

The Emergence of Unaccusative Prenominal Past Participles in the History of English

Chigchi Bai

1. Introduction

Past participles (henceforth, abbreviated as “participles”) of unaccusative verbs as well as those of transitive verbs can be used as prenominal modifiers in Present-day English (PE). In this article, the former, as exemplified by (1), are referred to as “unaccusative prenominal participles (UPPs)”, and the latter, as exemplified by (2), are referred to as “transitive prenominal participles (TPPs)”.

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

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

In early English, on the other hand, while TPPs have been attested since Old English (OE), UPPs became available only in Early Modern English (EModE), as we will see in the survey conducted in what follows. To my knowledge, however, this diachronic asymmetry between UPPs and TPPs has not been reported in the literature on English historical syntax.

This article aims to provide an empirical investigation on the distribution of UPPs in the history of English and account for the

emergence of UPPs in EModE in terms of the change in the licensing condition on prenominal participles. The organization of this article is as follows. Section 2 presents a classification of unaccusative verbs as regards their formation of prenominal participles. Section 3 briefly reviews the licensing condition on prenominal participles in PE. Section 4 investigates the distribution of UPPs in the history of English by conducting a survey of historical corpora and *The Oxford English Dictionary* (OED), as well as by examining the historical data in Visser (1963). Section 5 provides an analysis of the emergence of UPPs in EModE, relating it to the change in the licensing condition on prenominal participles. Section 6 concludes this article.

2. Unaccusative verbs and their formation of prenominal participles

Let us begin by asking what kinds of verb count as unaccusative verbs. This article follows the classification proposed by Levin and Rappaport (1995), who claim that unaccusativity is syntactically represented but semantically determined. As shown in Table 1, 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 1. Semantic properties of unaccusative verbs (Based on Levin and Rappaport(1995))

	Types	Members	Causality	Agentivity	Relevant sections in L & R
1	Appearance:	<i>appear, arise, emerge, ...</i>	neither	nonagentive	§ 3.3.1, § 3.3.2
2	Disappearance:	<i>disappear, vanish, ...</i>	neither	nonagentive	§ 3.3.1, § 3.3.2
3	Inherently directed motion:	<i>arrive, come, fall, ...</i>	neither	nonagentive	§ 4.1.2, § 4.2.2
4	Existence:	<i>exist, live, remain, ...</i>	neither	(non)agentive	§ 3.3.1, § 4.1.3

5	Simple position:	<i>hang, lay, stand, ...</i>	neither	(non)agentive	§ 3.3.3, § 4.1.3
6	Entity-specific change of state:	<i>bloom, blossom, flower, ...</i>	internally caused	nonagentive	§ 3.2.1, § 4.2.1
7	Change of state:	<i>bake, break, close, ...</i>	externally caused	nonagentive	§ 3.2.1, § 6.4.1
8	Undirected motion:	<i>bounce, move, roll, ...</i>	externally caused	nonagentive	§ 3.2.1, § 4.1.4

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 (e.g., **an existed solution* (Levin (1993: 250))). In Table 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 change of state 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 involves a transitive verb. Therefore, in order to eliminate this sort of ambiguity, this article does not investigate such verbs as target verbs that could form UPPs.¹

Moreover, participles of entity-specific change of state 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*.² Because a noun-based participle has no unaccusative base and cannot be morphologically distinguished from a verb-based one, entity-specific change of state verbs are excluded from the discussion here.

Thus, *unambiguous cases of UPPs* 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 one hand and neither internally nor externally caused on the other. And it is such *unambiguous UPPs* that are the target participles in the present investigation, although section 5 will also deal with participles based on change of state verbs and verbs of undirected motion in discussing the above mentioned *unambiguous UPPs*. In the remainder of this article, the label “unaccusative” is used to refer to only these three types of verb and the label “UPP” is used to refer to the participle based on them.

3. The licensing condition on prenominal participles

This section discusses the condition on the formation of prenominal participles in PE, in order to provide a basis for understanding how UPPs emerged in the history of English. Bresnan (1982: 24) argues that the subject of a prenominal participle must be a theme, which is stated as “Theme Argument Condition” in this article for expository purposes, as shown in (3) below.

(3) Theme Argument Condition (TAC):

The noun modified by a prenominal participle must be a theme argument of the base verb.

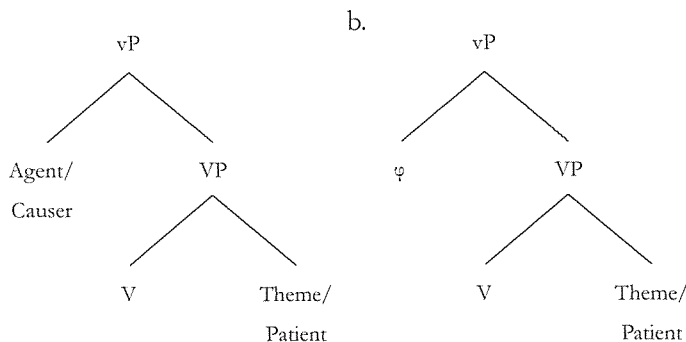
This condition is supported by the fact that participles of unergative verbs, which only take an agent argument, cannot premodify nouns, as shown in (4), whereas participles of verbs that take a theme argument can, as we saw in (1) and (2).

- (4) a. *run man
 b. *coughed patient
 c. *swum contestant (Levin and Rappaport (1986: 654))

The underlying structures of transitive and unaccusative verbs that can be inputs to the formation of prenominal participles are represented in

(5a, b), respectively. In (5a), 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 (5b), 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. Therefore, both transitive and unaccusative verbs can participate in the formation of prenominal participles, which modify the theme/patient argument in accordance with TAC.

(5) Transitive verbs (*write*, *send*, ...): Unaccusative verbs (*arrive*, *fall*, ...):



Note that there is a class of prenominal participles whose formation is not sensitive to verb types and TAC. They include those that have been lexicalized as adjectives (e.g., *a drunken man*, *spoken language*, *fallen spirits*) and those that are combined with a certain adverb or marked with a prefix (e.g., *a well-spoken person*, *a mistaken belief*, *an undescended testicle*). A common characteristic of such participles is that they, unlike ordinary participles, generally do not have verbal meaning. They instead are interpreted as pure adjectives, describing an attribute or property of an entity. For example, *drunken* in *a drunken man* means ‘intoxicated by drinking much liquor’ rather than simply ‘has drunk liquor’ and *spoken* in *spoken language* cannot mean ‘has been spoken’. Moreover, those with a prefix or modifier would be unacceptable without the prefix or modifier (e.g., **a taken belief*, **a spoken person*).³

4. Historical Data of UPPs

This section first examines Visser's (1963) data of prenominal participles of intransitive verbs as a clue to clarifying when UPPs emerged in the history of English. Then, the survey on the distribution of UPPs is 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.

4.1. Investigation Based on Visser (1963)

Visser (1963: 1227) reports that prenominal participles based on intransitive verbs are rare in OE, providing the six examples in (6). A closer look at these examples, however, reveals that they do not instantiate UPPs. Their PE translation and the semantic properties of the verbs involved are given in (7).

- (6) **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 þæt dronke is as a Mous. A *dronke man* woot wel þæt 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, hezel and *zefeallen snaw*.
forsineged : Trin. Hom, (Morris, O. E. Hom. ii) 61, þo *forsinegede men*, þe habbe ð þo sinnes don þe biliggeð to here shrift.
- (7) **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 bre ð er* ‘dead brother’ <disappearance>

gefeallen: *zefeallen snaw* ‘fallen snow’ <inherently directed motion>

forsineged: *forsinegede men* ‘sinful men’ <object unspecified>

First, *drunken* and *forsineged* are unlikely to be UPPs in that their base verbs are transitive verbs with the object unspecified. Nor do *asprungen* and *gebloven*, based on change of state verbs, qualify as UPPs, as discussed in section 2. Moreover, there is good reason that the remaining two participles, *gefaren* and *gefeallen*, are not treated as UPPs, which is related to the aspectual prefix *ge-* on them.² This is because prenominal participles in OE were generally marked with aspectual prefixes like those in (8); they were required to perfectivize a verb and highlight the resultant state denoted by the verb (Brinton (1988: 202ff.) and Elenbaas (2007: 116ff.)), which is a necessary semantic component of prenominal participles.

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

If this is correct, it seems plausible to assume that prenominal participles in OE were subject to a licensing condition entirely different from that in PE: basically, they are required to be marked with aspectual prefixes regardless of the kinds of their base verb.

Visser (1963: 1228–1231) also provides a number of examples of intransitive participles premodifying nouns from Middle English (ME), which are given in (9), with their PE translation and the semantic properties of the verbs involved in (10).

- (9) **Fained**: c1386 Chaucer, C, T. B 2208, *Hise feyned freendes...*
Fordrunken: c1205 Layamon 13517, *Þa iseozen Þa Peohtes for-drunkene crihtes.*
Forsworn: c1300 Amis & Amiloun 1102, *Forsworn man schal neuer spele.*
Knowen: c1449 Pecoock, 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 *shrunken yn hyppis* 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* ð re.

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

- (10) **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’ <lexicalized as an adjective>
Rotten: *roten appul* ‘rotten apple’ <change of state>
Shrunken: *shrunken yn hyppis* ‘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’ <lexicalized as an adjective>
Waxen: *waxen buges* ‘bugs that have fully grown’ <change of state>
Withered: *nydderyt ayk* ‘withered oak’ <change of state>

Among these participles, those which are based on change of state verbs do not qualify as UPPs, for the same reason as mentioned above. Moreover, the base verbs of *for-drunke*, *forsworn* and *knowun* are clearly not unaccusative verbs but transitive verbs with the object unspecified. The remaining *mislived* and *travelled* belong to the class of participles discussed in section 3, which are not sensitive to verb types and the licensing condition on participle formation. The former is marked with the prefix *mis-*, without which, the participle would be unable to premodify a noun. *Travelled* should be considered to have been lexicalized as an adjective in that it does not have the basic sense of the base verb *travel*, which is defined in OED as ‘to go one place to another’. It instead means ‘has travelled, esp. to distant countries; experienced in travel’, according to OED, rather than simply ‘has travelled’.⁵

Turning to the data of prenominal intransitive participles after ModE provided by Visser (1963), 38 out of the 49 participles qualify as UPPs, judging from the semantic properties of their base verbs. The list in (11) shows the relevant participles with the years of the first attested examples in parentheses.

- (11) 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), tipped (1660), toppled (1871), tottered (1570), transfused (1652), transmigrated (1682), transpired (1652), transuded (1827), vanished (1593) (Visser (1963: 1228–1231))

4.2. Investigation Based on the Historical Corpora

Based on YCOE, PPCME2, PPCME and PPCMBE, I have investigated the distribution of TPPs and UPPs 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 2 and 3. While TPPs have been attested since OE, examples of prenominal intransitive participles began to be found in EModE and all of them involve UPPs. Some examples of UPP are given in (12).

Table 2. The distribution of the first occurrences of prenominal participles of transitive verbs⁶

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 3. The distribution of the first occurrences of prenominal participles of intransitive verbs

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

- (12) 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) data in the previous subsection, thereby confirming the emergence of UPPs in EModE.

4.3. Investigation Based on OED

I have also investigated the distribution of UPPs 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 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. The first occurrence years of unaccusative verbs and their prenominal participles^{7,8}

Base verb	Year of base verb	Year of participle	Base verb	Year of base verb	Year of participle	Base verb	Year of base verb	Year of participle
[<i>advance</i>]	1509	[1795]	[<i>rise</i>]	c1200	[1821]	<i>exude</i>	1574	
[<i>arrive</i>]	1297	[1896]	<i>spread</i>	a1300	c1511	<i>gush</i>	a1400	
[<i>ascend</i>]	1382	[1861]	<i>surge</i>	1511	1635	<i>happen</i>	c1375	
<i>burst</i>	1297	1812	<i>tumble</i>	a1300	1649	<i>issue</i>	c1330	
<i>come</i>	c825	1562	<i>appear</i>	1375		<i>leave</i>	a1225	
<i>down</i>	1499	1818	<i>arise</i>	c1000		<i>materialize</i>	1880	
[<i>depart</i>]	c1290	[1599]	<i>awake</i>	c1000		<i>occur</i>	1538	
<i>disappear</i>	1530	1857	<i>awaken</i>	c885		<i>perish</i>	c1250	
<i>emanate</i>	1756	1874	<i>coexist</i>	1677		<i>plop</i>	1821	
[<i>enter</i>]	c1300	1796	<i>derive</i>	1662		<i>plunge</i>	c1380	
[<i>expire</i>]	1455	[1647]	<i>descend</i>	a1325		<i>recede</i>	1480	
<i>fall</i>	c890	1776	<i>die</i>	c1135		<i>result</i>	1432	
<i>flee</i>	c825	1621	<i>emerge</i>	1667		<i>stem</i>	1577	
<i>flow</i>	a1000	1626	<i>ensue</i>	c1500		<i>stream</i>	a1225	

[<i>go</i>]	c825	[1598]	<i>erupt</i>	1657		<i>supervene</i>	1647	
<i>lapse</i>	1641	1667	<i>escape</i>	1292		<i>transpire</i>	1597	
[<i>recur</i>]	1468	[1897]	<i>eventuate</i>	1789		<i>vanish</i>	1303	
[<i>return</i>]	a1366	1600	<i>exit</i>	1607		<i>wax</i>	c897	

This table shows that 22 out of the 54 verbs have prenominal participles. It is important to note that none of these participles were found until the 16th century, which coincides with the conclusion reached in the preceding two subsections. Some examples are given below.

- (13) 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 on the historical data of prenominal participles, their historical development is summarized in the figure below. It is observed that while TPPs have existed throughout the history of English, UPPs were not attested until EModE.⁹

Figure 1. The distribution of TPPs and UPPs in the history of English

	OE	ME	ModE	PE
TPP	—————→			
UPP			—————→	

5. Analysis

Having revealed the distribution of UPPs in the history of English, this section provides an analysis of how they emerged in EModE. Subsection

5.1 proposes that the licensing condition on prenominal participles underwent a change in EModE, leading to the emergence of UPPs. Then, subsections 5.2 and 5.3 address the problem of what factors triggered the change.

5.1. The change in the licensing condition on prenominal participles

As shown in Figure 1, UPPs emerged in EModE and have survived into PE. It then follows that prenominal participles have been licensed by the same condition, namely, TAC in (3), since EModE. On the other hand, the fact that UPPs did not exist in OE and ME indicates that prenominal participles obeyed a condition different from TAC in those periods. As we saw in subsection 4.1, the formation of prenominal participles in OE was subject to the condition that they must be marked with aspectual prefixes. Then, we can assume that with the loss of aspectual prefixes in ME, the following condition, which is referred to as “Transitive Verb Condition” just for expository purposes, was introduced in the licensing of prenominal participles.

(14) Transitive Verb Condition (TVC):¹⁰

The base verb of a prenominal participle must be a transitive verb.

Given TVC, only verbs that can be passivized serve as the input of prenominal participles, so unaccusative verbs cannot form prenominal participles. Note here that TVC is a subset of TAC with there being an overlap in their coverage, because transitive verbs take a theme argument, which corresponds to the noun modified by prenominal participles. It would therefore be conjectured that the effects of TVC became subsumed under TAC, leading to the replacement of the former by the latter. If this is correct, a question will arise how this replacement, as schematized in (15), took place, giving rise to UPPs. The following subsections address this question, arguing that the emergence of a large number of ergative verbs in ME and EModE was a triggering factor for the change in the licensing condition on prenominal participles.

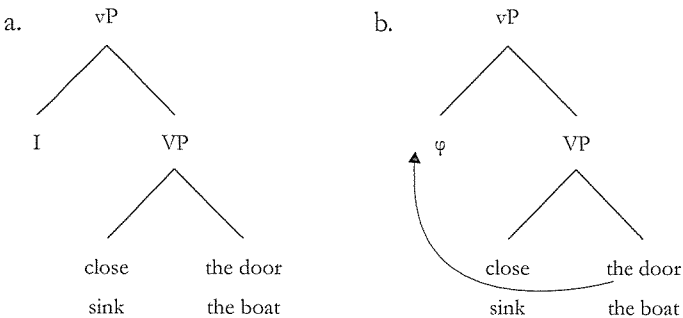
(15) TVC (in ME) → TAC (in EModE)

Here arises the question how TVC became available in ME. The answer to this question has to do with the aspectual prefixes in OE. If Elenbaas (2007: 117ff) is right in claiming that they express the total affectedness of the object of the verb to which they are attached, it would be plausible that it was such affectedness that licensed the pronominal participles in OE and that it came to be expressed by transitive verbs after the loss of aspectual prefixes in ME, because typically only the object of a transitive verb can be affected. Hence the introduction of TVC.

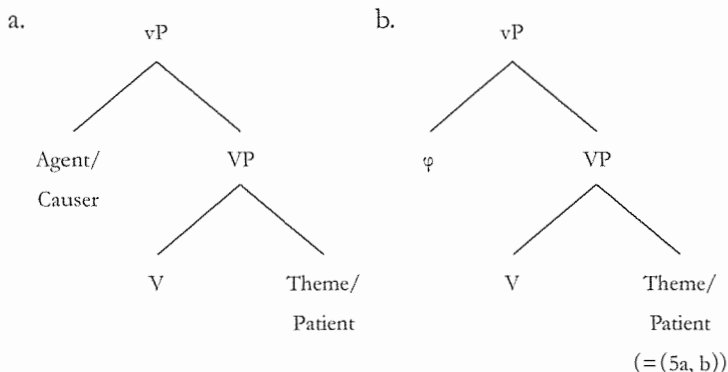
5.2. The trigger: the emergence of ergative verbs

In discussing the trigger for the change in (15), it is worthwhile to note that there is a class of verbs in English that have both causative transitive and unaccusative intransitive variants. Such verbs are known as “ergative verbs”, which consist of change of state verbs and verbs of undirected motion in Figure 1, where the subject of the intransitive variant corresponds to the object of the transitive variant, with both of them being assigned a theme/patient role. The underlying structures of ergative verbs are given in (16), where (16a, b) represents the transitive and intransitive variants, respectively. Note that the two structures are parallel to those of transitive and unaccusative verbs in (5a, b), repeated here as (17a, b).

(16) Transitive (*I closed the door.*): Intransitive (*The door closed.*):



(17) Transitive verbs (*write, send, ...*): Unaccusative verbs (*arrive, fall, ...*):



Returning to the question of how the change in (15) took place, this article claims that the emergence of ergative verbs served as a trigger for this change. This is because prenominal participles based on them have two possible sources, namely (16a, b), which in turn means that the condition at work in their formation should be TAC because it is satisfied by both sources; in contrast, TVC is only satisfied by (16a). In other words, TAC has wider coverage than TVC, which would have promoted the replacement of the latter by the former.¹¹ The conjecture here is that this change was triggered by the emergence of a large number of ergative verbs; language learners in the relevant period would have reanalyzed a prenominal participle which was formerly derived from a transitive verb as that based on the new intransitive variant of the same verb.

Taking the verbs *send*, *close* and *fall* as examples, let us illustrate how the emergence of ergative verbs triggered the change in (15). The prenominal participle of the transitive verb *send* was formed in accordance with TVC, as shown in (18a). *Close* was originally a transitive verb, first attested in c1250 (cf. Table 5), so the formation of its prenominal participle also obeyed TVC. Then, it became an ergative verb as a result of the emergence of the intransitive variant in c1385 (cf. Table 5), and so its prenominal participle came to have the two possible sources in (18b).

Since only TAC is satisfied by both sources, the formation of the prenominal participle of *close* came to obey TAC, rather than TVC. Finally, the introduction of TAC would have made it possible for UPPs like *fallen* to emerge, as shown in (18c).

Next, let us consider the case of *sink* in which the intransitive variant had existed before the transitive variant emerged. This verb was originally an intransitive verb, first attested in c975 (cf. Table 5), and it could not form a prenominal participle because TVC was operative. After its transitive variant emerged in a1300 (cf. Table 5), its prenominal participle came to be formed with the first example attested in 1375 (cf. Table 5). Once it acquired the transitive variant in addition to the intransitive variant, namely, became an ergative verb, its prenominal participle came to have the two possible sources in (18b'), leading to the replacement of TVC by TAC, just as in the case of *close*.

(18) a. the sent letters:

‘I sent the letters.’ (*sent*: agent, theme; cf. (17a)) ← TVC

b. the closed door (transitive > intransitive):

i. ‘I closed the door.’ (*close*: agent, theme; cf. (16a)) ← TVC

ii. ‘The door closed.’ (*close*: φ , theme); cf. (16b)) ← TAC

b'. the sunk boat (intransitive > transitive):

i. ‘I sank the boat.’ (*sink*: agent, theme; cf. (16a)) ← TVC

ii. ‘The boat sank.’ (*sink*: φ , theme); cf. (16b)) ← TAC

c. the fallen tree:

‘The tree fell.’ (*fall*: φ , theme); cf. (17b)) ← TAC

5.3. Testing the scenario

If the scenario in (18) is correct, the emergence of prenominal participles based on ergative verbs must be earlier than that of UPPs. This subsection argues that this prediction is indeed borne out, by investigating the distribution of prenominal participles based on ergative verbs in the history of English.

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. Among the list of 322 ergative verbs in *Wiktionary*, the top 50 verbs by frequency in Corpus of Contemporary American English (COCA) have been chosen as the target of the investigation based on OED. Table 5 summarizes the result of this investigation.

Table 5. The first occurrence years of ergative verbs and their prenominal participles^{12, 13}

Base verb	Year of intransitive	Year of transitive	Year of participle	Base verb	Year of intransitive	Year of transitive	Year of participle
<i>bake</i>	1605	c1000	1620	<i>land</i>	1382	a1300	1835
<i>bend</i>	1398	c1320	1599	<i>lower</i>	1606	1659	1707
<i>break</i>	a1000	851	737	<i>mix</i>	1632	1480	1557
<i>burn</i>	c1000	c1200	1340	<i>move</i>	c1250	1382	1592
<i>change</i>	c1275	c1230	1580	<i>raise</i>	1470	a1220	c1550
<i>clear</i>	1627	1590	a1711	<i>rest</i>	c950	c1205	a1586
<i>close</i>	c1385	c1250	1382	<i>roll</i>	1390	c1375	1467
<i>combine</i>	1712	c1440	1603	<i>separate</i>	1684	1432	1535
<i>connect</i>	1744	1691	1789	<i>shake</i>	c950	a1000	1523
<i>cook</i>	1857	1611	1855	<i>shift</i>	1605	c1000	1595
<i>crack</i>	c1000	c1300	c1440	<i>shut</i>	1470	c1000	1474
<i>develop</i>	1843	1592	1859	<i>sink</i>	c975	a1300	1375
<i>drive</i>	c900	a1067	1641	<i>slide</i>	a950	c1537	1599
<i>drop</i>	c1000	a1340	1600	<i>split</i>	1590	1590	1648
<i>dry</i>	c1200	c888	a1340	<i>start</i>	a1000	1440	c1611
<i>end</i>	a1000	c975	1598	<i>stir</i>	a1000	a1023	1577

<i>expand</i>	1807	1432	1667	<i>stop</i>	1375	1530	1578
<i>fill</i>	c1330	1605	1769	<i>stretch</i>	1485	a1000	1518
<i>float</i>	a1100	1649	1735	<i>tear</i>	1526	c1000	1362
<i>fry</i>	a1000	1607	1608	<i>tire</i>	c725	a1000	1581
<i>freeze</i>	971	1494	1375	<i>wake</i>	c1250	c1400	1649
<i>gather</i>	a891	c725	1388	<i>back</i>	1486	1578	
<i>grow</i>	c725	1774	1340	<i>decrease</i>	1393	c1470	
<i>improve</i>	1650	1292	1617	<i>drain</i>	1587	c1000	
<i>increase</i>	c1380	c1386	1552	<i>open</i>	c1000	c1000	

As shown in Table 5, 46 out of the 50 ergative verbs are found to have their prenominal participles. As shown in the statistical analysis in Table 6, which is based on Tables 4 and 5, the majority of these participles were first attested in ME or EModE, while all cases of UPPs were first attested in EModE or LModE, as we saw in subsection 4.3. This is compatible with the prediction made by the scenario in (18) above. The scenario is also confirmed by the data in Tables 6 and 7, in which it is shown that the majority of unaccusative verbs were introduced into English before EModE, but their prenominal participles were not attested until EModE. This shows a sharp contrast with what is observed for ergative verbs: most of the ergative verbs and their prenominal participles both emerged throughout ME and EModE, as we can see in Tables 6 and 7.

Table 6. The distribution of the first occurrences of the prenominal participles, by period¹⁴

	OE	ME	EModE	LModE
Ergative participles	1/46 (2.17%)	11/46 (23.91%)	27/46 (58.70%)	7/46 (15.22%)
Unaccusative participles	0/22 (0.00%)	0/22 (0.00%)	11/22 (50.00%)	11/22 (50.00%)

Table 7. The distribution of the first occurrences of the base verbs, by period¹⁵

	OE	ME	EModE	LModE
Ergative verbs	5/46 (10.87%)	21/46 (45.65%)	14/46 (30.43%)	6/46 (13.04%)
Unaccusative verbs	5/22 (22.73%)	12/22 (54.55%)	4/22 (18.18%)	1/22 (4.54%)

Therefore, it is reasonable to conclude that the emergence of a large number of ergative verbs in ME and EModE served as a trigger for the change in the licensing condition on prenominal participles, leading to the emergence of UPPs, as schematized in the scenario of (18).¹⁶

6. Conclusion

This article has attempted to account for how UPPs emerged in EModE. It was argued that their emergence was due to the change in the licensing condition on prenominal participles from TVC to TAC and that this change was triggered by the emergence of a large number of ergative verbs in ME and EModE.

Notes

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¹ The possibility that participles based on such type of verbs are unaccusative past participles cannot be simply denied. It is because the possible ambiguity in interpretation of the participle could degrade the precision of the result of the investigation that they are not investigated as target verbs. They, however, must be taken into account when

examining how the emergence and increasing of ergative verbs played a role in the emergence of UPPs, and will be investigated in section 5.

² 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.

³ Bresnan (1995) and Ackerman and Goldberg (1995), among many others, observe that there are also some semantic/pragmatic conditions on prenominal participles. Bresnan (1995: 12ff) states that prenominal participles are required to denote a result state. It then follows that unaccusative verbs in rows 4–5 in Table 1, which do not denote a result state lexically, cannot form a prenominal participle, although they satisfy TAC. Under Ackerman and Goldberg's (1995: 25ff) pragmatic condition, which they formulate as "Paradigmatic Informativeness Constraint", a prenominal participle is acceptable only when it makes the modification semantically more specific. This accounts for why certain UPPs are unacceptable (e.g., **an arrived guest*) but can be improved by the addition of an adverb (e.g., *a recently arrived guest*). On the other hand, Levin and Rappaport (1986), in order to capture the fact concerning the formation of prenominal participles based on ditransitive verbs (e.g., *untaught students*, *untaught skills*), claim that a noun modified by a prenominal participle must be an argument to stand as the sole NP complement of its base verb. However, these conditions are unlikely to be involved in the emergence of UPPs, as will be clear in later sections.

⁴ Specifically, it is the prefix rather than the base verbs *feallan* and *feran* that assigns their participles the ability to premodify nouns. This is because after the loss of aspectual prefixes in ME, these two verbs as well as many others could no longer form prenominal participles. It would then follow that verbs like *feallan* and *feran*, when not marked with a prefix, could not form prenominal participles on their own unlike their PE counterparts, though they may count as unaccusative verbs.

⁵ The online Collins English Dictionary gives this word the following definition: 'having experienced or undergone much travelling' (<http://www.collinsdictionary.com/English/travelled>) and the online Free Dictionary the following definition: 'familiar with many parts of the world' (<http://www.thefreedictionary.com/travelled>). Incidentally, *mislived* is obsolete in PE.

⁶ The periodization of the four corpora is as follows: Old English (O1: –850, O2: 850–950, O3: 950–1050, O4: 1050–1150), Middle English (M1: 1150–1250, M2: 1250–1350,

M3: 1350–1420, M4: 1420–1500), early Modern English (E1: 1500–1569, E2: 1570–1639, E3: 1640–1710), late Modern English (L1: 1700–1770, L2: 1770–1840, L3: 1840–1900.

⁷ The verbs/participles that also appear in Visser's (1963) data are enclosed in square brackets.

⁸ That some of the verbs in Table 4 were not attested with their prenominal participles does not necessarily mean that they cannot participate in the formation of UPPs, as shown in the following examples from other sources than OED. See also note 1 for related discussion.

- (i) a. *the recently emerged forces of the Left* (COCA)
 b. *an escaped convict* (Bresnan (1995: 12))

⁹ By utilizing OED, I have also investigated the distribution of prenominal participles based on entry-specific change of state 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, as we saw in section 2, this result would be compatible with the conclusion reached in this section that UPPs emerged in EModE.

- (i) 1646 CRASHAW Steps to Temp. 29 A mouth, whose *full-bloom'd lips* .. are roses.
 (OED)

¹⁰ A reviewer noted that passive participles and unaccusative participles do not differ where their syntactic structures are concerned, in which *v* does not bear an agent argument. TVC assumed here, however, is only concerned with the base verb; the condition constrains the base verb and the syntactic structure of the participle is not crucial in determining the licensing condition.

¹¹ This amounts to saying that the relevant change is from 'the noun modified must be a theme argument of a transitive verb' to 'the noun modified must be a theme argument of either a transitive verb or an intransitive (unaccusative) verb', with the base of prenominal participles expanding from transitive verbs to 'any' verbs taking a theme argument. Alternatively, it might be that both TAC and TVC were available at some point in ME; then, TVC, subsumed under TAC, became unavailable due to the emergence of ergative verbs.

¹² It must be noted that the years given in the table are only of the relevant examples which 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' (OED) in fact does not participate in the causative alternation, and so this use of the present verb is not counted in the table.

¹³ As we can see in Table 5, *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. This might indicate the time when TAC was introduced. However, given that there were no other verbs than *freeze* and *grow* showing this peculiar behavior before EModE, TVC might have been available throughout the fourteenth and fifteenth centuries (along with TAC), implying that the change in (15) was in fact a long-term process. Exceptionally, the prenominal participle of *break* was attested (in 737) before both its transitive and intransitive variants emerged. This, however, would be attributed to the peculiarity of the licensing condition on OE prenominal participles (cf. note 8).

¹⁴ 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.

¹⁵ Note the asymmetry between ergative and unaccusative participles: the former were attested, while the latter were not in ME. This asymmetry follows naturally from the scenario in (18). In particular, UPPs, 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 take the lead. Put another way, what serves as the trigger for the change in the licensing of prenominal participles must precede the analogy to apply to the emergence of UPPs. If we take ME/EModE to be the emergence time of the trigger, it follows naturally that EModE/LModE would be that of UPPs.

¹⁶ The reader might wonder why there emerged in the first place a large number of ergative verbs throughout ME and EModE. Intriguing as this question may be, it does not seem to be directly related to how UPPs emerged, which is the main concern of this article. So, I do not make an issue of it here, leaving it for future research. But refer to Gelderen (2011) for related discussion.

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Synopsis

The Emergence of Unaccusative Prenominal Past Participles in the History of English

Chigchi Bai

This article has reported a historical fact that past participles of unaccusative verbs in English were not available as prenominal modifiers until EModE and explained how they became available in EModE. It was argued that the condition that licenses past participles as prenominal modifiers was changed from ‘the base verb must be a transitive verb’ to ‘the noun modified must be a theme argument of the base verb’ and that the trigger for this change was the emergence of a large number of ergative verbs during ME and EModE, which have both transitive and intransitive variants, being theme assigners in either case. It was also argued that when past participles of the largely emerged ergative verbs premodified nouns in ME and EModE, it was possible for them to be interpreted as derived from the intransitive variant, which in turn made it possible for past participles of unaccusative verbs to premodify nouns, by analogy.