *from heouene* **falle**.
and stars shall from heaven fall

'and stars shall fall from heaven' (CMLAMB1,143.306: M1)

(34) * Stars shall from heaven fall.

(35) … his Majesty, who thought himself *in honour* **obliged**, ...
'… his Majesty, who thought himself obliged in honour, ...'
(RALEIGH-E2-P1,1,226.420: E2)

### 5.3.2. Historical Data: Based on Historical Corpora

This section is devoted to the corpus-based investigation of PP-fronting in postnominal participial phrases. As shown in Tables 5.3 and 5.4, which are based on the historical corpora including YCOE, PPCME2, PPCEME and PPCMBE, which altogether cover the periods from OE to LModE, the rate of PP-V order with present/passive participles in E3 (1640-1710) is still higher than 1%, which I take to be the threshold of grammaticality, following Pintzuk (1999). Some examples are given below each table.

Table 5.3. Frequency of PP-V in postnominal present participial phrases

| | EOE | LOE | EME | LME | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 4 | 26 | 2 | 2 | 10 | 6 | 4 | 1 | 0 | 0 |
| V-PP | 11 | 23 | 24 | 117 | 209 | 193 | 152 | 106 | 137 | 92 |
| PP-V (%) | 26.67 | 53.06 | 7.69 | 1.68 | 4.57 | 3.02 | 2.56 | 0.93 | 0.00 | 0.00 |

(36) a. sculdest thu neure finden man *in tune* **sittende** ... [13]
should you never find man in tune sitting
'you should never find a man sitting in tune' (CMPETERB,56.457: M1)

b. to directe euery man *in this worlde* **lyuynge**.
to direct every man in this world living
'to direct every man living in this world' (CMFITZJA,B4V.182: M4)

c. then any servaunt *to your Grace* **belonging**.
(TUNSTALL-E1-H,1.1,135.7: E1)

d. if there were not a gentleman *in the court* **dwelling**,

(ARMIN-E2-H,43.276: E3)

Table 5.4. Frequency of PP-V in postnominal past participial phrases

| | EOE | LOE | EME | LME | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 75 | 79 | 11 | 21 | 51 | 25 | 18 | 4 | 3 | 1 |
| V-PP | 41 | 27 | 85 | 372 | 594 | 563 | 580 | 440 | 429 | 384 |
| PP-V (%) | 64.66 | 74.53 | 11.46 | 5.34 | 7.91 | 4.25 | 3.01 | 0.90 | 0.70 | 0.26 |

(37) a. This kyng Lucie hade none heire *of his body* **bigeten**,
this king Lucy had no hair of his body begot
'This king Lucie had no hair that grew on his body'
(CMBRUT3,38.1180: M3)

b. he sauyd the people *to him* **co~mytted** from enmyes & from peryll.
he saved the people to him committed from enemies and from danger
'he saved the people committed to him from enemies and danger'
(CMFITZJA,A3V.41: M4)

c. theise are y=e= heddes *in this Paper* **inclosed**. (RCECIL-E2-P2,271.13: E2)

d. at the dedication of a Church *by them* **built** at Assendune,
(MILTON-E3-H,X,277.169: E3)

Importantly, the attested examples of PP-V order in each sub-period are not restricted to a particular text or a genre, showing rather even distribution. But as for Modern English, the legal texts in PPCEME and PPCMBE, which are all classified as 'STATUTES' and comprise less than 8% of the total number of words in the two corpora, show much higher proportion of PP-V than the other genres, until the very end of Late Modern English. Given this significant difference between legal texts and the others, examples from legal texts in Modern English are not counted in the tables above.[14]

### 5.3.3. Analysis

Having shown the result of the corpus-based investigation in the previous section, this section presents an analysis of why PP-fronting was available until the 18th century but became unavailable from then on. With the assumption that PPs came to be base-generated in postverbal position after the basic word order changed from head-final to head-initial in early ME, the occurrence of a PP in preverbal position should be considered as the result of the movement over the participle. Then, a question arises why it moves. That is, what is the motivation for PP-fronting? This question will be discussed in Section 3.1.

#### 5.3.3.1. The Motivation for PP-fronting

Given that Early English had a stronger tendency to use word order to mark focus (cf. Bech (2001), Fischer (2001), Pintzuk and Taylor (2011) and Chigchi (2016a) for related discussion), PP-fronting can be considered as a device for defocalization; that is, when defocalized, the PP moves out of the end position, thereby allowing the participle, a focused element, to occupy the position after the fronted PP.

In the Italian sentence in (38), the object NP is focused and needs to occupy the focus position, the end of the sentence. Zubizarreta (1998) argues that the PP is forced to leave its base-generated position so as to have the object NP occupy the surface end position. In the Spanish sentence given in (39), the pronominal object is also defocalized and has moved away from its original position.

(38) a. *María ha messo il libro sul tavolo.
María has put the book on the table.
b. María ha messo [sul tavolo]$_i$ il libro $t_i$.
(Akabane (2014: 139), cited from Zubizarreta (1998))

(39) María lo compro.
María it bought.
'María bought it.' (cf. Akabane (2014: 147))

Object defocalization also occurs in Hebrew, as discussed in Netz (2016). Another construction that can be an instance of defocalization is English locative inversion. As noted by Bresnan (1994), Kim (2003) and many others, English locative inversion has a special discourse function of presentational focus. This amounts to saying that the inverted subject is focused, and is required to occur in the end position of the clause, and this is accomplished by moving the PP to sentence-initial position, hence defocalization effect.

Chomsky (2001) notes that optional movement must have an interpretive effect. As a case of optional movement, PP-fronting would also take place with an interpretive effect. I presume here that the interpretive effect in the case of PP-fronting is defocalization. This is consistent with Bech's (2001) observation given in (40), which suggests that in Old English and Middle English, a low-information element, usually an adverbial, tends to precede the verb, which carries relatively high-valued information.

(40) In SXV, X is a low-information element.
(S=Subject; X=adverbial; V=Verbal) (cf. Bech (2001: 170ff.))

Taking all this into consideration, I argue that in PP-fronting, the information value of the PP is lower than that of the participle, and so-called "defocalization" is actually a manifestation of this information-related fact.

#### 5.3.3.2. The Derivation of PP-fronting

Given that PP-fronting was a device for defocusing with the effect of focalizing an

element in the end position, it is plausible to assume that its landing site is the specifier of a functional projection in the left periphery. In order to elaborate this approach, we start from an overview of observations and arguments made recently regarding the parallelism between the left peripheries in the CP and vP domains. Based on evidence from the relative word order of objects and adverbs, Jayaseelan (2001) observes that TopP and FocP are located in the left periphery of vP. With this observation, he argues that scrambling in Modern German is in fact an operation whereby an object with specific interpretation moves to the Spec of TopP in the vP domain. On the other hand, a focalized object, which receives non-specific interpretation, moves to the Spec of FocP. Walkden (2014), based on his observations of Old Saxon and Old English regarding the information status of postverbal objects, argues for the existence of TopP/FocP in the low left periphery in Germanic languages. Partially following Wallenberg (2009), who examines the syntactic derivation of heavy NP shift in Germanic languages, Walkden claims that a focalized element moves to the Spec of FocP, followed by remnant movement of the defocused element(s) to the Spec of TopP. Tanaka (2015, 2017) argues that definite objects in Old English move to a position between a subject and a discourse/temporal adverb which is located above vP, while indefinite objects move to a position lower than this type of adverb, suggesting that object movement involves topicalization or focalization depending on the kinds of object.

Returning to the question of PP-fronting, I assume that the landing site of the fronted PP is the Spec of TopP in the left periphery of vP, as schematized in (41). The fronted PP is not necessarily interpreted as a topic but it is reasonable to consider that the Spec of TopP can be the landing site of either a defocused element or a

topicalized one, in that both are elements with low-information in the sense of Bech (2001).[15]

(41) [$_{DP}$ … N … [$_{TopP}$ PP$_i$ [$_{vP}$ V $t_i$]]] (adapted from Chigchi (2017: 13))

This structure survived as long as the requirement that a focused element occupy end position was operative. This requirement, however, was eventually lost, as evidenced by Chigchi's (2016) observation of the loss of light NP shift, i.e. rightward movement of phonologically light but information-structurally focused objects to the end position, as exemplified in (42). Chigchi (2016a) observes that English lost light NP shift in the 18th century, which is related to the loss of the requirement mentioned above.

(42) a. he brouȝt *wiþ him* peple
he brought with him people
'he brought people with him' (CMBRUT3,88.2667: M3)
b. In the moneth of Aprill, the Cleargie granted *vnto the King* a tenth.
(STOW-E2-P1,557.137: E2)

As this requirement was lost, it would become unnecessary for PPs to move away from the end position, because the participle can now be focalized without PP-fronting, as schematized in (43), leading to the loss of PP-V order in postnominal participial phrases.[16]

(43) [$_{DP}$ … N … [$_{vP}$ V PP]] (adapted from Chigchi (2017: 13))

Another passible reason why PP-fronting was lost could be that there was a structural change in postnominal participial phrases, which led to the loss of PP-fronting; for example, PredP structure came to be available in English sometime

after OE and in postnominal participial clauses, the participle came to occupy the head Pred$^0$ in the surface after it undergoes head movement from v$^0$/V to Pred$^0$.[17]

However, as far as PredP is concerned, such an assumption turns out implausible because, as discussed in Section 3.2.2, Pred$^0$ has a lexical realization, *as*, in postnominal reduced relatives. If we assume that the participle moves to Pred$^0$, the usage of *as* as a relative marker, namely a lexical realization of Pred$^0$ would have not been developed because the participle and *as* compete for Pred$^0$. Since we today have *as* as the occupier of Pred$^0$, as it is, it is not reasonable to assume that the participle can also occupy it.

To summarize the discussion in this subsection, PP-fronting was available as a device for defocalization. Its loss was due to the fact that English lost the requirement that a focused element occur in the end position. For more detailed discussion, see Section 5.4.3.

### 5.3.4. Consequences

The present investigation and analysis have two important consequences. First, the presence of PP-fronting indicates that head-final phenomena were available until the 18th century, far beyond the loss of basic OV order in Middle English, with their loss marking the end of head-finality in the history of English. As noted by Moerenhout and Wurff (2005) and Pintzuk and Taylor (2006), OV order was lost for ordinary objects in the 14th century and for quantified/negative objects in the 16th century. While the loss of OV order has been considered to mark the end of head-final order in English, the change from head-final to head-initial as regards verbs and PPs has received little attention. The facts presented in this section indeed shows that it is PP-V order that was the last vestige of head finality in English.

Second, English has undergone a change in the functional structure of vP; that is, the left periphery of vP had a projection of Top at least until the 18th century, which will be elaborated below in connection with object movement in the history of English.

The literature on the English language has focused on the richness of the left periphery of the CP domain since Rizzi (1997) from both synchronic and diachronic perspectives. As observed by a number of recent studies, however, there is structural parallelism between the left peripheries of CP and vP cross-linguistically. As mentioned in Section 5.3, this observation has begun to be advanced for Early English by authors such as Walkden (2014) and Tanaka (2017).

The investigation in Tanaka (2017), which is based on the same corpora employed in this section, indicates that Early English showed a tendency that quantified/negative objects follow discourse or temporal adverbs while positive objects precede them in cases in which objects move to a position between the auxiliary and the verb. Given that quantified/negative objects are subject to focalization while positive objects do not, Tanaka (2017) proposes that the former could move to the specifier of FocP and the latter to the specifier of TopP, with both FocP and TopP taken as functional projections in the left periphery of vP. Tanaka (2017) also suggests that the loss of object movement could indicate that such functional structure involving TopP and FocP in the vP domain became unavailable and Present-day English sentences do not involve these projections. In the case of PP-fronting, it is reasonable to say that postnominal participial phrases lost such structure in the 18th century, as can be evidenced by the data given in Section 5.3.

### 5.3.5. Conclusion

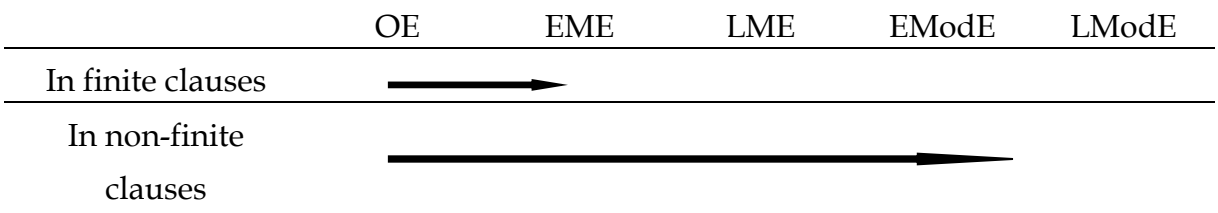
This section has presented the fact that postnominal participial phrases could have the participle preceded by a PP until the 18th century in the history of English. It was argued that PP-fronting was a device for defocalizing the PP and driving it out of the end position. The landing site was argued to be the specifier of TopP in the left periphery of vP in the sense that the fronted PP could be an element with low-information. When the English language lost the requirement the a focused element be located in the end position, PP-fronting ceased to be available. The investigation and analysis made in this section led to two important consequences: the end mark of head-finality of the English language is not the loss of OV order but the loss of PP-fronting, and the language underwent a structural change in the left periphery of vP, with a final straightening in the 18th century.

## 5.4. PP-fronting in Finite Clauses *vs*. Non-finite Participial Clauses

### 5.4.1. Introduction

This section discusses the difference between finite and non-finite participial clauses regarding PP-fronting, on the one hand, and object-movement, on the other hand. The corpus investigation will show that in finite clauses, PP-V order was available until EME while in non-finite clauses, it was available until EModE, as summarized below.

Figure 5.1. Historical status of PP-fronting



Section 5.4.2 presents the historical status of PP-fronting both in finite clauses and non-finite participial clauses. Section 5.4.3, aiming to clarify how PP-fronting is derived, provides a unified account of OV order and PP-V order in finite clauses, on the one hand, and shows the distinct structure of PP-fronting in finite and non-finite participial clauses. Section 5.4.4 discusses leftward movement such as PP-fronting in terms of information status. Section 5.4.5 discusses the loss of PP-fronting in non-finite participial clauses. Section 5.4.6 concludes this section.

### 5.4.2. Historical Data: Based on Historical Corpora

The corpus investigation here excludes OE texts and ME texts whose composition date is unclear. For Modern English, Statutes in PPCEME and PPCMBE are excluded because of the significantly higher frequency of PP-V order in those texts. Verses by Stevenson and Udall in EModE1 are also excluded in order to preclude the possibility of prosodic factor.

(44) a. Texts of OE (18.19%) and ME (5.86%) the composition date of which is unclear;
b. Statutes in EModE (8.55%) and LModE (6.93%);
c. Verses by Stevenson and Udall in EModE1 (5.73%).

#### 5.4.2.1. PP-fronting in Finite Clauses

As observed in the literature (Quirk et al (1985)), PPs seldom occur in the medial position in sentences in PE. See the table below.

Table 5.5. Distribution of PPs in the survey of English usage

| | Initial % | Medial % | Final % | Total number |
|---|---|---|---|---|
| Spoken | 6 | 1 | 93 | 2063 |
| Written | 12 | 3 | 85 | 2351 |
| Average | 9.5 | 2.5 | 88 | 4456 |

(adapted from Quirk et al (1985: 501))

Table 5.6 shows the distribution of PPs in Early English in parallel with Table 5.5.

Table 5.6. Rate of Aux-PP-V *vs.* Aux-V-PP (V = VB, VBN, VAG)[18]

| | O12 | O34 | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 1171 | 1355 | 234 | 43 | 134 | 53 | 193 | 164 | 195 | 111 | 67 | 60 |
| V-PP | 2071 | 2553 | 642 | 953 | 2547 | 1373 | 2846 | 3966 | 3121 | 2340 | 1766 | 1512 |
| Total | 3242 | 3908 | 876 | 996 | 2681 | 1426 | 3039 | 4130 | 3316 | 2451 | 1833 | 1572 |
| PP-V% | 36.12 | 34.67 | 26.71 | 4.32 | 5.00 | 3.72 | 6.35 | 3.97 | 5.88 | 4.53 | 3.66 | 3.82 |

As shown in Table 5.5, there was an abrupt decline of PP-V order in M2. From then on, there has been no significant fluctuation in word order, with the rate of PP-V order relatively stable between 3.66% in L2 and 5.88% in E3. This is consistence with the percentage, 2.5%, of sentence medial PPs in PE, as shown in Table 5.5.

In Table 5.6, for the sake of accuracy, certain types of PP such as negated/quantified PPs and clause-containing PPs are excluded from the investigation. Negated/quantified PPs, exemplified in (45a, b) and (46a), are excluded for the reason that movement of them and ordinary PPs, exemplified in (3b), are likely to be triggered by different factors (cf. Clercq et al. (2012), Huddleston and Pullum (2002: 814)).[19]

(45) a. The police had at no time talked to any of the witnesses.
b. In any case it is by no means clear that formally structured organs of participation are what is called for at all. (Clercq et al. (2012: 8-9))

(46) a. John has on many occasions voted for Republicans.
b. John was carefully/*with care slicing the bagels.
(McCawley (1988: 206, fn. 23))

Clause-containing PPs, exemplified in (47), are excluded because they, being

structurally more complex and phonologically heavier than ordinary PPs, are not usually fronted; when they are fronted, it is likely that they do not act as adjuncts but as disjuncts.

(47) a. Lamar's aunt, who, after losing two sons to gang violence, refuses to talk to police about … (COCA [MAG: 2014])

b. He, as you know, went out and found sponsors.
(COCA [SPOK: 2010])

The investigation in Table 5.6, however, does not exclude sentences like (48a, b).

(48) The strength and charm of his narratives have in the past relied to a considerable extent on the first person presence of Lewis himself.
(Haegeman (2002))

Because such sentences containing two or more PPs are still productive in PE, we need to focus on sentences containing only one PP, for the sake of accuracy and to avoid effects that would arise due to parsing.[20] In what follows, we look at the historical status of clauses containing only one PP. Similarly, negated/quantified PPs and clause-containing PPs are excluded. Additionally, in order to eliminate the effect that would be caused by verb movement, only clauses with auxiliaries are examined and in order to eliminate the effect caused by parsing factor with two or more PPs, only clauses containing a single PP are investigated; that is, sentences like (48) are all excluded. Lastly, in order to eliminate the effect that would be caused by end weight, the investigation only examines two types of predicates: 1) predicates with one verb and one PP, i.e. intransitive predicates (Table 5.7) and passive predicates (Table 5.8); 2) predicates with one verb, a single one-word object and one PP (Tables 5.9 and 5.10). Tables 5.7-5.10 show the rate of PP-V order in each type of clause, with some

example given below each table.

As shown in Table 5.7 below, PP-V order began to decline abruptly in M2 in intransitives. This result is consistent with the one obtained from the investigation summarized in Table 5.6.

Table 5.7. Rate of Aux-PP-V *vs.* Aux-V-PP (V = VB, VBN, VAG)

| | O12 | O34 | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 206 | 240 | 23 | 8 | 11 | 1 | 7 | 1 | 0 | 2 | 0 | 2 |
| V-PP | 401 | 345 | 76 | 237 | 509 | 296 | 429 | 617 | 407 | 306 | 226 | 204 |
| Total | 607 | 585 | 99 | 245 | 520 | 297 | 436 | 618 | 407 | 308 | 226 | 206 |
| PP-V% | 33.94 | 41.03 | 23.23 | 3.27 | 2.12 | 0.34 | 1.61 | 0.16 | 0.00 | 0.65 | 0.00 | 0.97 |

(49) a. …, Þe mihte *wið God* **sprecan**,
that might with God speak
'…, who might speak to God' (coaelhom, ÆHom_23:87.3747: O3)

b. but for al Þing $he wolde wiÞ him feiʒt.
but for all thing she would with him fight
'but for all thing, she would fight with him' (CMBRUT3,102.3077: M3)

c. this shal on me depend (STEVENSO-E1-H,67.520)

Now let us have a look at passive clauses. Similarly, PP-V order underwent an abrupt decline in M2.

Table 5.8. Rate of PP-V *vs.* V-PP in finite passive clauses (V = VAN) [21]

| | O12 | O34 | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | | | 131 | 6 | 12 | 9 | 33 | 16 | 8 | 7 | 5 | 2 |
| V-PP | | | 265 | 501 | 1647 | 934 | 1374 | 1557 | 1489 | 1131 | 785 | 647 |
| Total | | | 396 | 507 | 1659 | 943 | 1407 | 1573 | 1497 | 1138 | 790 | 649 |
| PP-V% | | | 33.08 | 1.18 | 0.72 | 0.95 | **2.35** | **1.02** | 0.53 | 0.62 | 0.63 | 0.31 |

(50) a. … may never be *fra hym* **departyd**.
may never be from him departed
'… may never be departed from him' (CMROLLEP,113.873:

M3)

b. I truste that shee shall bee *with reason* **contented**, and ...
(MORERIC-E1-P1,28.72)

c. This paper will not hold all the inconveniencies I lay under before I came up to London, which now are *in a great* **Measure abated.**
(HOXINDEN-1660-E3-H,292.214)

The next is transitive clauses with a one-word object. As shown in Table 6, such transitive clauses are slightly different than passive clauses in that PP-V order began to decline in M1 for transitive clauses and in M2 for passive ones. Of interest is the fact that the decline of PP-V order in such transitive clauses was relatively less abrupt, in comparison to that in passive clauses. From M2 onward, the rate has been relatively stable, consistent with the observations in Tables 5.6-5.8.

Table 5.9. Rate of Aux-PP-(O)-V-O *vs.* Aux-(O)-V-O-PP (V = VB, VBN, VAG; O#1)

| | O12 | O34 | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 12 | 13 | 8 | 3 | 9 | 0 | 9 | 3 | 6 | 5 | 0 | 1 |
| V-PP | 32 | 45 | 104 | 144 | 382 | 216 | 251 | 450 | 372 | 233 | 147 | 126 |
| Total | 44 | 58 | 112 | 147 | 391 | 216 | 260 | 453 | 378 | 238 | 147 | 127 |
| PP-V% | 27.27 | 22.41 | 7.14 | 2.04 | 2.30 | 0.00 | 3.46 | 0.66 | 1.59 | 2.10 | 0.00 | 0.79 |

(51) a. … wolden *mid here gode wille* hit **behaten**.
would with her good will it hate
'… would hate it with her good will' (CMVICES1,129.1606: M1)

b. That he should *before nyne of the clock the same morning* **suffer** death;
(ROPER-E1-P2,100.129)

c. … to that Man who can *with Equanimity and Courage* **bear** it.
(BOETHPR-E3-P1,61.388)

The last one is transitive clauses with a two-word object. The situation here is much similar to the preceding ones in Tables 5.6-5.9.

Table 5.10. Rate of Aux-PP-(O)-V-O *vs.* Aux-(O)-V-O-PP (V = VB; O#2)

| | O12 | O34 | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 21 | 19 | 21 | 3 | 10 | 3 | 4 | 7 | 8 | 1 | 3 | 5 |
| V-PP | 59 | 77 | 44 | 83 | 172 | 97 | 173 | 247 | 211 | 155 | 116 | 106 |
| Total | 80 | 96 | 65 | 86 | 182 | 100 | 177 | 254 | 219 | 156 | 119 | 111 |
| PP-V% | 26.25 | 19.79 | 32.31 | 3.49 | 5.49 | 3.00 | 2.26 | 2.76 | 3.65 | 0.64 | 2.52 | 4.50 |

(52) a. 'I woll nat departe tyll I have *on thys erth* – **made** a towmbe.'
I will not depart till I have on this earth made a tomb
'I will not depart until I have made a tomb on the earth'
(CMMALORY,53.1775: M4)

b. Those thinges that only haue life, doo they not euer *by a naturall instinct* **desyre** their own? (BOETHEL-E2-H,67.214)

c. and that when he has *after three or four years* **emptyed** the pond,
(WALTON-E3-H,294.255)

To sum up this section, in finite clauses, PP-V order was available in a much high frequency until M2; there was an abrupt decline in M2. From then on, the rate of PP-V order has had no significant fluctuation until PE.

#### 5.4.2.2. PP-fronting in Non-finite Participial Clauses

Unlike the case of finite clauses, in non-finite clauses PP-V order is observed until ModE. This is quite interesting when we consider the fact that PE basically does not allow PP-V order in non-finite participial clauses. Now we will consider PP-V order in several contexts such as participial clauses (clausal adjuncts) with and without subjects, small clauses and postnominal modifiers. See also Section 5.3 for detailed discussion of postnominal participial phrases.

Table 5.11 shows that PP-V order began to be attested in participial clauses with subjects (absolute adjuncts) since E1. A significant increase, however, is observed throughout EModE. In L2, PP-V was lost. OE did not have such pattern because

participial constructions, except postnominal ones, emerged after OE.

Table 5.11. Rate of PP-V *vs.* V-PP in participial clauses with subjects (V = VAN)

| | O12 | O34 | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 1 | 7 | 1 | 0 | 0 |
| V-PP | 0 | 0 | 1 | 0 | 3 | 7 | 49 | 26 | 64 | 28 | 27 | 12 |
| Total | 0 | 0 | 1 | 0 | 3 | 7 | 58 | 27 | 71 | 29 | 27 | 12 |
| PP-V% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 15.52 | 3.70 | 9.86 | 3.45 | 0.00 | 0.00 |

(53) a. And that enterement *with due obseruaunce* **fynysshed**, auctoryte was geue~ vnto. (FABYAN-E1-P1,560.96)

b. Our bounden dutie *in most humble wise* **remembred**.
(TRINCOLL-E2-H,2.3,33.4)

Table 5.12 shows that in participial clauses without subjects (free adjuncts), PP-V order was first attested in M1 and underwent a decline. Its frequency was much higher than 1%, which I take to be the threshold of grammaticality, following Pintzuk (1990), until E3. This roughly shows the same tendency as the case of participial clauses with subjects.

Table 5.12. Rate of PP-V *vs.* V-PP in participial clauses without subjects (V = VAN)

| | O12 | O34 | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 0 | 0 | 10 | 2 | 2 | 2 | 8 | 10 | [10] | 1 | 2 | 2 |
| V-PP | 0 | 0 | 11 | 14 | 46 | 55 | 152 | 139 | 206 | 171 | 203 | 127 |
| Total | 0 | 0 | 21 | 16 | 48 | 57 | 160 | 149 | 216 | 172 | 205 | 129 |
| PP-V(%) | 0.00 | 0.00 | 47.62 | 12.50 | 4.17 | 3.51 | 5.00 | 6.71 | 4.63 | 0.58 | 0.98 | 1.55 |

(54) a. Kenwalk *by this time* **reinstall'd** in his Kingdom, kept it long, …
(MILTON-E3-P1,X,164.136)

b. and *by them* **conueyed** vnto hyr father into Fraunce and …
(FABYAN-E1-H,170R.C1.83)

In the case of small clauses, the distribution of PP-V is quite similar to that in the

case of participial clauses with subjects, as shown in Table 5.13 below.

Table 5.13. Rate of PP-V *vs.* V-PP in small clauses (V = VAN)

| | O12 | O34 | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 0 | 0 | 2 | 0 | 0 | 0 | 13 | 4 | 4 | 5 | 0 | 0 |
| V-PP | 0 | 0 | 5 | 16 | 30 | 17 | 106 | 147 | 175 | 133 | 88 | 56 |
| Total | 0 | 0 | 7 | 16 | 30 | 17 | 119 | 151 | 179 | 138 | 88 | 56 |
| PP-V(%) | 0.00 | 0.00 | 28.57 | 0.00 | 0.00 | 0.00 | 10.92 | 2.65 | 2.23 | 3.62 | 0.00 | 0.00 |

(55) a. And also after the victory *by them* **opteyned**, to shewe vnto …

(FABYAN-E1-P2,580.166)

b. The poore maiden seeing her selfe *for her kindnesse* thus **cast off**, shed …

(DELONEY-E2-H,83.426)

Things come a bit different when we consider PP-V order in participial phrases such as postnominal modifiers. As we have seen earlier in Section 5.3, PP-V was available since EOE with a high frequency. What is important here is that the period when PP-V order in postnominal modifiers was lost is L1, roughly consistent with other participial clauses discussed above.

Table 5.14. Rate PP-V *vs.* V-PP in postnominal passive participial phrases

| | EOE | LOE | EME | LME | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 75 | 79 | 11 | 21 | 51 | 25 | 18 | 4 | 3 | 1 |
| V-PP | 41 | 27 | 85 | 372 | 594 | 563 | 580 | 440 | 429 | 384 |
| Total | 116 | 102 | 96 | 393 | 645 | 588 | 598 | 444 | 432 | 385 |
| PP-V (%) | 64.66 | 74.53 | 11.46 | 5.34 | 7.91 | 4.25 | 3.01 | 0.90 | 0.70 | 0.26 |

(56) a. By this ye may se that he that wyll lerne no good by example nor good maner *to hym* **shewyd** is worthy to be taught with open rebukes.

(MERRYTAL-E1-P2,60.16)

b. at the dedication of a Church *by them* **built** at Assendune, …

(MILTON-E3-H,X,277.169)

As seen in Table 5.15, we get a similar result when we examine PP-V order in present participial clauses without subjects.

Table 5.15. Rate of PP-V *vs.* V-PP in participial clauses without subjects (V = VAG, HAG, BAG)

| | O12 | O34 | M1 | M2 | M3 | M4 | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 0 | 0 | 2 | 6 | 4 | 8 | 31 | 19 | <33> | 14 | 10 | 5 |
| V-PP | 0 | 0 | 24 | 97 | 236 | 305 | 955 | 1367 | 1450 | 1173 | 909 | 719 |
| Total | 0 | 0 | 26 | 103 | 240 | 313 | 986 | 1386 | 1483 | 1187 | 919 | 724 |
| PP-V % | 0.00 | 0.00 | 7.69 | 5.83 | 1.67 | 2.56 | 3.14 | 1.37 | 2.23 | 1.18 | 1.09 | 0.68 |

(57) a. *Of this* **herynge** the duke of Burgoyne, anon gatheryd vnto hym …
(FABYAN-E1-P1,562.117)

b. and *after Dinner* **talking** with me, he brake more earnestly for me …
(THOWARD2-E2-P1,1,94.432)

Table 5.16 shows that postnominal present participial phrases basically show the same tendency as the case of postnominal past participial phrases, though their frequency is not that high.

Table 5.16. Frequency of PP-V *vs.* V-PP in postnominal present participial phrases

| | EOE | LOE | EME | LME | E1 | E2 | E3 | L1 | L2 | L3 |
|---|---|---|---|---|---|---|---|---|---|---|
| PP-V | 4 | 26 | 2 | 2 | 10 | 6 | 4 | 1 | 0 | 0 |
| V-PP | 11 | 23 | 24 | 117 | 209 | 193 | 152 | 106 | 137 | 92 |
| Total | 15 | 49 | 26 | 119 | 219 | 199 | 156 | 107 | 137 | 92 |
| PP-V % | 26.67 | 53.06 | 7.69 | 1.68 | 4.57 | 3.02 | 2.56 | 0.93 | 0.00 | 0.00 |

(58) a. … or justices of any other shire *next to you uppon any side* **adjoyninge** shall ... (HENRY-1520-E1-P1,34,H.9)

b. and demands if there were not a gentleman *in the court* **dwelling**, called by the name of M. Will Sommers? (ARMIN-E2-H,43.276)

In this subsection, we investigated the historical status of PP-V order in non-finite

participial clauses. As the corpus data shows, PP-V order was available until around 1700. All types of non-finite clauses show similar tendencies with respect to the time when PP-V was lost. In this respect, non-finite participial clauses make a sharp contrast with finite clauses, in which, PP-V order was lost in M2, as seen in the previous subsection. In Section 5.4.2, we analyze the derivation and structure of both finite and non-finite clauses with PP-V order and explain their difference as mentioned above.

### 5.4.3. Analysis

#### 5.4.3.1. Parallelism with Object Movement

It is well-known that English has undergone word order change from head-final to head-initial and the relative order of objects and verbs has been widely discussed in this respect. As noted by Moerenhout and Wurff (2005) and Tanaka (2014), object-verb (OV) order was lost for ordinary objects in the 14th century and for quantified/negative objects in the 16th century. While the loss of OV order has been considered to mark the end of head-final order in English, the change from head-final to head-initial as regards verbs and PPs has received little attention. On the basis of the investigation given in Section 5.4.1, this subsection shows that it is PP-V order that was the last vestige of head finality in English.

Let us first have a brief look at the status of OV order in the history of English. Pintzuk and Taylor (2006) and Tanaka (2014) discuss the distribution of the objects in OV clauses. As shown in Table 5.17, OV order was lost in M2 for ordinary (positive) objects, in M3 for quantified objects and in E1 for negative objects.

Table 5.17. Rate of OV order in finite clauses with auxiliaries

| | EOE | LOE | M1 | M2 | M3 | M4 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|
| Positive | 56.7% | 50.4% | 28.4% | 3.1% | 1.3% | 0.7% | 0.9% | 0.2% | 0.03% |
| Quantified | 63.5% | 56.4% | 34.7% | 10.6% | 6.0% | 6.1% | 2.3% | 0.4% | 0% |
| Negative | 91.8% | 78.3% | 41.0% | 18.2% | 20.3% | 22.0% | 3.8% | 0.6% | 0% |

(Tanaka (2014: 256))

Tanaka (2015, 2017) explains this asymmetry among the three types of object in terms of their scope-discourse properties, arguing that they are located in the domains of different discourse-related functional projections in the left periphery of vP. As evidence for his argument, he observes that positive objects were able to precede discourse and temporal adverbs in post-auxiliary positions. This suffices to show that objects in OV clauses in OE indeed had discourse-related properties such as topicality or given/old information.

Table 5.18. Relative order of positive objects and adverbs (Aux-O-Adv-V)

| | | O2 | O3 |
|---|---|---|---|
| Discourse adverbs | Object-adverb | 3 (7.3%) | 3 (9.4%) |
| | Adverb-object | 38 | 29 |
| Temporal adverbs | Object-adverb | 7 (16.7%) | 12 (27.9%) |
| | Adverb-object | 35 | 31 |
| Others | Object-adverb | 56 (43.4%) | 53 (43.4%) |
| | Adverb-object | 73 | 69 |
| Total | Object-adverb | 66 (31.1%) | 68 (34.5%) |
| | Adverb-object | 146 | 129 |

(Tanaka (2015: 77))

Of interest is the fact that a similar distribution is also observed in PP-V clauses in OE. Table 5.19 shows this.

Table 5.19. Relative order of PPs and adverbs (Aux-PP-Adv-V)

| | | O12 | O34 |
|---|---|---|---|
| Discourse adverbs | PP-adverb | 1 (5.00%) | 1 (5.00%) |
| | Adverb-PP | 19 | 19 |
| Temporal adverbs | PP-adverb | 15 (11.63%) | 21 (17.36%) |
| | Adverb-PP | 114 | 100 |
| Others | PP-adverb | 63 (38.18%) | 73 (46.79%) |
| | Adverb-PP | 102 | 83 |
| Total | PP-adverb | 79 (25.16%) | 95 (31.19%) |
| | Adverb-PP | 235 | 202 |

(59) And ure ælc mæg *be woruldlican þingan* eac georne
and our each may in normal thing also eagerly
**gecnawan** þæt gyf hwa hæfð his hlaforde sare abolgen,…
know that if who has his lord severely angered
'And each of us may also, as normal, eagerly want to know who has offended his lord' (cowulf,WHom_15:58.1341: O3)

As seen in Tables 5.16 and 5.17, the distributions of finite clauses with auxiliaries are quite similar for PP-Adv-V order and O-Adv-V order. This suggests that PPs in PP-V clauses in OE also had discourse-related properties such as topicality or given/old information.[22]

In Tables 15 and 16, we observe that objects and PPs in head(aux)-initial clauses in OE are similar with respect to their distribution. The same is true of head(aux)-final clauses, as shown in Tables 5.20 and 5.21.

Table 5.20. Relative order of positive objects and adverbs (O-Adv-V-Aux)

| | | O2 | O3 |
|---|---|---|---|
| Discourse adverbs | Object-adverb | 3 (4.2%) | 2 (28.6%) |
| | Adverb-object | 69 | 5 |
| Temporal adverbs | Object-adverb | 7 (43.8%) | 6 (50.0%) |
| | Adverb-object | 9 | 6 |
| Others | Object-adverb | 35 (64.8%) | 15 (62.5%) |
| | Adverb-object | 19 | 9 |
| Total | Object-adverb | 45 (31.7%) | 23 (53.5%) |
| | Adverb-object | 97 | 20 |

(Tanaka (2015: 77))

Table 5.21. Relative order of PPs and adverbs (PP-Adv-V-Aux)

| | | O12 | O34 |
|---|---|---|---|
| Discourse adverbs | PP-adverb | 0 (0.00%) | 0 (0.00%) |
| | Adverb-PP | 8 | 1 |
| Temporal adverbs | PP-adverb | 11 (12.79) | 9 (20.93) |
| | Adverb-PP | 75 | 34 |
| Others | PP-adverb | 25 (35.21) | 13 (38.24) |
| | Adverb-PP | 46 | 21 |
| Total | PP-adverb | 36 (21.82%) | 22 (28.21%) |
| | Adverb-PP | 129 | 56 |

(60) Ond he *for his hælo* eft Dryhtne þonc **secgende wæs** …
and he for his safty then Drihtne thought unspeakable was
'And he then did not tell what he thought to Host for his safety '
(cobede,Bede_4:32.380.17.3797: O2)

To sum up, PP fronting (PP-V) and object movement (OV) in finite clauses both ceased in EME. In Section 5.4.2.2, I present a unified account, arguing that they two had the same derivation.

#### 5.4.3.2. A Unified Account of PP-fronting and Object Movement[23]

In this subsection, we discuss OV and PP-V in finite clauses in the history of English from a theoretical perspective.

Following Moerenhout and Wurff (2005), I assume that English was head-initial after the loss of positive object movement in ME and OV order was derived via leftward movement of objects. Similarly, VP-internal PPs preceding verbs are also assumed to have moved from their base-generated postverbal position. Following Chomsky's (2001) view that optional movement is semantically motivated, it is plausible to say that interpretive effects such as topicalization/old information and defocalization would arise with the optional movement of ordinary positive objects, and also with PP-fronting.

As for the landing site of the leftward movement, the Spec of some functional category above vP is available. Following Jayaseelan (2001) and Tanaka (2015), who advocate information structure for a fronted element in the post-subject position, I assume two functional categories, i.e. TopP and FocP, above vP in Early English.

(61) Position of objects in OV:
$[_{TP}$ S $[_{T'}$ Aux $[_{TopP}$ $O_i$ $Top^0$ Adv $[_{FocP}$ $Foc^0$ $[_{vP}$ $v^0$ … $t_i$

(62) Position of objects in PP-V:
$[_{TP}$ S $[_{T'}$ Aux $[_{TopP}$ $PP_i$ $Top^0$ Adv $[_{FocP}$ $Foc^0$ $[_{vP}$ $v^0$ … $t_i$

In (61) and (62), O and PP are base-generated within vP and move to the Spec of TopP, yielding OV and PP-V orders. I argue here that optional movement is triggered by interpretive effect on the one hand, and is constrained by syntactic factors on the other hand. Following Tanaka (2015), I assume that object movement proceeds under the cyclic linearization approach, which was advocated by Fox and Pesetsky (2005). The cyclic linearization approach claims that only the set of

linearization information that does not cause an ordering contradiction gives rise to a well-formed derivation. In (63), the object, which is base-generated as preceding the verb, moves out of the first phase, vP, into the second phase, CP.[24] Throughout the derivation, linearization information with OV order is maintained across the two phases. This accounts for why OV was available only until ME for positive objects, up to which the language was head-final (Pintzuk (1999)) but not afterwards.

(63) Derivation of OV (OE~EME):

a. Phase 1: $[_{vP}$ v $[_{VP}$ O V ]] (O < V)

b. Phase 2: $[_{CP}$ … $O_i$ … $[_{vP}$ v $[_{VP}$ $t_i$ V ]]] (O < V)

After head-finality was lost in ME, (positive) object movement came to be not allowed because it would cause an ordering contradiction, as shown below.

(64) Derivation of OV (LME onward):

a. Phase 1: $[_{vP}$ v $[_{VP}$ V O ]] (V < O)

b. Phase 2: $[_{CP}$ … $O_i$ … $[_{vP}$ v $[_{VP}$ V $t_i$ ]]] (O < V)

On the other hand, movement of quantified/negative objects would be triggered by their semantics such as scope, as implied in Moerenhout and Wurff (2005). Under this approach, the fact that there is a time gap in the loss of leftward movement between ordinary objects and quantified/negative objects will follow from the different semantic effects associated with the two types of objects.[25]

Given that PP-V order had, as we have seen, a similar distribution as OV order in OE to a large extent (cf. Tables 5.18-5.21.), its loss in ME for finite clauses can be accounted for under the cyclic linearization approach. In particular, after the loss of head-finality in ME, movement of PPs would also cause an ordering contradiction, as

shown below. In particular, PP is base-generated postverbally in (66); its movement over the vP phase in to the CP phase causes a contradiction between the V-PP order within vP and PP-V order in CP.

(65) Derivation of PP-V in finite clauses (OE~EME):

a. Phase 1: [$_{vP}$ v [$_{VP}$ PP V ]] (PP < V)

b. Phase 2: [$_{CP}$ … PP$_i$ … [$_{vP}$ v [$_{VP}$ t$_i$ V ]]] (PP < V)

(66) Derivation of PP-V in finite clauses (LME onward):

a. Phase 1: [$_{vP}$ v [$_{VP}$ V PP ]] (V < PP)

b. Phase 2: [$_{CP}$ … PP$_i$ … [$_{vP}$ v [$_{VP}$ V t$_i$ ]]] (PP < V)

To summarize, PPs as well as objects were able to move from their base-generated vP-internal position to the Spec of TopP in OE. Their movement, however, was optional because it is semantically motivated; that is, PP-fronting in finite clauses and object movement in OE were triggered due to their interpretive effects such as topicalization/old information and defocalization. On the other hand, PP-fronting in finite clauses and object movement in OE were subject to cyclic linearization. In the course of derivation, no ordering contradiction can be caused by their movement. However, once the English word order changed from head-final to head-initial in EME, ordering contradiction came to be unavoidable for both PP-fronting in finite clauses and object movement. This in turn leads to their loss. In other words, PP-V order in finite clauses and OV order were bound to be lost after the change of head directionality.

#### 5.4.3.3. PP-fronting in Non-finite Participial Clauses

We have seen in the preceding subsection the derivation of PP-fronting in finite

clauses in connection with object movement and the reason for their loss. PP-fronting, however, was still available in non-finite participial clauses until the 18th century, as discussed in Section 5.4.2. This section discusses why they were still available after the change of head directionality.

Under the cyclic linearization approach, it is expected that PP-V clauses would have all disappeared after the change of head directionality in EME, contra the fact that non-finite participial PP-V clauses did not disappear immediately after the change. It then follows that the reason for why PP-fronting remained available in non-finite clauses even after EME lies in the difference between finite clauses and non-finite participial clauses with respect to cyclic linearization. The question to ask is then: What is the difference mentioned above? We discuss this question in what follows.

Note first that non-finite clauses do not project CP; that id, they lack CP phase. They have vP phase embedded under AspP, which is dominated by PredP.[26] Neither AspP and PredP is a phase.[27] This amounts to saying that PP-fronting out of the vP phase into PredP does not cause ordering contradiction. (67) represents the derivation of PP-fronting before the change of head-directionality and (68) the derivation after the change. Cyclic linearization is relevant in (67), but not in (68).

(67) Derivation of PP-V in non-finite participial constructions (OE~EME):
   a. Phase: [$_{vP}$ [$_{VP}$ PP V ]]] (PP < V)
   b. Non-phase: [$_{PredP}$ … PP$_i$ … [$_{vP}$ [$_{VP}$ $t_i$ V ]]] (PP < V)

(68) Derivation of PP-V in non-finite participial constructions (LME~EModE):
   a. Phase: [$_{vP}$ [$_{VP}$ V PP ]] (V < PP)
   b. Non-phase: [$_{PredP}$ … PP$_i$ … [$_{vP}$ [$_{vP}$ V $t_i$ ]]] (PP < V)

One might reject the argument that cyclic linearization is not relevant in (68) and consider that ordering contradiction is caused between the larger phase and the vP phase in the participial phrase. Given the standard assumption (Chomsky (2000, 2004)), it is indeed the case that non-finite participial clauses are contained in a larger phase, namely DP or the matrix CP/vP. However, embedment of non-finite participial clauses under a larger phase as such has little to do with cyclic linearization. Here is the reason. The upshot of cyclic linearization approach proposed by Fox and Pesetsky (2005) is that spelling out of a phase yields a linearization of that phase and linearization information that is established at a phase can never be deleted in the course of a derivation, while Chomsky (2000), assuming phase, attempts to reduce the computational burden. As regards, non-finite participial clauses under discussion, they do involve a phase, vP, and the main clause under which they are embedded does involve (a) larger phase(s), following Chomsky (2000). However, as far as linearization is concerned, phases in main clauses are irrelevant with linearization in adjunct clauses such non-finite participial clauses under discussion. This is because neither main clauses nor adjunct clauses can ever linearize into the other; that is, no element in one can move into the other, though Fox and Pesetsky do not explicitly remark on this. Accordingly, it is plausible to assume that cyclic linearization is not relevant in (68).

In conclusion, PP-fronting was still available after the change of head directionality in EME. This is because movement such as PP-fronting as well as object movement was constrained by a certain syntactic factor, cyclic linearization, though such movement was triggered in order to satisfy the discourse-related requirements such topicalization and defocalization. In OE, PP-fronting was available because it

satisfied cyclic linearization. On the other hand, it remained available in non-finite participial clauses even after the change of head directionality. This is because non-finite participial clauses, unlike finite clauses, are phases and therefore movement of PPs in them, in particular movement over vP phase to the Spec of TopP, does not cause an ordering contradiction.

### 5.4.4. The Loss of PP-fronting in Non-finite Participial Clauses

This subsection addresses the issue of why PP-fronting was lost. We have two questions to ask: 1) How was it lost? 2) And why in the 18th century? To answer these two questions, we need to consider what triggered it and why it was available in the earlier stages of English. That is, information structure or their discourse-related properties, i.e. topicalization or defocalization, and the syntactic constraint, i.e. cyclic linearization seem to be relevant here.

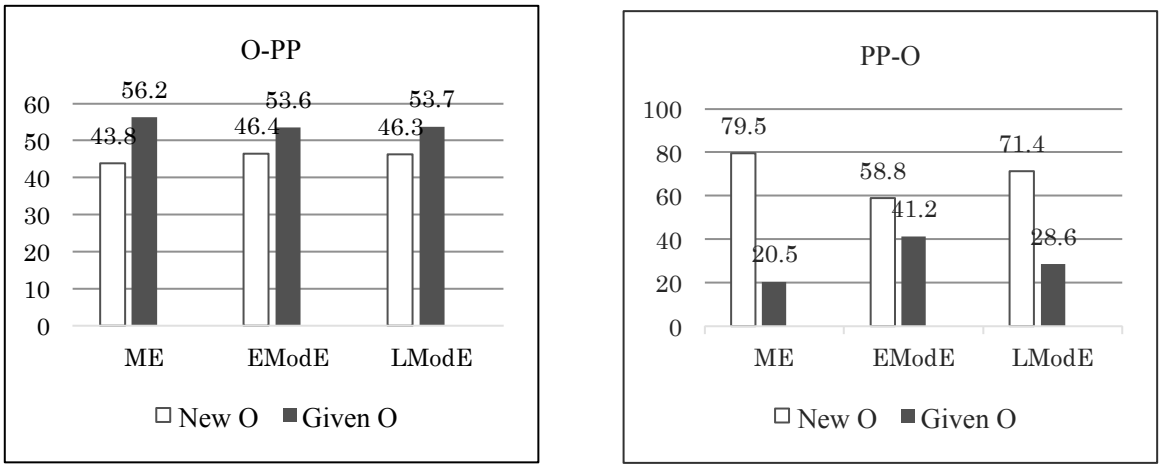
However, the syntactic constraint, cyclic linearization does not matter here because the (non)phasehood of non-finite participial clauses has not changed from the beginning; that is, they have been non-phase, though they have involved the vP phase. Rather, information structure is relevant here with the loss of PP-fronting. In other words, the loss of PP-fronting was related with a semantic factor, not with a syntactic one. As also discussed on PP-fronting in postnominal participial phrases in Section 5.3, the loss of PP-fronting in non-finite participial clauses follows from the loss of the requirement that a focused element occupy the end position.

In Chigchi (2016a), I provided more detailed discussion on the loss of such requirement in the history of English, based on my investigation on Light NP Shift in Early English. Light NPs could occupy the end position until the 18th century, as exemplified in (69).

(69) a. he brouȝt *wiþ him* peple
he brought with him people
'he brought people with him' (CMBRUT3,88.2667: M3)
b. In the moneth of Aprill, the Cleargie granted *vnto the King* a tenth.
(STOW-E2-P1,557.137)

The result of the investigation of Light NP Shift is shown in Figure 5.2. Throughout ME and ModE, the frequency of light NPs following PPs has been higher than for new objects than for given objects. This suffices to show that there was a tendency in earlier English that focused elements, even when they are very light, occupy the end position.[28] In this respect, PE differs from Early English in that PE does not generally allow light objects to be shifted to the end position; we have Heavy NP Shift, but no Light NP Shift in PE. The loss of Light NP Shift then serves as empirical evidence that English lost the requirement that focused elements occur in the end position. Importantly, it is around the 18th century when Light NP Shift disappeared from English, as discussed in more detail in Chigchi (2016a).

Figure 5.2. Rate of light objects in Aux-V clauses with O-PP *vs.* PP-O




Once this requirement is lost, it becomes unnecessary for PPs to move out of the end position to a pre-verbal/pre-participle position, leading to the structure in (70).

(70) [$_{DP}$ … N … [$_{vP}$ V PP]]

A fuller illustration is given in (71a, b, c), which represents the structural and derivational status of PP-fronting throughout the history of English.

(71) a. [$_{PredP}$ Pred$^0$ [$_{AspP}$ Asp$^0$ [$_{TopP}$ PP$_i$ Top$^0$ [$_{vP}$ v$^0$ [$_{VP}$ … $t_i$ … V/Root ]]]]]
b. [$_{PredP}$ Pred$^0$ [$_{AspP}$ Asp$^0$ [$_{TopP}$ PP$_i$ Top$^0$ [$_{vP}$ v$^0$ [$_{VP}$ V/Root … $t_i$ … ]]]]]
c. [$_{PredP}$ Pred$^0$ [$_{AspP}$ Asp$^0$ [$_{TopP}$ Top$^0$ [$_{vP}$ v$^0$ [$_{VP}$ V/Root … PP… ]]]]]

The representation in (71a) shows that PPs are base-generated in a preverbal position in vP and move to the Spec of TopP in order to be topicalized (cf. Sections 5.3.3 and 5.4.2.). This derivation is available until EME. The representation in (71b) shows that PPs are base-generated in a postverbal position and move to the Spec of TopP in order to be defocalized, whereby the element to be fococalized come to occupy the end position. This derivation is available from LME to the end of EModE. The representation in (71c) shows that PPs are base-generated in a postverbal position and stay in situ; they are not required to be fronted because the requirement that a focused element occupy the end position was lost.[29] This structure is available from the beginning of LModE until PE.

### 5.4.4. Conclusion

This section has showed the differences between finite and non-finite clauses regarding the derivation and loss of PP-V order. Along with the loss of movement of positive objects in ME, PP-V order was also lost in the same period. Given that they had a similar distribution concerning information such topic and defocus, it was argued that they had the same derivation and were lost for the same reason under the cyclic linearization approach. Non-finite participial clauses with PP-V order were attested until the 18th century because non-finite participial clauses constitute only

vP phase, which preclude the possibility of ordering contradiction. PP-V order was lost in the 18th century because English lost a requirement that a focused element occupy the end position in the same period so that PPs, even if defocused, do not move out of the end position into pre-verbal/pre-participle position.

## 5.5. Summary and Conclusion

This chapter has discussed two major changes concerning word order in adnominal and adclausal participial phrases. Section 5.2 discussed SPPs and their loss. Section 5.3 discussed PP-fronting in postnominal participial phrases and its loss. Section 5.4 discussed PP-fronting in finite clauses and non-finite participial clauses in general. It was argued that the availability of both SPPs and PP-fronting were related to information structure. In the former, movement of the participle takes place in order to take a scope over the modified noun, instantiating a certain type of focalization. In the latter, PPs move when they are required to be topicalized or defocalized. Both topicalization and defocalization are instances of dislocation of non-new information including given/old information and defocused information. As regards their loss, it was shown that certain constraints were at work. For SPPs, a semantic constraint came to be imposed on split constructions in English, leading to the loss of SPPs. For PP-fronting, cyclic linearization was at work throughout the history of English.[30] But it became irrelevant in non-finite participial clauses after the change from head-final to head-initial took place in EME and did not restrict PP-fronting in them because PP-fronting does not cause an ordering contradiction in non-finite participial clauses.

# Notes to Chapter 5

1. Split participial phrases are those in which the head participle precedes the modified noun and the rest of the phrase follows it. Seen from this surface order, split participial phrases belong to prenominal participles. However, as will be shown in the text, the head participle originates in postnominal position together with the rest of the phrase. In this sense, they are presented as postnominal participial phrases in this chapter.
2. Laskova (2007) presents the following data to show that SPPs are available in PE.

   (i) a. The cleverly selected topics by the university committee showed that…
   b. The beautifully cared for garden by the university students showed that… (Laskova (2007: 136))

   The acceptability of such phrases, however, remains inconsistent between British and American English and between young and old speakers, as he himself notes (2007: 136, fn. 4). However, my informants, who are British English speakers, old and young, all do not accept these two phrases as natural expressions. González Escribano (2005: 566), on the other hand, presents the following data, which shows the unacceptability of SPPs in PE, for both past and present participles.

   (ii) a. * an extended rumor in the capital
   b. * a tired woman in the evenings
   c. * a smiling baby from her cradle
   d. * a suffering patient from early childhood (González Escribano (2005: 566))

   Given all this, such examples as in (ii) are not canonical in PE and so will be disregarded here.

3. It may be controversial whether the participles originate in postnominal position and have moved leftward or the PPs are base generated prenominally and have undergone rightward movement. On the other hand, one might postulate the extraction operation, relating it to the head-final filter, along the lines advocated in Fleisher (2008).
4. Pysz (2009: Ch.5) analyzes his Adj+N+Compl$_{Adj}$ construction (e.g., *manigfeald onlic wundor Þysum* 'many wonders similar to this') as having the underlying structure Adj+Compl$_{Adj}$+N. He proposes that the surface order is obtained by proposing Compl$_{Adj}$ first and then the remnant to a higher position. The question of how this construction and the one dealt with in this section are related and whether they can be unified remains to be open, however.
5. (Note that adjuncts are not selected by the head, but complements are. Things, however, are more complicated given that some split APs involving adjunct-like postnominal PPs are available in PE (González Escribano (2005: 566ff)). Here, I take postnominal PPs in SPPs under discussion to be adjuncts for the moment.
6. González Escribano (2005: 600) presents a minor pattern that appears as split phrases, as exemplified below.

   (i) a. an attractive scheme financially
   b. a respected colleague professionally (González Escribano (2005: 600))

   In (i), it is hard to assume that the postnominal adverbs are selected by the prenominal adjectives. However, such examples do not qualify as a genuine split construction since the adverb is often preceded by comma, which indicates that it is some kind of afterthought, as described in González Escribano (2005: 600), and so they do not count as counterexamples to the generalization that only split phrases involving a selection relation are allowed in PE.

7. This, however, leaves unexplained why SAPs to be discussed in the following Subsection, like SPPs, are also on the decline if postnominal PPs in SAPs qualify as complements, but not as adjuncts.
8. Note that it is unlikely that postnominal elements in SAPs are base-generated in prenominal position and have moved to postnominal position.
9. The structure in (25a) gives rise to the interpretation in (25b). That is, the utterance locates a strong department as a topic/theme in the discourse and the referent of the PP as commenting on/being predicated of the referent of the adjective *strong*. The referent of the PP is not predicated of the whole NP in that the PP is not selected by the head noun. The predication relation holds between the PP and the adjective but not between the PP and the head noun or NP.
10. In this case, there is in fact only one occurrence, the postnominal one, of the adjective in the numeration as well as in syntax. This structure gives rise to the interpretation in (26b), where the AP as a whole is predicated of the noun.
11. An alternative way to capture the semantic relation between the prenominal adjective and the postnominal PP is to assume a lambda operator, without postulating a second occurrence.
12. SAPs were also attested in Early English, but only until LME, following the corpora used in this section. What is important here is that early SAPs showed a very similar dialectal distribution to that of SPPs. This may imply that the fact that SAPs were attested until LME has to do with the decline of SPPs.
13. A small clause interpretation would appear to be possible here with the verb *finden* 'find'. I follow the structure parsed in the corpus, however.
14. The statistics here does not include compound PPs like *therein*, *thereof*, *thereby*, etc,

in order to eliminate the effect that would arise from phonological factors. Note that these PPs are each lexicalized as one word, though they are tagged as PP in the corpora. Moreover, they have adverb-like properties. Adverbs quite freely precede verbs even in PE, as in *The books recently published are about global warming*.

15. Fronting of an element can be caused by various factors. As briefly summarized in Biberauer and Kemenade (2011), among many others, not only given-new information structure but also discourse-related notions such as activation, accessibility, prominence, and salience are crucial in fronting of an element. In this section, the fronting of PPs is taken to be the result of the functioning of information value, essentially following Bech (2001).
16. As we have noted, interpretive effects such as old information and defocus would arise with the optional movement of ordinary positive objects, and also with PP-fronting. Topicalization of to positive objects to sentence-medial position, as observed by Tanaka (2015, 2017)), could fall under the type in (ia). PP-fronting, on the other hand, is characterized as defocalization and falls under the type in (id).

(i) a. [+Topic][***-Focus***]: entailing ***leftward movement to clause*** initial or ***medial position*** (e.g., Topicalization);
b. [+Topic][+Focus]: entailing leftward movement to clause initial position (e.g., Contrastive Focus);
c. [-Topic][+Focus]: entailing rightward movement to clause final position (e.g., Light NP Shift) or sentence initial or medial position (e.g., Scope-taking Focus);
d. [-Topic][***-Focus***]: entailing ***leftward movement to clause medial position*** (e.g., **PP-fronting**).

17. Under such an assumption, the loss of PP-fronting is, in particular, due to the availability of head movement of the participle before or around the 18th century. The following representation shows this.

(i) a. $[_{NP}$ $[_{AspP}$ Asp$^0$ … $[_{vP}$ v$^0$ $[_{VP}$ … PP … V ]]]] (⇒PP-V)
b. $[_{NP}$ $[_{PredP}$ Pred$^0$-v$^0$-V$_i$ $[_{AspP}$ Asp$^0$ … $[_{vP}$ $t_i$ $[_{VP}$ … PP … $t_i$ ]]]] (⇒V-PP)

Before its loss, PP-V order would have been the basic word order, without movement involved, as in (ia), and after its loss, the derivation would be like that in (ib), where the participle lands in Pred$^0$, leading the loss of 'PP-fronting'.

18. More specifically: Rate of Aux-(XP)-PP-(XP)-V-(XP) and Aux-(XP ≠ PP)-V-(XP)-PP-(XP).
19. Note that sentence medial PPs like that in (3b), instantiating PP-V order, are not allowed in PE. They, however, were available in Early English, in particular OE and M1, we will see.
20. It is not unlikely that a PP is easily fronted when it is base-generated postverbally together with another PP. Such fronting is likely to be a matter of parsing. Interestingly, this is restricted in finite clauses both in PE and Early English. In non-finite participial clauses such as postnominal phreases in PE, however, a PP is not fronted no matter how many PPs are base-generated postverbally.
21. I have left the first two columns empty because examples of PP preceding past participles in full clauses are always ambiguous to a certain extent between PP-passive participle and PP-perfect participle due to the ambiguous nature of the auxiliary *be* and the participle in OE. Past participles including both passive and perfect ones are tagged as VBN in YCOE.
22. In this respect, Early English is parallel to modern Germanic languages such as Yiddish, German and Dutch, which allow leftward movement not only of objects but also of PPs.
23. Unless otherwise specified, when I refer to 'O', I am referring to positive objects.
24. See Chomsky (2000) for discussion of phase.

25. See also Tanaka (2015) for related discussion.
26. Recall the discussion in Section 3.2.
27. Only CP and vP are phases, according to Chomsky (2000: 12ff).
28. My investigation in Chigchi (2016a) include only one-word objects and two-word objects.
29. It is plausible to argue that English has lost such a requirement because Early English utilized word order as a main device to derive information-related effects while in PE, phonological stresses are used to derive information-related effects. See Fischer (2001) for related discussion. This is to say that as phonological stresses play increasingly important roles in information structure over time, word order will be losing its roles. How to relate this diachronic aspect of English to the loss of PP-fronting in non-finite participial clauses in a more principled way, however, requires more in-depth investigation. I leave this issue open for future research.
30. Cyclic linearization is not explicitly formulated as a syntactic constraint in Fox and Pesetsky (2005). It, however, does serve as a constraint on movement across two phases.

# Chapter 6

# Conclusion

## 6.1. Grand Summary

The primary goals of this thesis have been to present structural generalizations of prenominal past participles in PE, to clarify syntactic structures of postnominal participles in PE, and to report and explain diachronic changes in prenominal and postnominal participles in the history of English. Four substantive chapters have separately discussed these issues.

In Chapter 2, I had three major concerns with prenominal participles: type, interpretation and formation. Since the distinction between adjectival and verbal participles was made in the 1970s, quite a number of scholars have subsequently studied the participles in terms of such a distinction. With the introduction of Distributed Morphology, it was realized that the distinction of the participles in terms of lexical categories was insufficient and the earlier adjectival *vs*. verbal distinction was replaced by the stative *vs*. resultative *vs*. eventive distinction. While the latter distinction has been a forward progress in understanding of the participles, it has been unclear how to correctly identify a given participle as stative, resultative and eventive. A solution to this problem was provided in the first part of Chapter 2, in which an overview of the literature was provided in the course of reclassifying the participles. In particular, it was shown that eventuality type plays an important role in identifying a given participle as stative or resultative (as a subtype of eventive) or eventive. My main proposals were:

(1) Criterion for Eventive Participle (CEP):
Be Eventive if you involve Temporal-eventuality. Otherwise, be Stative.

(2) Criterion for Stative Participle (CSP):
Be Stative if you involve S-eventuality. Otherwise, be Eventive.

The rest of Chapter 2, organized into two sections, has discussed participial formation. Noticing that the various types of participle should be formed on the basis of a generalized structure, Chapter 2, in its second section, emphasized the following properties:

(3) The verbness of the participles comes from eventualities they involve.

(4) The eventive interpretation of the participles is produced through grammatical aspect rather than attributed solely to a verbal projection in the word-level formation.

It was also shown that two types of noun-based (or denominal) participles share a similar structure, on the one hand, and differ in richness of structure, on the other hand. In its third section, Chapter 2, discussing conditions on participial formation already present in the literature, showed that there are four conditions, namely, IAC, RSC, AC and IC, which make up a family.

Chapter 3 was devoted mainly to clarifying the internal structure and the predication relation between postnominal participles and the head noun, on the one hand, and to exploring a strategy to solve the problems that relavization in reduced relative clauses poses for labeling theories, on the other hand. Postnominal participles have often been analyzed as reduced relative clauses but the their structural status has not been clarified. My main proposal on this issue was:

(5) Reduced relatives have a predicative structure like small clauses, both

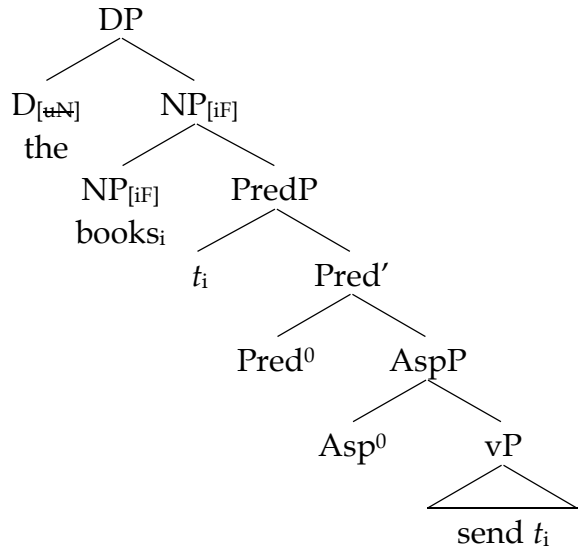
projected by a predicate head Pred$^0$. The head noun originates as an internal argument of the predicate and raises to the Spec of PredP, whereby predication is produced. The noun subsequently moves out of PredP to the surface position, whereby relativization is completed and a modification relation is produced.

The subsequent movement of the noun leads to problems related to labeling, which are hardly solved by the labeling algorithms previously proposed. I then proposed:

(6) Relavization is triggered by categorial features, in particular those of the determiner head D$^0$ and the noun to be relativized. After moving out of PredP, the noun merges with it, yielding an unlabeled syntactic object. In the need of identifying the categorical status of the derived object at the interface, the computation utilizes relevant categorical features. In particular, the nominal feature of the noun is probed by the unsatisfied counterpart on D$^0$, which renders the noun active and available for labeling. As a result, the syntactic object composed of the noun and PredP is labeled NP.

Predication and relativization under these proposals can be tree-diagrammed as:

(7) [The books sent to me] are about global warming.




The diachronic chapters dealt with some changes that happened in the history of

adnominal participles. The changes were divided into two types; one is related with aspect and aspectuality and the other is related with word order.

Chapter 4 took up the issue of the aspectual changes. While related studies on this issue have been very few, my investigation based on OED and historical corpora have revealed three major changes, all of which happened with prenominal participles. They are:

(8) a. Eventive participles came to be available as prenominal modifiers since ME (1150~1500);
b. Unaccusative-based participles came to be available as prenominal modifiers throughout LME and EModE (1350~1700);
c. A certain type of unergative-based participles came to be available as prenominal modifiers in ModE (1500~1900).

Though each of the changes was triggered by a particular factor, an aspectual change underlay all the three factors. In particular, prenominal participial formation in OE was subject to a condition that requires participles to be formed from verbs that lexically encode change-of-state meaning. That is, inner aspect (or Aktionsart) was crucial in forming prenominal participles but later outer aspect came to be paly important roles, whereby participial formation became less sensitive to lexical meanings of verbs and the input of the participles became less and less restricted to verbs that lexically encode change-of-state meaning. As a result, various types of verb including unergatives and unaccusatives as well as a group of transitives came to be available as inputs of prenominal participles. As outer aspect became active, more and more participles came to be grammatically derived and various eventive interpretations became available.

Chapter 5 was concerned with the changes in word order, as listed below:

(9) a. Participial phrases spilt around the head noun were lost throughout ME and EModE;
b. PP-fronting in postnominal participial phrases was lost in LModE;
c. PP-fronting lost in ME for finite clauses and in ModE for non-finite participial clauses.

The first change happened with split participial phrases, which were available in OE with a certain frequency but began to decline from ME and subsequently disappeared in ModE. The decline and loss were due to the fact that English came to disallow phrases to be split if they don't involve selection relation. There was an asymmetry between finite and non-finite participial clauses including postnominal participial phrases with respect to when PP-fronting was lost. For finite clauses, the loss of PP-fronting was a natural consequence of the loss of head-finality in English. In contrast, PP-fronting in non-finite clauses interacted with information structure to a larger extent in comparison to that in finite clauses. All of these changes had to do with information structure, which itself had little change in the history of English but certainly affected the syntax of word order to different extents in different types of clause or phrase. On the other hand, semantic and syntactic constraints had been at work in changes as such. Split past participial phrases were lost due to the emergence of the semantic constraint, which disallows split phrases without involving a selection relation. PP-fronting was not lost immediately after the change of head directionality because cyclic linearization does is irrelevant in non-finite participial clauses and so PP-fronting does not cause but an ordering contradiction.

## 6.2. Residual issues

I have tried to explain some issues concerning adnominal participles in English, which had remained unexplained in the literature, and reported some historical facts about them and provided explanations. There, however, are still sundry issues left open.

I have classified Resultative participles into lexically derived and grammatically derived ones. As evidenced by the data in Section 2.2.4, grammatically derived Resultatives (as a subtype of Eventives) have, to a certain extent, similar semantics as the perfect of result and the experiential perfect sentences. Given this, there arises a question of how to incorporate adnominal Resultatives in the current theories of tense and aspect, which have concentrated on sentences, but not on adnominal participles. Such subjects go beyond word formation and probably lexical semantics also, though closely related with the latter.

As regards postnominal participles, I suggested in Sections 3.3 and 3.4 some similarities between reduced and non-reduced relatives with respect to their predicative structure. Further clarifying similarities and differences from the perspective of predication, however, remains open, as also mentioned in those sections. Another issue also deserves attention. Usually, unaccusative participles are not allowed in postnominal position. We, however, find exceptions, where the participle is modified by an adverb, as shown below.[1]

(10) a. * The train arrived at platform 1 is from York.
b. The train recently arrived at platform 1 is from York.
(Quirk et al. (1985: 1265))

What is problematic here is why pre-head modification by an adverb rescues the phrase. One might suggest that parsing, not syntax matters here; that is, a

sandwiched element may help to avoid possible garden-path effect. I, at the moment, accept such a suggestion because I see no better explanation.[2]

In the diachronic chapters, a few questions remain unexplained in my analyses. For example, it remains unclear why the time when PP-fronting in non-finite participial clauses was lost is the 18th century. I related this to the loss of Light NP shift, which was available until that time, as discussed in Chigchi (2016a). However, the reason why it is the 18th century when Light NP Shift lost lost still calls for explanation. Another question to consider is why PP-fronting in legal texts had been attested with much higher frequency until the end of LModE, i.e. around 1900, while it was lost in EModE for non-legal texts. It was not lost in legal texts throughout ModE, according to my data from the same corpora. This could mean that they lasted until sometime after 1900. Given that there is no such asymmetry between legal and non-legal texts in PE, it is more curious that it was abruptly lost sometime after 1900. There might be many other unnoticed diachronic aspects of adnominal participles. In this thesis, however, I focused myself only on what was discussed in the substantive chapters, leaving any other related issues open for future research.

# Notes to Chapter 6

1. Under the PredP analysis, (10b) is derived in the same way as object reduced relative relatives, e.g., *The books sent to me are about global warming*, given the standard assumption that internal arguments are base-generated as the object of verbs. One might want the head noun to have moved from the Spec of TP, not from that of PredP. Such argument, however, does not hold because reduced relatives do not have inflectional projections, as discussed in 3.2.1.
2. The following fact also suggests that this pattern is not a matter of syntax or semantics.

   (i) My heart bounded like that of a prisoner escaped. (Jespersen (1914: 382))

   In (i), there is no overt element intervenes between the unaccustive participle *escaped* and the noun *man*. Jespersen (1914: 382) observes that this order is found from rhetorical reasons, i.e. noun/participle … noun/participle, not from semantic reasons.

   There, however, is one unaccusative verb whose participle does not require an element precede it in postnominal position.

   (ii) The leaf fallen from the tree is red. (Marvin (2003: 131))

   It thus seems that not all unaccusative verbs or their participles behave alike.

# Appendix A

## Base Verbs of Prenominal Participles in YCOE (274 types and 1561 tokens in total):

| Verb | Meaning |
|---|---|
| **With prefix *a-*** | |
| *abædan* | to fry |
| *abærstan* | to burst forth |
| *abeodan* | to announce, declare a message |
| *abeodan* | to announce, declare a message |
| *abeodan* | to announce, declare a message |
| *abiddan* | to ask for, to get by asking, to |
| *ablendan* | to blind, to make blind, to darken |
| *abrecan* | to break, destroy, to vanquish |
| *abreoðan* | to unsettle, ruin, frustrate, |
| *acennan* | to bring forth, to renew |
| *acunnan* | to accuse |
| *acwellan* | to kill |
| *adrigan* | to dry |
| *afandian* | to prove, to discover by trying |
| *afedan* | to feed, nourish, bring up |
| *aflean* | to flay, strip off the skin |
| *afyran* | to remove |
| *afyrhtan* | to affright, terrify |
| *agalan* | to loose |
| *agan* | to go off, away |
| *ageotan* | to pour out, spill, to deprive of |
| *aginnan* | to begin, set upon, undertake |
| *agrafan* | to engrave, inscribe |
| *aheawan* | to cut off, hew down |
| *ahebban* | to raise, exalt, heave up |
| *ahon* | to hang, suspend, crucify |
| *ahreran* | to shake, make tremble |
| *ahydan* | to hide |
| *ahyrdan* | to harden |
| *alefan* | to make weak, sick |
| *aleogan* | to tell lies |
| *alutan* | to bend, incline |
| *alyfan* | to give leave, permit |
| *amansumian* | to accurse |
| *ameltan* | to melt |
| *amerian* | to examine, purify |
| *amiltan* | to melt |
| *anbestingan* | to thrust |
| *aræran* | to rear up, to raise up |
| *aridan* | to ride |
| *asawan* | to sow |
| *asendan* | to send out, send forth |
| *aseowan* | to sew, stitch |
| *asetan* | to appoint, design |
| *aslean* | to strike, beat, hammer |
| *aslidan* | to slide away, to fall, to be removed |
| *asmeagan* | to examine, trace out |
| *asniþan* | to cut out, cut off |
| *astepan* | to bereave |
| *astreahte* | to stretch out |
| *asweartian* | to blacken, make dark |
| *aswollen* | to swell |
| *ateon* | to draw out, draw away, lead out |
| *aþenian* | to stretch out, to expand |
| *aþindan* | to puff up, to swell |
| *aþyan* | to press |
| *awedan* | to be mad, be angry |
| *aweorpan* | to throw away, cast out |
| *awergian* | to accurse, curse |
| *awestan* | to waste, lay waste, destroy |
| *awyllan* | to cause to bubble, boil |
| *awyrdan* | to injure, destroy, corrupt |
| **With prefix *be-*** | |
| *beþencan* | to consider, bear in mind |

| | |
|---|---|
| *bebeodan* | to command, order |
| *beclysan* | to close (in), shut (in) |
| *biddan* | to ask, entreat, require |
| *bedyppan* | to dip, immerse |
| *befæstan* | to fasten, make fast |
| *began* | to go over, occupy, surround |
| *begyrdan* | to begird, surround |
| *behatan* | to promise, threaten, vow |
| *behydan* | to hide |
| *behelan* | to conceal |
| *belocian* | be behold |
| *besceawian* | to look on, consider, regard, watch |
| *besceran* | to shear off, shake, cut off |
| *besengan* | to singe, scorch, burn |
| *besettan* | to place, appoint, beset |
| *besmittian* | to pollute, defile |
| *beswican* | to entice, device |
| *beswincan* | to toil, labor (for), labor (at) |
| *betæcan* | to deliver, commit |
| *betynan* | to enclose, surround with a fence |
| *beweddian* | to espouse, wed |
| *bewerian* | to defend, restrain, prohibit |
| *bewillan* | to boil away |
| **With prefix *for-*** | |
| *forbeodan* | to forbidden |
| *forceorfan* | to cut down |
| *forcyrran* | to turn again |
| *fordrifan* | to drive away |
| *fordrugian* | to dry up |
| *forealdod* | to grow or wax old |
| *foresettan* | to set before |
| *forestigan* | to go before |
| *forgietan* | to forget |
| *forgifan* | to give |
| *forhwyrfan* | to change for or from |
| *forlætan* | to let go, permit |
| *forlicgan* | to lie in a improper manner |
| *forlorian* | to lose |
| *formolsnian* | to make rotten, corrupt |
| *forrotian* | to become wholly rotten |
| *forscrincan* | to shrink up |
| *forscyldigian* | to make guilty |
| *forstelan* | to steal with violence, rob |
| *forsweorcan* | to be very dark, darken |
| *forþfaran* | to go forth |
| *forþgewitan* | to go forth, proceed |
| *forweornian* | to wither away, fade |
| *forwlencean* | to exalt, fill with pride |
| *forwyrcan* | to miswork, do wrong |
| **With prefix *ge-*** | |
| *geacsian* | to find out by asking, dicover |
| *geætrian* | to poison |
| *gebigan* | to bow, turn, twist, bend |
| *gebiterian* | to make bitter |
| *gebletsian* | to bless, consecrate |
| *gebodian* | to tell, make know, announce |
| *gebycgan* | to buy |
| *geberan* | to bear, bring birth |
| *gebrædan* | to make broad |
| *gebregdan* | to vibrate, draw, unsheathe |
| *gebrecan* | to break |
| *gebrócian* | to hurt, injure, break a bone |
| *gebrengan* | to bring |
| *gebindan* | to bind |
| *gebygan* | to bow, bend, turn |
| *geceapian* | to buy, purchase |
| *gecnuwian* | to pound together |
| *geceosan* | to choose, love |
| *gecristnian* | to Christianize, catechize |
| *gecweðan* | to say, speak, call |
| *gecyrran* | to turn, convert |
| *gecyþan* | to tell, make known, announce |
| *gedon* | to do, make |
| *gedrefan* | to disturb, trouble |
| *ge-dreccan* | to vex, afflict |
| *geeacnian* | to increase, become pregnant |
| *geedcucian* | to re-quicken, revive |
| *geendebyrdan* | to set in order, arrange, dispose |
| *geendian* | to end, finish |
| *gefrætowian* | to adorn, deck, trim |

| | |
|---|---|
| *gefremian* | to finish, effect, bring to pass |
| *gefullian* | to baptize |
| *gegaderian* | to gather, unite |
| *gegnidan* | to rub, rub together |
| *gegeótan* | to found, cast |
| *gehadian* | to ordain, consecrate |
| *gehadian* | to ordain |
| *gehældan* | to keep, preserve, hold |
| *gehalgian* | to ordain, make holy, consecrate |
| *gehagian* | to please |
| *gehealdan* | to keep hold, observe, keep in, hold |
| *gehelian* | to conceal, hide |
| *gehergian* | to ravage, plunder |
| *gehiwian* | to make, transform |
| *gehiwian* | to form, make, transform |
| *gehorsian* | to supply with a horse |
| *gehwyrfan* | to change, turn, convert |
| *gehyngran* | to make hungry, to be hungry |
| *gehywan* | to make game of, despise |
| *geinseglian* | to seal, to impress with a seal |
| *gelaæccan* | to seize, take, catch, apprehend |
| *gelæran* | to teach, educate, instruct, persuade |
| *geleþran* | to relax, unloose |
| *gelogian* | to place, lodge, dispose, regulate |
| *gelufian* | to love, esteem |
| *gelyfan* | to confide, believe, trust, hope |
| *gemæstan* | to fatten |
| *gemeltan* | to melt, digest |
| *gemerian* | to purify |
| *gemetegian* | to measure |
| *gemidlian* | to divide, separate in the middle |
| *gemyitan* | to cause to melt, soften |
| *gemyndigian* | to remember, call to mind |
| *geniman* | to take away, move |
| *geondettan* | to confess |
| *geplantian* | to plant |
| *geradian* | to arrange, reason |
| *gerædan* | to give counsel, advise |
| *geregnian* | to put, dispose, adorn |
| *geripian* | to grow old, ripen |
| *gesawan* | to sow |
| *gesceppan* | to create, form |
| *gescyldigian* | to prove guilty, charge with guilty |
| *gesettan* | to set in order, arrange, dispose |
| *gesleán* | to strike with a material object |
| *gesmyrian* | to smear, anoint |
| *gesodan* | to seethe |
| *gesomnian* | to assemble, collect |
| *geswæncan* | to afflict, oppress |
| *geswetan* | to make sweet |
| *geþungen* | to grow thriven, advanced |
| *geteon* | to draw, form |
| *getrifulian* | to rub down |
| *gewæpnian* | to arm, furnish with weapon |
| *gewealdan* | to rule, control, have power over |
| *gewilnian* | to desire, to wish, expect |
| *gewyrcan* | to work, make, built |
| *gewritan* | to write, give or bestow by writing |
| *gewuldrian* | to glorify |
| *geyrsian* | to anger, make angry, to be angry |
| **With other prefixes** | |
| *fulfremman* | to fulfil |
| *oferdon* | to overdo |
| *oferdrencan* | to over-drench |
| *ofergyldan* | to cover with gold |
| *oferswiðdum* | to overcome |
| *ofsettan* | to beset, press |
| *ofslean* | to slay, kill |
| *oncælan* | to set fire to |
| *onbryrdan* | to investigate |
| *onhnigan* | to bend down |
| *onsendan* | to send off |
| *ontynan* | to open, make an opening in |
| *onwinnan* | to attack |
| *þurhteon* | to carry through |
| *tobeatan* | to beat to pieces |
| *tobrecan* | to break into pieces |
| *tobrysan* | to crush, break into pieces |
| *tocleofan* | to cleave asunder |
| *tocnyssan* | to crush into pieces |

| | |
|---|---|
| *todælan* | to divide |
| *toflowan* | to flaw away |
| *togeotan* | to diffuse, spread |
| *toglidan* | to glide away |
| *tohreran* | to shake to pieces |
| *tolisan* | to unloose, undo |
| *toslitan* | to tear to pieces |
| *tosniðan* | to cut into pieces |
| *tostencan* | to scatter |
| *tostregdan* | to disperse, scatter |
| *toþindan* | to swell, grow big |
| *toweorpan* | to throw away |
| *ymbgyrdan* | to grid about |
| *ymbsettan* | to set around, surround |

**Without prefixes**

| | |
|---|---|
| *ærwnian* | to marry |
| *brengan* | to bring |
| *ceorfan* | to cut, cut down |
| *cwysan* | to crush |
| *derian* | to injure |
| *drædan* | to dread, fear |
| *edcucian* | to re-quicken, revive |
| *faran* | to go, proceed |
| *fyllan* | to fill |
| *hadian* | to ordain |
| *halgian* | to hallow |
| *hyrdan* | to make hard |
| *scorian* | to refuse |
| *slipan* | to slip, glide |
| *slite* | to slit, tear |
| *swetian* | to make sweet |
| *swolgettan* | to swallow |
| *underfon* | to receive, have given |
| *underþeodan* | to subject, subjugate |
| *wiþerweardian* | to oppose, be adverse to |
| *wrihan* | to uncover, reveal |

**Verbs that form high frequency participles**

| | |
|---|---|
| *forecweþan* | to foresay, predict |
| *foresecgan* | to foretell, predict |
| *sprecan* | to speak (to form 'forsprecen') |

**Some participles whose base verbs are not clear**

*farbodenan*
*fracodan*
*lerede*
*ofhrorenan*
*onfangnan*
*onfengre*
*onfongnan*
*ongunnan*
*ungetemedra*
*hyrnedan*
*pyttedan*
*togeþeoddan*
*utancumena*
*fordgewitenum*
*forlidenan*

# Appendix B

**Prenominal Past Participles in PPCME2 (225 types and 994 tokens in total):**

| Participle | Gloss |
|---|---|
| **ME1 (96)** | |
| *adotede* | adoted |
| *aʒhen* | own |
| *allforrwurrþenn* | all worthed |
| *[allfullfremedd]* | fully trained |
| *allfullwaxenn* | fully waxed |
| *amased* | amazed |
| *[anbichede]* | unsprinkled |
| *[ankennedd]* | only-begoten |
| *[awariede]* | waried |
| *bætenn* | bated |
| *belochene* | looked |
| *[beswikene]* | ceased |
| *bifundenn* | found |
| *[bimasede]* | confused |
| *[bituned]* | enclosed |
| *blessed* | blessed |
| *[boden]* | commanded |
| *borne* | born |
| *brennde* | burned |
| *brochte* | brought |
| *bulltedd* | bolted |
| *clennsedd* | cleansed |
| *clofenn* | clefted |
| *cnotted* | knotted |
| *cnurnede* | knarled |
| *cosan* | chosen |
| *crisstnedd* | Christian-ed |
| *cursed* | cursed |
| *doluen* | delved |
| *drunken* | drunken |
| *[eadiʒen]* | blessed |
| *ʒewerʒede* | made weary |
| *forbodene* | forbidden |
| *fordruʒede* | dried up |
| *forenammde* | forenamed |
| *forgilte* | made guilty |
| *forleiene* | made lie |
| *forrotet* | made rotten |
| *[for-schuppet* | created |
| *[forsprecon]* | foresaid |
| *[forwordene]* | perished |
| *[forwunded* | made |
| *[fremmde]* | trained |
| *fulede* | filled |
| *[fullfremedd]* | fully |
| *gedrefde* | made driven |
| *hadede* | |
| *hallʒhedd* | hallowed |
| *heuen up* | heaved up |
| *hokede* | hook-ed |
| *ibohte* | bought |
| *i-cudd* | |
| *icuret* | |
| *ihealed* | healed |
| *ihuret* | heard |
| *inamde* | named |
| *ischepene* | |
| *isette* | set |
| *islein* | slain |
| *istelede* | staled |
| *istirrede* | stirred |
| *itald* | |
| *iteilede* | |
| *itoʒe* | |
| *iweddede* | wedded |
| *iwerʒede* | made weary |
| *iwrahte* | worked |
| *iwundede* | wounded |
| *læredd* | lered |
| *[læwedd]* | injured |
| *[masede]* | confused |
| *mered* | |
| *mis-limet* | |
| *[nkennedd]* | begoten |
| *orbodene* | |
| *plicht* | pledged |
| *rihhtbiʒetenn* | |
| *rotede* | rotted |
| *schoten* | shot, rushed |
| *scorrcnedd* | scorched |
| *selede* | |
| *slei* | slain |
| *spredde* | spread |
| *þrosshenn* | threshed |
| *toʒe* | tugged |
| *unbesmitenen* | not besmut |
| *unbiliefde* | unbelieved |
| *unlofne* | |
| *unseinede* | |
| *unwemmedd* | unspoiled |
| *up-aheue* | heaved up |
| *waried* | waried |
| *weddedd* | wedded |
| *wereʒede* | made weary |
| *worded* | worded |
| **ME2 (15)** | |
| *Araysede* | raised |
| *corrupt* | corrupted |
| *feþered* | feather-ed |
| *gildan* | golden |
| *iʒoue* | given |
| *lufede* | loved |
| *medlid* | meddled |

| | | | | | |
|---|---|---|---|---|---|
| *merȝþ* | | *hard-soden* | hard-sodden | **ME4 (40)** | |
| *onderstonde* | understood | *hid* | hidden | *aged* | aged |
| *raysed* | raised | *horned* | horned | *armed* | armed |
| *said* | said | *knowe* | known | *bake* | baked |
| *trubled* | troubled | *kutted* | cut | *bedred* | dreaded |
| *vn-made* | unmade | *leded* | leaded | *be-goten* | begotten |
| *vnordaynde* | unordained | *loste* | lost | *benefysyd* | beneficed |
| *zed* | sad (adj) | *maad* | made | *best-beloued* | best-loved |
| **ME3 (74)** | | *marked* | marked | *closyd* | closed |
| *accepte* | accepted | *molton* | molten | *dysposyd* | disposed |
| *avysede* | advised | *mysbeleued* | misbelieved | *enpayryd* | |
| *barred* | barred | *ordred* | ordered | *expressyd* | expressed |
| *beden* | commanded | *oure* | | *fasshenyd* | fastened |
| *beloued* | beloved | *outrage* | outraged | *first-begote* | first-begotte |
| *bigetun* | begotten | *perischede* | perished | *forbeten* | beat down |
| *bonde* | bound | *pilede* | piled | *forgyd* | forged |
| *brent* | burnt | *pownsoned* | | *formente* | |
| *broken* | broken | *prouid* | proved | *for-sayde* | forsaid |
| *brused* | bruised | *pured* | pured | *founde* | found |
| *conceyued* | conceived | *purposid* | purposed | *harneysyd* | |
| *coround* | | *reconsiled* | reconciled | *hurte* | hurt |
| *create* | created | *rented* | rented | *innoumbred* | innumbered |
| *croked* | crooked | *roosted* | roosted | *lerned* | learned |
| *crystende* | christened | *roten* | rotten | *lettered* | lettered |
| *dagged* | dagged | *rymede* | rimed | *leved* | left |
| *dampned* | dampened | *schabbed* | scabbed | *lyfft* | lifted |
| *departed* | departed | *sent* | sent | *maryd* | married |
| *deserved* | deserved | *sode* | sodded | *maymed* | |
| *drawen* | drawen | *stolen* | stolen | *mysavysyd* | |
| *ȝoten* | gotten | *strawed* | strawn | *named* | named |
| *feinid* | fained | *swollen* | swollen | *new-made* | new-made |
| *fix* | fixed | *þwyten* | thwited | *newschaue* | new-shaved |
| *fonned* | fond (adj) | *toren* | torn | *nourisshed* | nourished |
| *fordone* | fordone | *turned* | turned | *paynted* | painted |
| *forfendyd* | | *tynt* | | *pouderyde* | powdered |
| *forsuore* | | *unsleked* | | *repreued* | reproved |
| *fownden* | found | *vnbeleued* | unbeloved | *vnsowid* | unsowed |
| *furrede* | furred | *vncristend* | unchristened | *waken* | waken |
| *gendrid* | gendered | *vnmaad* | unmade | *welbeloued* | well-belove |
| *gilt* | gilted | *vnordeind* | unordained | *wounded* | wounded |
| *glewed* | called loudly | *walled* | walled | *wretthyd* | |
| *grauen* | graven | *willid* | willed | | |

# Appendix C

**Prenominal Past Participles in PPCEME (333 types and 1002 tokens in total):**

**EModE1**
*accused*
*accustomed*
*aduentured*
*alleadged*
*appointed*
*assigned*
*assuered*
*banyshed*
*barded*
*beaten*
*bought*
*bound*
*bownden*
*burned*
*choseyn*
*cloven*
*colerid*
*compassed*
*condemned*
*counterfayde*
*cruded*
*damned*
*disguised*
*diuided*
*dried*
*embatelid*
*ensuryd*
*extorte*
*falyn*
*fashioned*
*fayned*
*garded*
*gilte*
*halowed*
*heyred*
*honied*
*ioyned*
*left*
*limited*
*made*
*maried*
*misordered*
*muffeled*
*nakid*
*norished*
*patched*
*picked*
*ploughed*
*poysoned*
*prepensyd*
*prescribed*
*pretended*
*printed*
*proposed*
*qualified*
*reed*
*required*
*rost*
*ryuilde*
*salted*
*scalde*
*set*
*shorne*
*soddyn*
*spiced*
*squarid*
*stopped*
*sugared*
*supposed*
*suppressid*
*surmised*
*sworne*
*typed*
*uncndemned*
*usurpyd*
*usyd*
*wolled*
*writt*
**EModE2**
*abused*
*accommodate*
*affected*
*approoued*
*atchieued*
*backt*
*baited*
*blotted*
*blynded*
*boilyd*
*borrowed*
*branched*
*brayed*
*butter'd*
*buttoned*
*carued*
*cast*
*cauterized*
*concealed*
*conceauid*
*confined*
*conioined*
*contented*
*crumpled*
*decayed*
*deferred*
*defused*
*dejected*
*demanded*
*deseruid*
*desyred*
*determined*
*diffused*
*discarded*
*disordered*
*dissolved*
*driuen*
*earthen*
*executed*
*expected*
*fixed*
*floten*
*fore-taken*
*forked*
*found*
*fourmed*
*fowld*
*framed*
*fryed*
*gawld*
*gelded*
*given*
*glased*
*greeued*
*growne*
*guilded*
*hidden*
*honored*
*humoured*
*imbost*
*inclosed*
*infected*
*ingraffed*
*ingraven*
*intercepted*
*lifted*
*maymed*
*mencioned*
*mingled*
*molted*
*noted*
*obtayned*
*pickled*
*pitcht*
*pretermitted*
*priviledged*
*proferred*
*profest*
*prohibited*
*prolonged*
*promised*
*propounded*
*received*
*recited*
*redoubted*
*reputed*
*retained*
*retired*
*scattered*
*scratcht*
*sealed*
*seamped*
*seduced*
*settled*
*shaded*
*sorted*
*spilted*
*spotted*
*strained*
*stued*
*sugred*
*suspected*
*tasseled*
*thrumed*
*tilled*
*torne*
*trained*
*vnfained*
*vsurped*
*wasted*
*wished*
*wonted*
*written*
*wrought*
**EModE3**
*abandon'd*
*absented*
*abstracted*

*acquired*
*advanced*
*Alcalizat*
*allotted*
*appropriated*
*attracted*
*benumed*
*bred*
*cankered*
*celeberated*
*chafed*
*changed*
*charred*
*chopt*
*clarified*
*collected*
*compounded*
*concerned*
*confiscated*
*conquered*
*consecrated*
*coulloured*
*covered*
*crucified*
*crudled*
*cut*
*darkened*
*declared*
*deposited*
*depressed*
*designed*
*diluted*
*disabled*
*distended*
*distilled*
*distressed*
*disturbed*
*ejected*
*enclosed*
*enraged*
*erected*
*established*
*excited*
*exiled*
*extinguish'd*
*famed*
*feared*
*figured*
*fired*
*flawed*
*forced*
*forementione*
*forged*
*formed*
*forsworne*
*frozen*
*galled*
*graffed*
*hated*
*hird*
*hooked*
*ignited*
*imagined*
*inchanted*
*included*
*injured*
*intangled*
*interspersed*
*inverted*
*knotted*
*laced*
*laminated*
*led*
*lighted*
*malted*
*manured*
*measured*
*melted*
*merited*
*milled*
*moistned*
*mulled*
*multipled*
*murthered*
*obliged*
*offended*
*overswelled*
*parched*
*paved*
*peaked*
*perjured*
*persecuted*
*perverted*
*petrified*
*plastered*
*pleased*
*plighted*
*pointed*
*polished*
*pollutted*
*pounded*
*praecipitated*
*preconceived*
*premunired*
*prepared*
*proportioned*
*rectified*
*refined*
*registered*
*repeated*
*revealed*
*reveberated*
*ruinated*
*ruined*
*rumpled*
*sanctified*
*sawed*
*scalded*
*scoloped*
*slighted*
*sloped*
*striped*
*studied*
*sunk*
*superraded*
*suspended*
*tinged*
*tried*
*turned*
*undertaken*
*united*
*unweared*
*vanquished*
*vaulted*
*vitrified*
*wedded*
*withered*
*worn*

# Appendix D

**Prenominal Past Participles in PPCMBE (343 types and 1200 tokens in total):**

| | | | | | |
|---|---|---|---|---|---|
| **LModE1** | *degraded* | *inserted* | *tanned* | *combined* | *extended* |
| *admired* | *deified* | *inspired* | *tempered* | *commissioned* | *frequented* |
| *abraded* | *depraved* | *insulated* | *thached* | *compressed* | *given* |
| *adopted* | *deseased* | *intended* | *thretened* | *confounded* | *gravelled* |
| *adored* | *deserted* | *laboured* | *trained* | *confused* | *harassed* |
| *advanced* | *desired* | *laid* | *twisted* | *connected* | *heated* |
| *afflicted* | *disappointed* | *loaded* | *undone* | *consolidated* | *hunted* |
| *affrightened* | *disinterested* | *mangled* | *unfeigned* | *contaminated* | *illumined* |
| *allied* | *distinguished* | *married* | *violated* | *cracked* | *imbedded* |
| *animated* | *distracted* | *misgided* | *vitiated* | *crippled* | *imprisoned* |
| *approved* | *electrified* | *mistaken* | *vitriolated* | *cwsicated* | *increased* |
| *assumed* | *elevated* | *mixed* | *weakened* | *damaged* | *intrenched* |
| *attested* | *engrafted* | *murdered* | *winged* | *debilitated* | *knit* |
| *avowed* | *exalted* | *opressed* | **LModE** | *decided* | *lengthened* |
| *awkward* | *experienced* | *overacted* | *accomplished* | *deformed* | *licenced* |
| *baffled* | *exposed* | *persecuted* | *acknolodged* | *deluded* | *maddened* |
| *balanced* | *fancied* | *poinsned* | *adjourned* | *demolished* | *manacled* |
| *besieged* | *favoured* | *powdered* | *aggravated* | *deserved* | *meditated* |
| *boasted* | *feathered* | *professed* | *agitated* | *destined* | *misconceived* |
| *bottled* | *fenced* | *redoubled* | *ammoniated* | *detached* | *moistened* |
| *camphorated* | *forfeited* | *reformed* | *annexed* | *devoted* | *mottled* |
| *candyed* | *fortified* | *reiterated* | *augmented* | *diseased* | *mutilated* |
| *celeberated* | *frightened* | *renewed* | *awed* | *dispersed* | *named* |
| *charged* | *gilded* | *reserved* | *blistered* | *docked* | *neglected* |
| *clotted* | *hotted* | *revolted* | *burnt* | *domesticated* | *observed* |
| *consigned* | *hung* | *satisfied* | *calculated* | *educated* | *organized* |
| *contrived* | *imeached* | *scolloped* | *captured* | *embroidered* | *overcharged* |
| *corrected* | *impaired* | *sequestered* | *cherished* | *enlighened* | *painted* |
| *crouded* | *indented* | *slaughtered* | *chilled* | *esteemed* | *peapled* |
| *cultivated* | *infatuated* | *spirited* | *civilized* | *exaggerated* | *perturbed* |
| *deceased* | *inflamed* | *split* | *clenched* | *exhausted* | *planked* |
| *decoct* | *inoculated* | *stewed* | *clipt* | *expanded* | *plumed* |
| *decorated* | *inraged* | *sworn* | *collected* | *exploded* | *preconceived* |

*printed*
*protracted*
*proven*
*purposed*
*quarried*
*raised*
*ravelled*
*reduced*
*related*
*respected*
*rigid*
*rolled*
*ruled*
*sabred*
*scarped*
*shattered*
*signed*
*spoken*
*starved*
*stated*
*stiffened*
*stinted*
*stratified*
*submerged*
*swelled*
*tattered*
*toasted*
*torn*
*turbaned*
*uplifted*
*varied*
*venerated*
*wearied*
*well-directed*
*whetted*

**LModE3**

*altered*
*amended*
*appended*
*associated*
*bedevilled*
*bent*
*blended*
*buried*
*chopped*
*concentrated*
*contorted*
*crazed*
*defined*
*delacrated*
*despised*
*detested*
*directed*
*disengaged*
*disffused*
*dishonored*
*disputed*
*drubbed*
*duplicated*
*edged*
*enamoured*
*endowed*
*enforced*
*entailed*
*entwined*
*faded*
*fated*
*fed*
*felt*
*forgone*
*formulated*
*franked*
*galvanized*
*garbled*
*gathered*
*gratified*
*hollowed*
*illuminated*
*implied*
*imposed*
*improved*
*inhabited*
*insinuated*
*isolated*
*jaded*
*landed*
*liveried*
*localised*
*lowered*
*mannered*
*martyred*
*medicated*
*methylated*
*mounted*
*murmured*
*naturalized*
*necessiated*
*neutralized*
*ordered*
*outstretched*
*past*
*pazzuled*
*peptonised*
*perfected*
*petted*
*pitched*
*pledged*
*postponed*
*practiced*
*pressed*
*prolomged*
*quickened*
*reasoned*
*recognized*
*recovered*
*redeemed*
*reefed*
*reflected*
*remembered*
*reproduced*
*reversed*
*ribbed*
*scorned*
*sealed*
*selected*
*sheltered*
*shrugged*
*shut*
*skilled*
*skinned*
*slated*
*specified*
*sprouted*
*stabled*
*steamed*
*stocked*
*stranded*
*stretched*
*sustained*
*swamped*
*thrilled*
*timbered*
*treasured*
*typewritten*
*vacated*
*valued*
*wetted*
*whipped*

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