Null and cognate objects and changes in (in)transitivity

Evidence from the history of English

Nikolaos Lavidas
Aristotle University of Thessaloniki
nlavidas@auth.gr

Abstract: This paper examines the historical development of null objects (e.g., **He took the loaf and held Ø between his hands*) and cognate objects (e.g., *He sang a song*) in English. We will demonstrate that English lost definite/referential (and indefinite) null objects (only generic null objects are possible in present-day English, e.g., *They have the ability to impress and delight Ø*) but extended the range of cognate objects (which is now also possible with activity/event nouns, e.g., *He smiled a disarming smile*). Cross-linguistic diachronic comparison (using data from the history of the Greek language) reveals that the historical development described is language-specific and that both directions of change (loss or rise) of null and cognate objects are possible. We will test the hypothesis that there is a connection between the availability of such (de)transitivization processes and changes that affect the syntactic representation of aspectual distinctions. More precisely, we will examine the hypothesis that in English, both the loss of definite null objects and the rise of cognate objects with activity/event nouns are linked to the grammaticalization of the viewpoint (progressive) aspect (*be* + V + *ing*). We will show that the grammaticalization of the viewpoint aspect in English has not affected the development and loss of null object constructions. However, the grammaticalization of the viewpoint aspect appears to have progressed in parallel with activity/event-noun cognate objects.

Keywords: null objects; cognate objects; aspect; history of English

1. Introduction

In the case of null direct objects (omission of the direct object), a transitive verb is detransitivized, whereas in the case of cognate direct objects (addition of a cognate direct object), an intransitive verb is transitivized. According to the traditional approach to transitivity, transitives have two arguments (one – external – argument in the subject position and one – internal – argument in the object position), whereas intransitives have only one argument and are distinguished as unergative (e.g., *dance, run, walk, work*, etc.) and unaccusative (e.g., *burn, melt, fall, happen*, etc.) verbs. Null objects (in constructions in which a typically transitive verb appears without a phonologically realized object) have been assumed to be empty topics or pros in most analyses. We will not examine the different syntactic

analyses of null and cognate objects. For example, Rizzi (1986) argued that a null object is an arbitrary pro associated with the interpretation [+ human][1] and is phonologically null but projected and syntactically active. Instead, we will only focus on their diachrony and the causes that make null objects available in one diachronic period but not in another. Cognate objects (in constructions in which a typically intransitive verb combines with an NP that has the same meaning and/or the same morphological stem – e.g., *John smiled a happy smile,* cf. Jones 1988) have been analyzed as arguments (Massam 1990; Hale & Keyser 1997, among many others) or as adjuncts (Jones 1988; Mittwoch 1998, among many others).[2] According to Roberge (2002) and Cummins and Roberge (2004), null or implicit objects can be attributed to a Transitivity Requirement (TR) (see below), just as null subjects are due to the Extended Projection Principle (EPP). The TR hypothesis states that the position of objects is always syntactically present. Both null and cognate objects have been considered evidence for the TR hypothesis, which will be an important basis for much of the argumentation in this paper.

Previous studies of null and cognate objects have emphasized the nature of null objects or cognate objects and the conditions that constrain their presence and have focused less on the changes in their availability or on a comparison of the development of null and cognate objects. Van der Wurff (1997) has examined null objects in Indo-European, discussing some English data (along with data from Ancient Greek and some other ancient Indo-European languages). He has argued that early Indo-European languages (Old English, Early Greek, Latin, Sanskrit, Persian, and Old Icelandic) allow null objects in sentences that refer to actions or states involving a definite object and that Proto-Indo-European most likely also allowed definite null objects. Luraghi (1997; 1998a;b; 2003) has demonstrated that Latin and Greek null objects are conditioned either by discourse (referring to highly topical and non-focused information) or syntactically (occurring in syntactic environments that trigger the omission of weak direct objects) and that there are communicative differences between null objects and clitics. Luraghi (2004) has argued that the syntax of null objects can be better understood in connection with other

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[1] We cannot adopt Rizzi's (1986) analysis because many of the cases of null objects that we discuss below do not involve [+ human] referents. We leave this issue open for future research.

[2] Pereltsvaig (2002) and Nakajima (2006), however, argued that there can be two types of cognate objects, adjunct and argument cognate objects, in the same language.

types of anaphoric devices (e.g., pronouns and clitics) and has provided evidence for the reconstruction of Proto-Indo-European null objects. Horrocks and Stavrou (2010) have examined the reasons for the presence of "aspectual" cognate objects[3] only in some languages and explored the differences among Modern English and Ancient and Modern Greek cognate object constructions. They related their findings to their analyses regarding the presence or absence of telicity-shifting constructions (Horrocks & Stavrou 2003; 2007): the availability of such shifts correlates with whether a language has a grammaticalized viewpoint aspect in verbal stems.

This paper explores some diachronic aspects of these (de)transitivization processes. Thus, we will state and test hypotheses regarding questions that concern (a) the directions of the development of null and cognate objects in English (i.e., the loss of the definite and indefinite types of null objects and the rise of activity/event-noun cognate objects); (b) cross-linguistic parallel or non-parallel diachronic developments (as evidenced from the comparison with a non-Germanic, Indo-European language, Greek, which demonstrates that changes in null and cognate objects appear to be language-specific); and (c) the type (if any) of historical correlation between aspect and (de)transitivization processes. This last issue is related to the following questions. Does the grammaticalization of progressive viewpoint aspect affect null objects? Is the grammaticalization of the progressive aspect related to the availability of activity/event-noun cognate objects?

2. The data: Null and cognate objects in diachrony

2.1. Null objects in diachrony

Two primary classes of null objects have been distinguished (cf. Huang 1984; Lambrecht & Lemoine 1996; Giannakidou & Merchant 1997; Larjavaara 2000; García Velasco & Portero Muñoz 2002; Panagiotidis 2003; Cummins & Roberge 2004; 2008; Tsimpli & Papadopoulou 2006): (i) null objects with a **specific** referent that was introduced in the previous discourse ("definite or referential null objects")[4] and (ii) null objects with

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[3] "Aspectual" cognate objects, or, with another term, activity/event-noun cognate objects of the type *smiled a winning smile (and left), coughed a sinister cough (and pulled the trigger).*

[4] We must note that many of the examples of definite null objects in the data and the relevant literature have a coordinate verb. We will not distinguish these examples

an indefinite (or no) antecedent present in the discourse ("indefinite or non-referential null objects" with context-free/nonspecific interpretation). For example, Larjavaara (2000) has distinguished "latent" (definite) and "generic" (indefinite) null objects with regard to the ability of the hearer to identify a possible referent. Lambrecht and Lemoine's (1996) definite and indefinite null objects describe null objects that must be interpreted as referring to an entity in the discourse and null objects that cannot refer to an entity in the discourse, respectively.

In Modern English (ModE), definite (or specific referent or latent) null objects are not possible (1), but even indefinite antecedent null objects are not accepted by all native speakers (2).[5] If we compare null object constructions in ModE with those in Modern Greek (ModG), the distribution of null objects appears to be language-specific. Specific/definite referent null objects are not possible in ModG (3), but indefinite antecedent null objects are possible even with verbs that express accomplishments (4).[6]

> Null object with a **specific** referent introduced in the previous discourse ("definite or referential null object"):

(1) A: I told you to bring **your black pen**.[7]
     B: I brought *(**it**).

> Null object with **no antecedent** present in the discourse ("indefinite or non-referential null object" with context-free/nonspecific interpretation):

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from other examples of definite null objects (such as (1)). Hence, we will assume that if the antecedent is present in the discourse, the object (null or overt) is definite.

[5] Only the subtype of generic (modal) indefinite null objects is available without restrictions or disagreement (between scholars or native speakers) in Modern English:

(i) They have the ability to **impress** and **delight**.

According to the relevant literature, however, this subtype of indefinite null objects appears to be available in all languages and periods.

[6] Null objects are possible only with non-core transitive (non-causative) verbs; core transitive verbs, i.e., verbs that participate in causative–anticausative alternations (Levin & Rappaport Hovav 1995; 2005; Levin 1999), obligatorily express the patient argument (the argument that undergoes the change of state) in all contexts (Hout 2000; Ritter & Rosen 2000; Rappaport Hovav & Levin 1998; Lavidas forthcoming). Hence, the discussion in section 2.1 (and in the entire article) refers only to transitive non-causative verbs (and not to causative/alternating unaccusative verbs).

[7] We mark the antecedent in bold.

(2) The war started. */?The enemies destroyed and burnt **∅**.[8]

(The interpretation is 'The enemies destroyed and burnt many things (objects, places, houses, etc.)'.)

(3) A: Efere   o   Janis   **ta**   **vivlia**?
    brought.3sg the.nom Janis.nom the.acc books.acc
    'Did Janis bring **the books** (he promised)?'

    B: Ne, *(**ta**)   efere.
    yes,   them.acc brought.3sg
    'Yes, he brought [**them**].'

(4) O   polemos arhise. I   ehthri   katestrepsan ki   ekapsan   **∅**.
    the war   started the.nom enemies.nom destroyed.3pl and burnt.3pl
    'The war started. The enemies destroyed and burnt.'

    (The interpretation is 'The enemies destroyed and burnt many things (objects, places, houses, etc.)'.)

Old English (OE) is different from ModE in that it allows definite null objects (ex. (5), (6); cf. Visser 1963–1973 [2002], 525). If we follow Visser, we expect definite null objects to be possible in OE and Middle English (ME) but to become rare in the 16th century and to disappear subsequently (see also the results of the corpus study below). Regarding definite null objects, examples from OE such as (7) demonstrate non-repetition of the object in cases for which ModE must use a pronoun (8):

(5) on sumre stowe **he** wæs þæt man mid his handa nealice **∅** geræcean mihte,
    in one   place it was that one with his hands nearly   reach.inf could
    in sumre eaþelice mid heafde **∅** gehrinan
    in one   easily   with head   touch.inf
    [That house was made corner-wise or oblong, not quite after the custom of men's work, so that the walls should be straight, but it appeared rather like a cavern; and frequently the stones as from a cliff steeply projected. **The roof** also was of various heights,][9] 'in one place, **it** was such (it was low enough) that one could nearly reach [**it**] with one's hand, in another place it was such (it was low enough) that one could easily touch (strike) [**it**] with one's head.'
    (MichaelMor[BlHom__17]: 207.193.2650; cf. van der Wurff 1997)

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[8] For some native speakers, examples that contain indefinite null objects are considered grammatical (in contrast with examples that contain definite null objects), whereas other native speakers accept neither definite nor indefinite null objects (see below).

[9] We follow Morris's (1874) translation here.

(6) He   nam   **hlaf**   and 𝟎 heold   betweox his handum.
     he.nom took.3sg loaf.acc and   held.3sg between his hands
     'He took **the loaf** and held [**it**] between his hands.'
     (Wulfstan, Polity (Jost) p. 228 par. 117; from Visser *op.cit.*, 525)

(7) Nymþe liges fæþm   𝟎 swulge   on swaþule.
     unless fire clasp.nom   engulfed.3sg in smoke
     [So well had weened the wisest Scyldings that not ever at all might any man that
     bone-decked, brave **house** break asunder, crush by craft,] 'unless clasp of fire in
     smoke engulfed [**it**].'[10]
     (Beowulf 781–782; cf. Visser *op.cit.*, 528)

(8) *[Not ever at all might any man that bone-decked, brave **house** break asunder, crush
     by craft,] unless clasp of fire in smoke engulfed *(**it**). (ModE)

Figure 1 presents the results of a corpus search regarding the presence of
overt direct objects during different periods of the history of the English
language. The hypothesis is that if there is an increase in the number of
overt direct objects as described by Visser, the increase should be evident
in the corpora. We searched for changes in the presence of verbs that take
a DP-complement (in the genitive, dative, or accusative cases) in the York-
Toronto-Helsinki Parsed Corpus of Old English Prose (YCOE), the Penn-
Helsinki Parsed Corpus of Middle English (PPCME2), the Penn-Helsinki
Parsed Corpus of Early Modern English (PPCEME), and the Penn-
Helsinki Parsed Corpus of Modern British English (PPCMBE) (Kroch
& Taylor 2000; Taylor et al. 2003; Kroch et al. 2004; 2010).[11] Because
there is no coding for empty objects and the different types of null objects,
we opted to search for all clauses that contain a verb and a direct object
(in any morphological case) in the specific corpora and to compare them
with all clauses that contain a verb but no direct object. The results refer
to non-auxiliary verbs in main or subordinated clauses (but not to objects
of infinitives).

A Pearson chi-square test was performed to assess the relationship
between the periods and the development of overt direct objects. The re-

[10] We follow Gummere's (1910) translation here.

[11] The chronological periods (according to the York, Helsinki, and Pennsylvania cor-
pora) in all figures and tables are the following: O2 (Old English; 850–950); O3
(Old English; 950–1050); O4 (Old English; 1050–1150); M1 (Middle English; 1150–
1250); M2 (Middle English; 1250–1350); M3 (Middle English; 1350–1420); M4
(Middle English; 1420–1500); E1 (Early Modern English; 1500–1569); E2 (Early
Modern English; 1570–1639); E3 (Early Modern English; 1640–1710); MBE (Mod-
ern British English; 1700–1914).
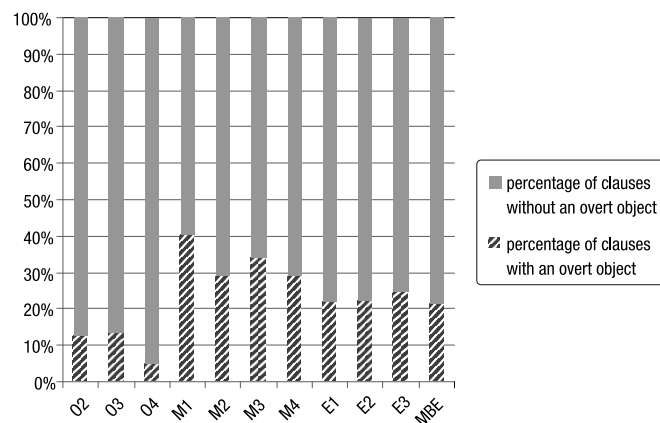
	Periods										
	02	03	04	M1	M2	M3	M4	E1	E2	E3	MBE
Verbs + overt direct object	12.43	13.24	4.97	40.18	29.05	34.06	29.13	21.90	22.14	24.68	21.43
Verbs without an overt direct object	87.57	86.76	95.03	59.82	70.95	65.94	70.87	78.10	77.86	75.32	78.57

Figure 1: The development of overt direct objects: the percentage of clauses with an overt object vs. the percentage of clauses without an overt direct object.[12]

sults were statistically significant for the comparison between O4 and M1 ($\chi^2 = 35.46$, $p < .001$), with an effect size of $\varphi = .42$, which is a large size effect. The results confirm Visser's remarks regarding the increase in the presence of direct objects during the Middle and Early Modern English periods (but not with statistically significant results) and also reveal another aspect of the development of overt and null direct objects. The primary difference and change in the presence of null and overt direct objects can be observed from the end of the OE period to the beginning of the ME period. Hence, a possible explanation for the changes in the presence of null objects should consider other developments in English grammar during this specific period.

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[12] In the corpus studies presented in this article, we do not consider any other type of variation between the time periods represented because the data are discussed and analyzed as the frequency at which the phenomena occur vs. those cases in which the syntactic alternatives occur (following, among many others, Kroch 1989; Pintzuk 2002).

Regarding cross-linguistic evidence, the same direction of change is evident in the diachrony of definite null objects in Greek: Ancient Greek (AG) appears to have had fewer restrictions in allowing null objects than ModG. Examples of definite null objects can be found in Homeric and Classical Greek (9a) but not in ModG (9b) (van der Wurff 1997; Luraghi 2003; 2004).

(9) a. [hoi dè taûta akoúsantes autoí te êsan polù prothumóteroi kaì toîs állois ekséngel-lon. eisêisan dè par' autòn hoí te stratēgoì kaì tôn állōn hellénōn tinès aksioûntes eidénai tí sphísin éstai, eàn kratésōsin.]

ho   dè empimplàs **hapántōn** tḗn   gnḗmēn   𝟎 apépempe.
the.nom.sg prt satisfy.ptcp all.gen   the.acc expectation.acc   dismissed.3sg

[When they heard these words, the officers were far more eager themselves and carried the news away with them to the other Greeks. Then some of the others also sought Cyrus' presence, demanding to know what they should have, in case of victory.][13] 'And he (Cyrus) satisfied the expectations of **all (every one of them)**, and he dismissed [**them**].'

(Xenophon, Anabasis 1.7.8; from Luraghi 2003, 169)

      b. [Epita apetisan na mathun apo ton Kiro ti tha parun stin periptosi nikis.]

Afu ikanopiise tis prosdhokies **olon**, o   Kiros   *(**tus**)   edhiokse.
after satisfied   the expectations all.gen the Cyrus.nom them.acc dismissed.3sg

[Then they demanded to know from Cyrus what they should have in case of victory.] 'Having satisfied the expectations of **all (every one of them)**, Cyrus dismissed [**them**].' (ModG)

If we compare the development of null objects in English with the changes in null objects in Greek (table 1), we observe the same direction of change for the definite type of null objects in both languages but not for the indefinite type of null objects (which becomes ungrammatical for some native speakers of Modern English but remains grammatical for all native speakers of Modern Greek (9c)).

(9) c. Null object with **an indefinite (or no) antecedent** present in the discourse ("indefinite or non-referential null objects" with context-free/nonspecific interpretation):

O   polemos arhise. I   ehthri   katestrepsan/katestrefan 𝟎
the war   started the.nom enemies.nom destroyed.ipfv/pfv.3pl

ki   ekapsan/ekeghan 𝟎
and burnt.ipfv/pfv.3pl

'The war started. The enemies destroyed and burnt.'
(The interpretation is: 'The enemies destroyed and burnt many things (objects, places, houses, etc.).')

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[13] We follow Brownson's (1922) translation here.

Table 1: Null objects (with transitive verbs) in OE, ModE, AG, and ModG.

	Null objects	
	Definite	Indefinite
OE	✓	✓
ModE	∗	?/∗
AG	✓	✓
ModG	∗	✓

2.2. Cognate objects in diachrony

Three basic types of cognate object constructions have been recognized in the relevant literature (cf. Jones 1988; Massam 1990; Macfarland 1995; Mittwoch 1998; Pereltsvaig 1999; Horrocks & Stavrou 2010). The first type is cognate objects with **typical transitives** (10)–(11). These objects are cognate objects with transitive verbs that can take both regular direct objects and direct objects that are morphologically cognate. Hence, cognate objects of the first type have concrete meanings, just like other possible objects for transitive verbs; they can be any type of DP (singular or plural, for example), and they can freely be passivized.

(10) They too want to **write** a **writing** that will antagonize. . .

(11) O   Janis **eghrapse** ena   dhakrivrehto **ghrama**.
       the Janis wrote.3sg a.acc tearful.acc   writing/letter.acc
       'Janis wrote a tearful letter.'

The second type is cognate objects with intransitive verbs (**transitivizing cognate object constructions**; Horrocks & Stavrou 2010), cf. (12)–(13). Transitive use of the verbs that participate in these constructions is less typical than intransitive use, and their passivization is not common. In cases in which the cognate object is indefinite, singular in number and occurs with an adjective, the cognate object construction may be synonymous with a similar adverbial modification of the verb.

(12) She **sang** the **song** in Spanish.

(13) **Traghudhise** ena   poli ghnosto   **traghudhi**.
       sang.3sg   a.acc very known.acc song.acc
       'S/he sang a well known song.'

The third type of cognate object is **activity/event-noun cognate objects**. Activity/event-noun cognate objects are non-referential arguments and are different than the other types of cognate objects with respect to passivization (14a), topicalization (14b), questions (14c), quantification (14d), and modification (14e).

(14) a. $^{??}$A (winning) **smile** was **smiled** by the winner.

    b. *A (winning) **smile**, no one **smiled**.

    c. ***What** did she **smile**?

    d. $^{?}$She **smiled** (all the, some, . . .) **smiles**.

    e. She **smiled** a (winning) **smile** (*a grin).   (Horrocks & Stavrou 2010)

The distribution of cognate objects appears to be language-specific because cognate objects of the third type (activity/event-noun cognate objects) are grammatical in ModE but ungrammatical in ModG (15).

(15) ***Hamojelase** ena   afoplistiko   **hamojelo**.
     smiled.3sg   a.acc disarming.acc smile.acc
     'He smiled a disarming smile.'

According to Visser (1963–1973 [2002], 415), the activity/event-noun cognate construction is a recent development in English. If we follow Visser (see also the results from the corpus study below), we expect activity/event-noun cognate objects to be rare in OE but to be found with increasing frequency in ME and E(arly) ModE (16) and to become frequent in ModE. This type of cognate object can be linked to the combinations of intransitive verbs such as *steorfan* 'die', *libban* 'live' and *slepan* 'sleep' with a dative or instrumental case or with a PP (17a, b).

(16) Ere   the Bat hath **flowne** His Cloyster'd **flight**.
    before the bat has flown his cloistered flight
    'Before the bat flies his cloistered flight.'
                 (Shakesp., *Macb.* III, ii, 40; from Visser *op.cit.*, 417)

(17) a. **With** deth   thou   shalt   die.
       with death you.nom shall.2sg die
       'You shall die a death.'   (Wyclif, Gen. 2, 17; from Visser *op.cit.*, 415)

    b. To maken hire **on** shameful deeth to deye.
       to make her on shameful death to die
       'To make her to die a shameful death.'   (Chaucer, *C. T. B.* 591; cf. *idem.*)

Table 2 is the result of a search of the online version of the *Oxford English Dictionary* (OED), which includes information regarding and examples of the first appearances of verbs and constructions. We collected 59 verbs that could take a cognate object during a particular period (or during several periods) of the English language and for which there is a clear description (or example) of the **first** appearance of their cognate construction in the OED. Then, we searched for the 59 cognate constructions in the historical corpora (see fn. 11 above), but the search yielded no significant results for most of them (there are **not many** examples of these cognate constructions in the specific electronic corpora; thus, the frequency of their appearance in the corpora cannot be tested). We present here the results for the cognate construction with the verb *die* and the direct object *death* (table 3). The numbers in table 3 represent the frequency of appearance in the electronic corpora of the *die + death* cognate construction per 10k clauses. What we would like to test here is the period in which these cognate constructions first appear and whether there is a period in which they become more frequent and common. Because this examination depends on lexical characteristics (and the corpora size and the registers differ), it is evident that we cannot make general conclusions on the basis of these tables (and the frequencies of the specific constructions), but only on the basis of the data regarding the chronology of **first appearances** (for example, we will not examine the slope and intercept parameters – see below).

Table 2: New cognate constructions per period. Number of cognate constructions that first appeared in each period (according to a search in the etymological information included in the online OED).

O2	O3	O4	M1	M2	M3	M4	E1	E2	E3	MBE
0	0	3/59	0	7/59	8/59	6/59	1/59	7/59	8/59	19/59
		(5.08%)		(11.86%)	(13.56%)	(10.17%)	(1.69%)	(11.86%)	(13.56%)	(32.20%)

Table 3: Frequency of the *die + death* cognate construction in the electronic corpora (Max/1k).

O2	O3	O4	M1	M2	M3	M4	E1	E2	E3	MBE
0	0	0	0	0	6.1	10.3	5.9	7.1	0	5

A Pearson chi-square test was performed for table 2 to assess the relationship between the periods and the development of cognate constructions. The results with respect to the new cognate constructions were statisti-

cally significant for most of the periods (because this construction heavily depends on lexical characteristics) and, primarily, for the following comparisons: (a) between M1 and M2 ($\chi^2 = 12.61$, $p < .001$), with an effect size of $\varphi = .25$, which is a medium size effect, (b) between M4 and E1 ($\chi^2 = 6.45$, $p = .01$), with an effect size of $\varphi = .18$, which is a small size effect, and (c) between E1 and E2 ($\chi^2 = 8.19$, $p = .004$), with an effect size of $\varphi = .20$, which is a small size effect. The results with respect to the $die + death$ cognate construction were statistically significant primarily for the comparisons (a) between M2 and M3 ($\chi^2 = 6.02$, $p = .01$), with an effect size of $\varphi = .06$, which is a small size effect, and (b) between E2 and E3 ($\chi^2 = 7.06$, $p = .01$), with an effect size of $\varphi = .06$, a small size effect.

The results confirm Visser's remarks that the cognate constructions were common during the Middle English period (after 1250) (18a–i). Regarding the particular cognate construction $die + death$ (19a–b), we find the **first examples** of this construction after 1350 and **its highest frequency** during the period from 1420 until 1500.

(18) a. [. . .] or to **laboure** oother **labour**.
(*Pilgrimage Lyfe Manhode* (Cambr.) (1869) 99; c1450)

b. Efter þire wordis A lowde **laȝter** he **loȝe**.
(Wars Alexander (Ashm.) (1989) l. 96; c1450 (1400))

c. The ladye **lough** a loud **laughter**, As shee sate by the king.
(King Estmere l. 235 in D. Laing, *Early Sc. Metrical Tales* (1889) 245; c1470)

d. When tongues speake sweetely, then they **name** her **name**.
(Shakespeare, *Love's Labour's Lost* iii. i. 161; 1598)

e. He makes no other Answer than, that he **knows** his own **know**.
(P. Gibbes, *Hist. Lady Louisa Stroud* II. 176; 1764)

f. The gaunt hobbledehoy **grinning** a very unlovely **grin**.
(G. A. Sala, *Journey due South* (1887) i. xxvi. 356; 1884)

g. Mr. Weller junior **smiled** a filial **smile**.
(Dickens, *Pickwick Papers* (1837) xxiii. 238; 1836)

h. And divers hundred thousand fools may **vote** a **vote** untampered with by one wise man.
(R. Browning, *Prince Hohenstiel-Schwangau* 65; 1871)

i. Catharine **blushes** a **blush** of anger.
(Scott, *Fair Maid of Perth* iii, in *Chron. Canongate* 2nd Ser. III. 53; 1828)

(19) a. And siþen dobil **dede** to **dei**
'and, then, to die a double death'
(*Cursor Mundi* (Gött.) 952; a1400)

b. I ne reche, what **deþ** he **dige**, Siþþe he be cold.
'I do not care what death he dies, as long as he is cold.'
(*Sir Beues* 341, a1400)

Comparisons between OE and ModE and between AG and ModG (table 4)
demonstrate that (a) more types of cognate objects are used in ModE than
in ModG because the third type of cognate object is ungrammatical in
ModG; (b) more types of cognate objects are found in ModE than in OE;
and (c) fewer types of cognate objects are found in ModG than in AG
(and use of the second type of cognate objects has reduced in Greek).[14]
Examples such as (20) and (21) (with cognate objects of the third type)
are ungrammatical in ModG (in contrast with ModE) but grammatical in
AG (similar to ModE) (22)–(23).

(20) *__Pedhefse/morfose__ aftus   aksehasti   __pedhia/morfosi__.
     taught.3sg   them.acc unforgotten.acc teaching/education.acc
     'S/he taught them an unforgotten lesson.'   (ModG)

(21) *__Aghonizome__ afton   ton   __aghona__.
     contend.1sg this.acc the.acc contest.acc
     'I undergo this contest.'   (ModG)

(22) all' ho Phōkikòs pólemos dekétēs   gegonòs
     but the Phocian   war.nom decennial be.ptcp.prf.nom

     aeímnēston   __paideían__   autoùs __epaídeuse__
     unforgotten.acc teaching.acc them   taught.3sg
     'But the ten years' Phocian war had taught them a lesson not to be forgotten.'
                 (Aeschines, *Against Ctesiphon*, 3, 148)

(23) epeì d' __agôna__   kaì sù   tónd'   __ēgōnísō__
     since prt contest.acc and you.nom that.acc contend.aor.mp.2sg
     'But since you have thus entered this contest.'   (Euripides, *The Suppliants*, 426)

To summarize the present section, our initial hypothesis (following Visser)
that both the loss of definite null objects and the rise of activity/event-
noun cognate objects occurred during the same period is not absolutely
confirmed (tables 5, 6 and 7). A decrease of the frequency of null objects is
observed from the end of the OE period to the beginning of the ME period.
Regarding cognate objects, the changes do not involve the transition from
the OE to the ME period but rather the period from the 13th century.
Moreover, the comparison of the English and Greek data has demonstrated
that the changes in definite null objects follow the same direction, but this

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[14] Cf. Horrocks & Stavrou (2010, 288): "This rather large AG class has been greatly
    reduced in MG, and the survivors, like 'sing' and 'dance', all allow a wide range
    of different objects, perhaps indicating that this greater assimilation to 'normal'
    transitivity was the key to their retention."

Table 4: Cognate objects in OE, ModE, AG, and ModE.

	Type 1 typical transitive	Type 2 transitivizing	Type 3 activity/event-noun
OE	✓	✓	∗
ModE	✓	✓	✓
AG	✓	✓	✓
ModG	✓	✓ (but reduced)	∗

similarity does not hold for the development of cognate objects (rise in English vs. loss in Greek). Hence, a single explanation for both changes (in null and cognate objects) even for the same language appears not to be possible because the changes occurred during different periods. (Note that the changes involving indefinite null objects are different: in English, most speakers no longer use this null object construction, but its use has been stable in Greek.) It is clear that the development of cognate objects is not similar to the development of overt and null objects. Null and cognate objects are most likely linked to different aspects of grammar and changes.

Table 5: Top: percentage of clauses with an overt object. Bottom: rates for the development of overt direct objects (logistic regression estimates).

	Periods										
	O2	O3	O4	M1	M2	M3	M4	E1	E2	E3	MBE
Clauses with an overt object (%)	12.43	13.24	4.97	40.18	29.05	34.06	29.13	21.90	22.14	24.68	21.43

	Slope	Intercept
Overt direct objects	10.26	3.64

Table 6: Rates for the number of new cognate constructions per period (repetition of table 2).

	Periods										
	O2	O3	O4	M1	M2	M3	M4	E1	E2	E3	MBE
New cognate constructions	0	0	3/59 (5.08%)	0	7/59 (11.86%)	8/59 (13.56%)	6/59 (10.17%)	1/59 (1.69%)	7/59 (11.86%)	8/59 (13.56%)	19/59 (32.20%)

Table 7: Frequency of the *die + death* cognate construction (repetition of table 3).

	Periods										
	O2	O3	O4	M1	M2	M3	M4	E1	E2	E3	MBE
die + death Max/1k	0	0	0	0	0	6.1	10.3	5.9	7.1	0	5

3. Explaining the changes in null and cognate objects

3.1. Two initial hypotheses: clitics and tense

We have observed examples of trends in the diachrony of null and cognate objects in both directions: the loss of a detransitivizing process in English (and Greek) and the rise of a transitivizing process in English (but not in Greek). We assume that the changes in these transitivizing/detransitivizing processes can be linked to internal linguistic factors. One possible explanation is that object clitics and tense are historically related to null (and cognate) objects in the same manner that subject clitics and agreement (morphology) are related to null subjects. Fuß (2005) has demonstrated that null subjects become available when there is no overt/clitic form available that is more distinctive in the sense of the Elsewhere Condition of Kiparsky (1973; 1982) or Halle's (1997) Subset Principle.[15] According to the Elsewhere Condition (24), a rule B (in our case, a null object) is blocked from being applied to specific elements when a more specific competing rule A (in our case, an overt form or clitic) has been applied to these specific elements:

(24) **The Elsewhere Condition** (EC; Kiparsky 1982, 8)

Rules A, B in the same component apply disjunctively to a form φ if and only if (i) the structural description of A (the special rule) properly includes the structural description of B (the general rule); and (ii) the result of applying A to φ is distinct from the result of applying B to φ. In that case, A is applied first, and if it takes effect, then B is not applied.

Similarly, the Subset Principle (25) states that a given lexical item can qualify for insertion even if it only contains a subpart of the structure.

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[15] Modern Greek is an example of a language that has no weak subject pronoun and is pro-drop (*tos* can be regarded as a weak subject pronoun (Joseph 1994), but it is not productive and is lexically restricted, with only two predicates, *na**tos*** 'here is/are' and *poun**tos*** 'where is/are').

Thus, the same lexical item (in our case, a null object, if we consider null objects to be items that can be selected) qualifies for insertion if there exists no lexical item (in our case, an overt form or clitic) that is more specified for the specific syntactic structure.

(25) **The Subset Principle** (Halle & Marantz 1993)

> An item is inserted in a syntactic node when (a) the features representing the item are a subset of the features characterizing the node and (b) it is the most specific item among the underspecified ones.

A first hypothesis could be that the development of transitivity (for example, the loss of the availability of null objects) is related to the development (rise) of object clitics. This hypothesis suggests that if clitics emerge at a later stage in the history of English, there may be the possibility of a correlation between null/cognate objects and clitics. The general picture of the development of object clitics in English – in relation to null/cognate objects – is as follows: neither OE nor ModE have object clitics (cf. the relevant discussion in Bech 2000, 79ff); thus, whereas the status of pronouns is stable, a detransitivizing process (null objects) is lost.[16] In Greek, losses of a transitivizing process (and more restrictions on cognate objects) and of a detransitivizing process (null objects) are observed, but object clitics are available[17] in both AG and ModG. A correlation between the absence of subject clitics and the availability of null subjects in the history of Greek might be true, but there is not a correlation between the absence of object clitics and availability of null objects. Thus, we cannot argue that Fuß's generalization (based on the Elsewhere Condition and the Subset Principle) holds for object clitics and null objects – as it seems to hold for subject clitics and null subjects – because there is no change in the availability of object clitics, but definite (and indefinite) null objects are grammatical in OE and ungrammatical in ModE (whereas object clitics are available in ModG, but definite null objects are present only in AG).

Another possible explanation is that changes in transitivity can be linked to major changes in the system of Tense, if we assume that transitivity (accusative case of the direct object) is related to Tense, as is assumed in the work of Pesetsky and Torrego (2004; 2006).[18] Pesetsky and

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[16] Because there are no object clitics in English, this section must be short, and we will not discuss additional details of these analyses here.

[17] Clitics are present in both periods, but we do not claim that the clitics of AG and ModG are similar.

[18] Notice that some scholars adapt Pesetsky & Torrego's perspective with an ASP (not T) on little v (on ASP, see below).

Torrego have argued that the accusative case (similar to the nominative case) is an instance of an uninterpretable Tense feature on D. Therefore, for a structural Case to be licensed, verbs must realize Tense semantically and morphologically: the Case-checking heads must have an interpretable [iT] feature that can value an uninterpretable [uT] feature on the DP. According to Pesetsky and Torrego (2004, 2), "all instances of structural Case are actually instances of uT on D", and the presence of tense is crucial for the licensing of Case.

One can propose the hypothesis that changes in the Tense system can affect the availability of null/cognate objects. If Tense is crucial for the licensing of Case, then changes in Tense can affect transitivity and can be the reason for the loss of the availability of null objects. It has been demonstrated, however, that in the history of **both** English and Greek, Tense became a separate category only in a later period (ME and Koine Greek, respectively). Hence, for English, van Gelderen (1993) has demonstrated that the rise[19] of T is a later development that occurred at the end of the ME period. Van Gelderen has presented evidence that the elements that fill the T node in ModE start to function as such possibly during the first part of the 14th century. Van Gelderen has argued that T in English is a position occupied by the items *do* and *to* and its introduction is possibly triggered by the grammaticalization of *to, do, will,* and *may* (and other verbs). After the introduction of T, it is no longer necessary for the verb to move to C because **the tense features come to be located in T**. According to van Gelderen, a cluster of patterns starts to appear during the time of the introduction of T. These patterns include split-infinitives, VP-ellipsis, and the rise of *do*-support in negative contexts.

However, the same holds for Greek. According to a reinterpretation of Taylor (1994) proposed by Kiparsky (1996), Homeric Greek must have lacked a separate category T (his I) in the syntax such that it had no TP distinct from VP. The inflected verb in Homeric Greek thus belonged to the composite category VT. Kiparsky, following Taylor, has demonstrated that the rise of the category TP in Greek is implicated in the O(bject) V(erb) to VO change. Taylor has argued that Homeric Greek had an OV base, which changed to VO during the period of Koine Greek via a stage of competition between OV and VO (represented by Herodotus in Taylor's study). A parallel change in the positioning of clitics has also been demonstrated by Taylor to be relevant to this development. In Homeric Greek, clitics appear

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[19] In other words, there is a change from covert (LF) V-to-T movement to overt V-to-T movement, or from lexical V/T merger to syntactic V-to-T movement.

at the left edge of TP; in Herodotus, clitics can appear at the left edge of TP or VP; and in New Testament Greek, clitics appear at the left edge of VP. Kiparsky interprets these facts as evidence that Homeric Greek must lack a separate category T in the syntax (it has no TP distinct from VP).

Hence, following Kiparsky, the inflected verb in both Homeric Greek and OE (and early Germanic) belongs to the composite category VT. In post-Homeric Greek and post-OE, T becomes a separate category and the changes in word order (to VO) and the cliticization in Greek and in split-infinitives, VP-ellipsis, and *do*-support in English can be considered the result of the rise of the T node. Therefore, one could argue that the rise of T as a separate category led to the changes in null and cognate objects. We have observed a parallel development in both English and Greek that can account for the loss of definite null objects (if we accept that there is a link between Tense and direct objects and, consequently, that the rise of T can affect the acceptability of definite null objects) but not for the development of cognate objects in English (an increase in their use) and Greek (reduction in their use).

3.2. A third hypothesis: the role of aspect

What we would like to propose, then, is a third hypothesis, according to which the above changes regarding null and cognate objects in the history of English are correlated with an innovation in the aspectual system, in particular with the development of the progressive aspect in English. Following the theoretical approaches of Roberge (2002), Borer (2004) and Tsimpli & Papadopoulou (2006), who have argued in favor of a Transitivity Requirement (TR) ("an Object position is always included in VP, independently of lexical choice of V"– see above), we will state the hypothesis that changes in aspect have effects on argument realization because they can be analyzed as directly associated with changes in the syntactic realization of the TR. The TR dictates the representation of a functional head Trans(itivity), and [Spec, TransP] is the EPP position for direct objects and is where the Case is checked. The empirical motivation of the TR hypothesis, i.e., the evidence that any transitive verb has the potential to appear without a direct object and any intransitive/unergative verb has the potential to appear with a direct object (Cummins & Roberge 2004), is closely related to our present study. According to the TR, to account for the potential omission of the direct object with any transitive verb and for the presence of a direct object with any intransitive/unergative verb, there must be a mechanism to generate the direct object position. This

mechanism generates the direct object position obligatorily and considers transitivity to be a characteristic of the predicate (VP).
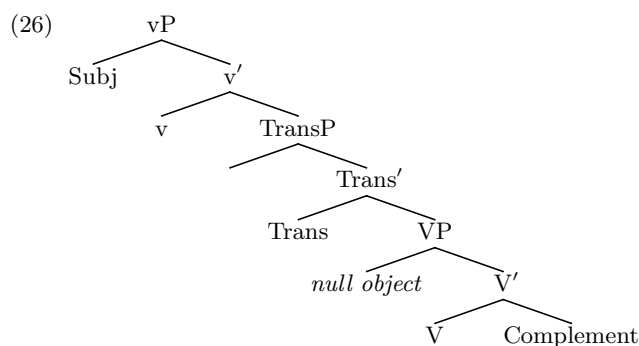
We follow Tsimpli & Papadopoulou (2006, 1603–1604), and we apply their analysis to English progressive/non-progressive aspect.[20] According to the authors, the perfective/imperfective distinction in ModG is realized as a formal feature on Trans. Tsimpli and Papadopoulou follow Basilico (1998),[21] who has argued that the interpretive differences between predicates that focus on the verb event and predicates with individuated objects are reflected in the syntactic representation of direct objects: individuated objects are merged in [Spec, TransP], whereas non-individuated objects are merged in the lower VP. Tsimpli and Papadopoulou, adopting this distinction, have proposed that Trans bears aspectual features that are grammaticalized in ModG: the perfective/imperfective distinction is realized as a formal feature on Trans (following Arad 1998; Borer 1994; 2004; 2005; Tenny 1987). In their analysis, aspect has effects on argument realization because the DP object of a $\text{Trans}_{[+\text{perf}]}$ and the DP object of a $\text{Trans}_{[+\text{imperf}]}$ verb have different base-generated positions: the DP object of a $\text{Trans}_{[+\text{perf}]}$ verb is merged in SpecTransP, and the DP object of a $\text{Trans}_{[+\text{imperf}]}$ verb is merged in the lower VP. The direct object of the $\text{Trans}_{[+\text{imperf}]}$ verb must move from the Spec position of the lower VP to [Spec, TransP] for Case reasons. Tsimpli and Papadopoulou have argued that this difference in the merge position of direct objects in ModG is related to the telic versus atelic interpretation of perfective and imperfective predicates, respectively. They have shown that the individuated objects of imperfective predicates always yield an atelic interpretation, whereas the interpretation of perfective verbs with individuated objects is telic. The interpretation of structures with **null objects** is atelic, irrespective of the aspectual form (perfective or imperfective) of the verb.

In Tsimpli and Papadopoulou's analysis, verbs with null objects are represented according to the structure in (26), regardless of the aspectual

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[20] We do not claim that Tsimpli and Papadopoulou's analysis of the perfective/imperfective distinction can be simply extended to the analysis of progressive aspect. We use their analysis as a basis to describe the relation between aspect and transitivity (taking into consideration the relation between the perfective/imperfective and the progressive/non-progressive distinction, stated by Comrie (1976, 25), for example). Furthermore, of course, we do not argue that the perfective/imperfective distinction has the same characteristics as the progressive/non-progressive distinction. We only examine the relation of the aspectual types to transitivity – again, differentiating the manner in which (im)perfective aspect affects transitivity from the manner in which (non)progressive aspect affects transitivity.

[21] Among many others who accept the presence of a TransP (see, for example, Jelinek 1995).

feature on Trans; the Case requirement is relaxed because null objects are empty categories with no D element and no movement of the object to [Spec, TransP] is required. Evidence in favor of this analysis is provided by the fact that there is a preference for null objects with imperfectives. Tsimpli and Papadopoulou have argued that this preference is based on the Merge + Move versus Merge option for the overt direct object; both Merge and Move are required with $\text{TransP}_{[+\text{imperf}]}$, whereas only Merge is needed with $\text{TransP}_{[+\text{perf}]}$. In their analysis, the interpretation of the event as atelic or telic is determined at the LF interface on the basis of the chain formed in each case: in imperfective structures, a chain with two copies, one in the lower VP and one in [Spec, TransP], is involved, whereas in perfective structures, a single copy is found in [Spec, TransP].

(26)

```
                vP
              /    \
          Subj      v′
                   /   \
                  v    TransP
                        \
                        Trans′
                        /    \
                    Trans     VP
                            /     \
                    null object    V′
                                  /   \
                                 V    Complement
```

(ModG; based on ex. (22) in Tsimpli & Papadopoulou 2006, 1604)

Trans does not require movement of the direct object to its Spec in ModG; this movement occurs for Case reasons. It is obvious that different languages grammaticalize different aspectual distinctions; in the case of English, which is the focus of this study, the progressive/non-progressive distinction is grammaticalized and realized as a formal feature on Trans in ModE.[22] Because the situation in ModE is different than in ModG – and both atelic and telic interpretations are possible with both progressive and non-progressive aspects in ModE – the initial position of the direct object should be the same for both the progressive and non-progressive aspects. We propose that the initial position of the direct object is the lower VP position, and the interpretation is atelic if the direct object remains in this position or telic if the direct object moves to the [Spec, TransP]

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[22] It is evident that we attempt to test the relation (if any) of the (a)telic interpretations (telicity) of (non)progressive predicates (progressivity) to transitivity and we do **not** suggest that telicity and progressivity are similar.

position. Hence, there is no requirement for movement for Case reasons in ModE – and, of course, there is no case morphology (in contrast with Greek) – and the direct object can check the Trans features without movement (via Agree) if it is overt. In the case of an atelic interpretation, the overt direct object checks the Trans features without movement from the [Spec, VP] position, whereas in the case of a telic interpretation, the overt direct object checks the Trans features by moving to [Spec, TransP]. In the case of a telic interpretation, null objects in ModE are not possible because they cannot move to the [Spec, TransP] from the initial VP position. They are also not possible in the case of atelic interpretations, in contrast with ModG. The reason for this is the contrast between the requirement for movement (for Case reasons) even in the case of an atelic interpretation in ModG but not in ModE. Therefore, in the case of an atelic interpretation, the overt direct object of ModE should have the relevant (Trans) features that can be checked without movement. For most speakers of ModE (and for any context except for habitual or generic contexts), null objects are not able to check the Trans features in the lower VP position.

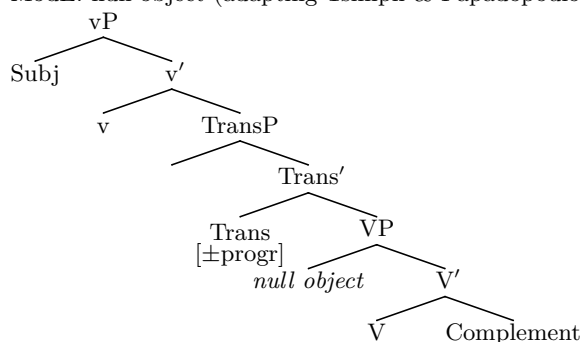(27) a. ModE: atelic interpretation (adapting Tsimpli & Papadopoulou's 2006 analysis)
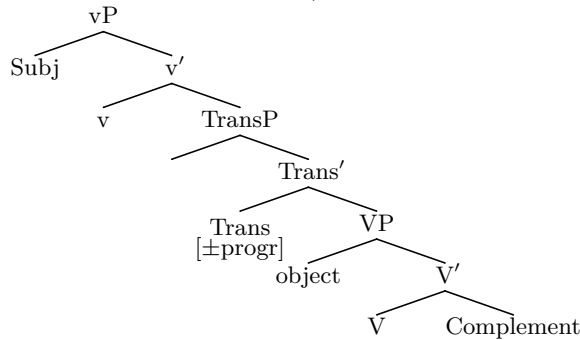
b. ModE: telic interpretation (adapting Tsimpli & Papadopoulou's 2006 analysis)
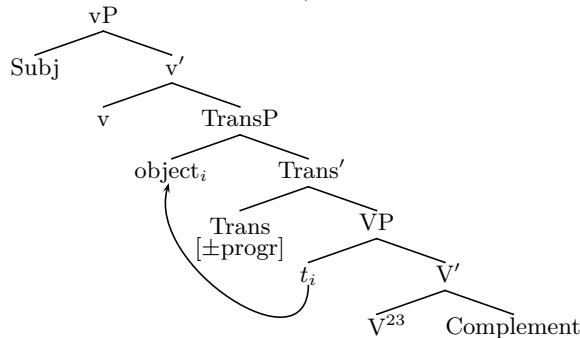
[23] We assume a V-to-v movement for ModE.

c. ModE: null object (adapting Tsimpli & Papadopoulou's 2006 analysis)[24]

```
                          vP
                    ┌──────┴──────┐
                  Subj           v′
                            ┌─────┴─────┐
                            v         TransP
                                 ┌──────┴──────┐
                                           Trans′
                                      ┌───────┴───────┐
                                    Trans            VP
                                   [±progr]      ┌────┴────┐
                                            null object   V′
                                                      ┌────┴────┐
                                                      V     Complement
```

One hypothesis could be that before the grammaticalization of the progressive/non-progressive aspectual distinction in English, the telic vs. atelic interpretation was not related to movement of the object to [Spec,TransP]. Moreover, before the grammaticalization of the progressive/non-progressive aspect, (overt and) null objects in OE, for example, did not need to check the Trans feature with the Trans head (only overt objects needed to move, but only for Case reasons in OE). The telic or atelic interpretation is, then, directly related to the situation type aspect that the verb (or its prefix) expresses in early English – before the change from the situation type (or inner) aspect to the viewpoint (or outer) aspect. Case morphology, which one could consider as a possible reason for the differences in the history of English (cf. the presence of case morphology in OE but not in ModE), cannot be the significant parameter because, for example, case morphology is present both in AG and ModG, but only AG permits definite null objects and "aspectual" cognate objects (of the third type) (see also below).

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[24] Of course, it is obvious that we do not claim that the presence of certain aspect features (in Trans) affects the licensing of null (and cognate) objects, and we do not argue that there is a (syntactic) difference between overt and definite null objects. What we would like to test is the hypothesis that the differences between the different periods are the result of the manner in which the specific Trans feature is checked. In OE, overt objects must move, but for Case reasons. No movement is needed for Trans feature reasons. This can have consequences on the availability of null objects; null objects are possible because the object (null or overt) does not need to check the Trans ([non]progressive) features (through movement).

(28) (adapting Tsimpli and Papadopoulou's 2006 analysis)[25] shows the relation among grammaticalized aspect, the types of objects, and aspectual interpretation in ModE:[26]

(28) a. [−progressive], [+overt object] → [±telic][27]

  b. *[−progressive], [+definite null object] → [±telic]

  c. [+progressive], [+overt object] → [±telic]

  d. *[+progressive], [+definite null object] → [±telic]

It appears that definite[28] null objects do not violate the TR in OE; OE null objects are syntactically present (by virtue of the TR), and they are

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[25] The schemata refer only to ModE; in ModG, an imperfective verb with an overt object always has an atelic interpretation (see above), whereas in ModE, the verb can have either an atelic or telic interpretation.

    The relevant structures of Tsimpli and Papadopoulou for ModG are the following ((23) and (24) in Tsimpli & Papadopoulou 2006):

(i)   a. $[_{TransP}$ DP Trans$_{[+perf]}$ $[_{VP}$ V]]   Perfective + Direct Object

       b. $[_{TransP}$ Trans$_{[+perf]}$ $[_{VP}$ $[_{N}$ 0] V]]   Perfective + Null Object

(ii) a. $[_{TransP}$ DP Trans$_{[-perf]}$ $[_{VP}$ ~~DP~~ V]] Imperfective + Direct Object

       b. $[_{TransP}$ Trans$_{[-perf]}$ $[_{VP}$ $[_{N}$ 0] V]]   Imperfective + Null Object

[26] Definite objects may or may not contribute telicity to predicates that contain non-terminative verbs regardless of their aspect; e.g., *I washed the car* may be understood as containing a telic VP or an atelic VP according to the context *(in five minutes* vs. *all day without getting the tar off)*. Furthermore, *I was washing the car* may still have a telic reading (cf. *I was halfway through washing the car when my wife called*). Nevertheless, the above facts are not the focus of our study; rather, we focus on the possible relation between the availability of definite null objects only in some periods (in OE, but not in ModE) and the viewpoint and situation type aspect.

[27] According to Tsimpli and Papadopoulou, the predicate might also be telic in ModG when the sentence denotes a habitual action. We have modified Tsimpli and Papadopoulou's analysis and, in particular, its ramifications for the presence/absence of null arguments. The primary reason for the modification is that the grammaticalization of the viewpoint aspect in (im)perfective verbal forms in ModG results in differences with regard to the telic/atelic interpretation if we compare it with ModE. For example, in ModE, a progressive verbal form with an overt direct object can have either an atelic or telic interpretation.

[28] This claim is also true for indefinite null objects for speakers who consider both definite and indefinite null objects in a similar manner (see above). Speakers differ in that some speakers treat indefinite null objects as similar to definite null objects, whereas the group of speakers who accept Modern English sentences with indefinite null objects treat indefinite null objects as similar to generic null objects of the type *They have the ability to impress and delight Ø*.
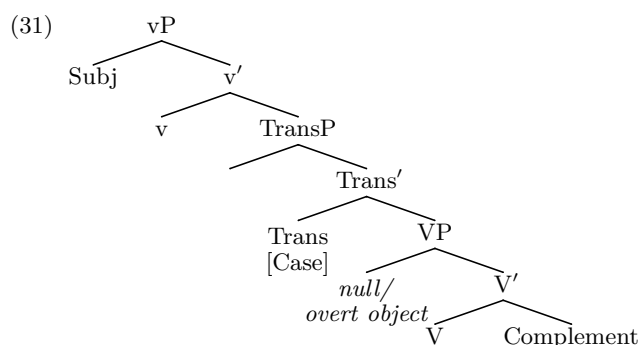
licensed and recovered by the Trans head of OE. In contrast, from the beginning of the ME period (see fig. 1 above), the presence of a definite overt object is required and definite null objects are disallowed. Definite null objects behave in a similar manner with overt objects; they must check the Trans feature in ME (and ModE). One can hypothesize that this Trans feature is aspectual, that definite null objects in ME (and ModE) are not possible once the aspectual distinction of progressive/non-progressive is grammaticalized, and that Trans requires the presence of objects with a Trans [±progressive] feature either in the [Spec, TransP] position or in the [Spec, VP] position. Null objects cannot check the Trans feature, and the result is that this structure is not possible. The hypothesis is that definite null objects are possible before the progressive was grammaticalized because there was no requirement for the checking of Trans features:

(29) OE (cf. (31))

    a. No Trans [±progressive] feature-checking requirement.

    b. Overt objects move for Case reasons but not for Trans [±progressive] features reasons.

    c. Definite null objects are possible because they do not need to check a Trans [±progressive] feature.

(30) ME and ModE (cf. (27a–c))

    a. TransP with a [±progressive] feature.

    b. Overt objects move for Trans [±progressive] feature reasons or check their Trans [±progressive] feature without movement.

    c. Definite null objects are not possible because they cannot check the Trans [±progressive] feature.

(31)

```
                    vP
              ┌──────┴──────┐
            Subj           v′
                     ┌──────┴──────┐
                     v           TransP
                              ┌─────┴─────┐
                                        Trans′
                                   ┌──────┴──────┐
                                 Trans          VP
                                 [Case]     ┌────┴────┐
                                          null/      V′
                                        overt object ┌──┴──┐
                                                     V   Complement
```

(OE; adapting Tsimpli and Papadopoulou's 2006 analysis)

Another aspect of the possible interrelation is between the changes in the aspectual system and the transitivity and case[29] system of English, which has been investigated by van Gelderen (2011). Van Gelderen (who analyzed the causative/anticausative alternation and the basic transitivity patterns in various stages of English) has reached a similar conclusion about the role of aspect and its changes in the development of (in)transitivity in English. According to van Gelderen, OE has a causativizing affix in its little v(erb) and a transitivizing affix in ASP(ect)[30] that express the lexical (situation type) aspect; the loss of these affixes (changes in aspect marking) led to intransitive verbs being used as transitive verbs in subsequent diachronic periods. For van Gelderen, the perfective aspect, the accusative and genitive cases, and definiteness in OE are marked through an ASP(ect) category and are interpretable but are reanalyzed as uninterpretable in later stages of English.

To check the parameter that affects the Trans feature and, thus, the grammaticality of the presence of null objects and our hypothesis that the grammaticalization of the progressive plays a role in this development, we will examine the chronology of the development of the progressive in English. We assume that the progressive aspect derives from the OE construction *BE+V-ende*.[31] The relation between the new aspectual system of English and changes in transitivity and the distribution of null/cognate objects is evidenced by the fact that the form *BE+V-ende* (before being reanalyzed)[32] was often associated with intransitive verbs and very rarely

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[29] We leave the study of the role of Case (see also below) open for further research. Moreover, Abraham (1997), Philippi (1997), van Gelderen (1997), and Kiparsky (1998) have argued for a connection between Case, definiteness, and aspect.

[30] ASP for van Gelderen represents the lexical (situation type) aspect associated with the Aktionsart of the verb (for example, telicity, measure).

[31] Accounts that trace the origins of the ModE progressive to the OE *BE+V-ende* form include Nickel (1966); Mitchell (1985); Traugott (1992); Denison (1993), and Warner (1993). In the present paper, we do not discuss the details of the possible sources and the historical processes that have been proposed for the progressive in English (for example, there are several analyses of the grammaticalization of the progressive in English that consider that it developed out of a PP + nominal construction); we refer only to some aspects of the development to test the historical correlation of Aspect and Transitivity. The crucial remark for our study is the fact that the form *BE+V-ende* was very rarely associated with an accusative object in OE, whereas there was an increase in the use of transitive verbs with the new progressive *BE +V-ing* after its reanalysis as the new progressive marker.

[32] For arguments in favor of a reanalysis account of the development of the progressive, cf. Ziegeler (1999).
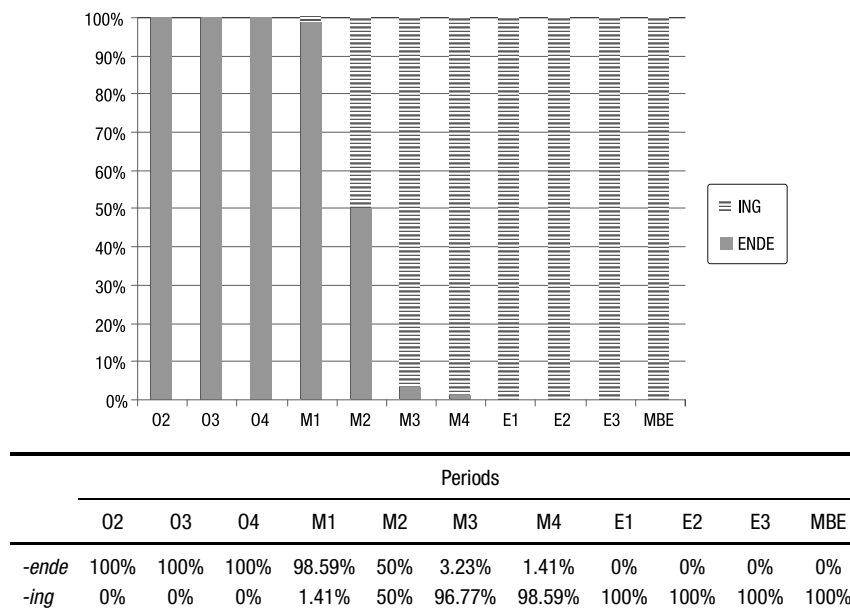
with an accusative object in OE (following the remarks in Traugott 1992 and Denison 1993, 399). After reanalysis (the participle is now *V-ing*), from 1600 onwards, there was a significant increase in the use of transitive verbs with the *BE + V-ing* (see the relevant remarks in Traugott 1992 and Denison 1993). According to van Gelderen (2004, 203ff), the progressive is an ME innovation, used only after 1400, and its use increased especially in the 19th and 20th centuries. Van Gelderen has also shown that by the time of Jane Austen's early 19th century novels *Emma, Persuasion,* and *Pride and Prejudice*, the use of the progressive was modern-like, with the simple present being used for the habitual aspect, i.e., 'moment', and the progressive for intervals, as in (32) and (33):

(32) At this moment [. . .] Mr Elton is **shewing** your picture [. . .].
   (*Emma* I, ch. 7; from van Gelderen 2004)

(33) If you are looking for my master [. . .] he is **walking** towards the little copse.
   (*Pride and Prejudice* II, ch. 7; from van Gelderen 2004)

This change has been analyzed by van Gelderen (2004) as a reanalysis from the inner (situation type) to the outer (viewpoint) aspect. The OE prefixes of verbs determine the inner aspect or perfectivity. As these prefixes disappeared, *-ing* became considered as imperfective. As we have mentioned, van Gelderen locates this shift at the end of the ME period, whereas she locates the shift to the fixed pattern of obligatory *-ing* in the 19th century. For van Gelderen, the earlier changes (loss of prefixes and optional *-ing*) resulted from the reanalysis of a low (inner/situation) aspect to a high aspect (outer/viewpoint). The later changes (obligatory *-ing* for the progressive) are assumed to be the result of a parameter switch from interval to moment.

We will not discuss the details of these changes in aspect because the focus of our paper is to examine whether these changes in aspect (described in detail, for example, in van Gelderen 2004, chapter 10) are related to and can explain the changes in the null and cognate constructions. Figure 2 presents the results of a corpus search regarding the presence of forms in *-end(e/an)* and *-ing(-yng(e))* (coded as markers for the progressive) in different periods of the history of the English language. We have searched for changes in the presence of forms in *-ende* and forms in *-ing* to test the hypothesis of a correlation between the change in the aspectual system and the change in the presence of null and cognate objects. We have again used the same corpora: the York-Toronto-Helsinki Parsed Corpus of Old English Prose (YCOE), the Penn-Helsinki Parsed Corpus of Middle

	Periods										
	02	03	04	M1	M2	M3	M4	E1	E2	E3	MBE
-ende	100%	100%	100%	98.59%	50%	3.23%	1.41%	0%	0%	0%	0%
-ing	0%	0%	0%	1.41%	50%	96.77%	98.59%	100%	100%	100%	100%

Figure 2: The development of the progressive aspect: *-ende* vs. *-ing*. All data are presented as the frequency at which the phenomenon occurs versus those cases in which the syntactic alternative occurs and are analyzed using statistical tests (in an attempt to make conclusions despite the different sample sizes or any other type of variation among the time periods represented).

English (PPCME2), the Penn-Helsinki Parsed Corpus of Early Modern English (PPCEME), and the Penn-Helsinki Parsed Corpus of Modern British English (PPCMBE).

A Pearson chi-square test was performed to assess the relationship between the periods and the development of progressive aspect. The results regarding the development of *-ing* (in contrast with *-ende*) were statistically significant for the comparisons (a) between M1 and M2 ($\chi^2 = 61.81$, $p < .001$), with an effect size of $\varphi = .56$, which is a large size effect, and (b) between M2 and M3 ($\chi^2 = 56$, $p < .001$), with an effect size of $\varphi = .53$, which is a large size effect.

Table 8[33] presents a comparison of the development of the progressive aspect and of null objects (the presence of overt direct objects – repeated from table 5) to test their correlation according to the constant

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[33] I would like to thank Prof. Susan Pintzuk very much for her suggestions about the methodology of this study. Of course, all errors remain mine.

rate hypothesis (Kroch 1989) (see the slope and intercept parameters of the logistic regressions).[34]

Table 8: Top: percentage of *-ing* and percentage of clauses with an overt object. Bottom: slope and intercept parameters of the logistic regressions for the development of aspect *(-ing)* and overt direct objects.

	Periods										
	O2	O3	O4	M1	M2	M3	M4	E1	E2	E3	MBE
-ing (%)	0	0	0	1.41	50	96.77	98.59	100	100	100	100
Clauses with an overt object (%)	12.43	13.24	4.97	40.18	29.05	34.06	29.13	21.90	22.14	24.68	21.43

	Slope	Intercept
-ing	6.14	2.39
Overt direct objects	10.26	3.64

It is clear from table 8 that the rise of *-ing* as a marker of the new progressive aspect in English does not coincide with the development of overt (and null) direct objects. The crucial periods for the progressive aspect are the M2 and M3 periods, but the change in the distribution of overt/null objects happened during the M1 period.

In contrast, tables 9 and 10 – in comparison with table 7 – show that there is a correlation between cognate objects and the new (non)progressive aspect. The results for both the development of *-ing* (vs. *-ende*) and new cognate constructions were statistically significant for the comparisons (a) between M1 and M2 (for the development of *-ing*: $p < .001$, with an effect size of $\varphi = .56$, which is a large size effect; for the development of new cognate constructions: $p < .001$, with an effect size of $\varphi = .25$, a medium size effect) and (b) between M2 and M3 (for the development of *-ing*: $p < .001$, with an effect size of $\varphi = .53$, a large size effect; for the development of the *die + death* cognate construction: $p = .01$, with an effect size of $\varphi = .06$, which is a small size effect). These results suggest that the changes are related.[35]

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[34] For our initial claim that there is a correlation between aspect and (de)transitivization to be convincing, it is not sufficient to demonstrate that changes in these two phenomena in the history of English (for example, the rise of the progressive/ non-progressive distinction and the loss of null objects) occur during the same period of time but rather that they progress in parallel. Therefore, we have framed our claim as a hypothesis and have discussed the type of quantitative study that would demonstrate its validity.

Table 9: New cognate constructions per period (repeated from table 6).

						Periods					
	O2	O3	O4	M1	M2	M3	M4	E1	E2	E3	MBE
New cognate constructions	0	0	3/59 (5.08%)	0	7/59 (11.86%)	8/59 (13.56%)	6/59 (10.17%)	1/59 (1.69%)	7/59 (11.86%)	8/59 (13.56%)	19/59 (32.20%)

Table 10: Frequency of the *die + death* cognate construction (repeated from table 7).

					Periods						
	O2	O3	O4	M1	M2	M3	M4	E1	E2	E3	MBE
die + death Max/1k	0	0	0	0	0	6.1	10.3	5.9	7.1	0	5

Recall the problems regarding the collection of data for the development of cognate constructions that we have observed. Table 9 refers to the first appearance of a cognate construction and, therefore, heavily depends on the lexical features of the verbs. Table 10 refers to the specific combination of the verb "die" (in any form and spelling) with the direct object "death" (again, in any form and spelling). The development of aspect is demonstrated with the rise and development of the *-ing* form. It appears that our results agree with the discussion of the development of the progressive aspect in the relevant literature and that cognate constructions (despite the problems in our data caused by the nature of the cognate constructions that are difficult to be checked) progress in parallel with the development of the progressive aspect. The periods M2 and M3 are the most significant periods for the changes in both cognate constructions and the progressive aspect. Thus, regarding the development of the cognate object construction, there is evidence for a diachronic argument in favor of Horrocks and Stavrou's analysis. According to Horrocks and Stavrou (2010, 308), "ModE allows verbs to be listed with a default aspectual character, which, in the absence of distinct perfective/imperfective stems, can be adjusted by 'aspectual' cognate objects." OE has no activity/event-noun cognate objects of the ModE type because the default aspectual character of verbs seems to be a later development for English, in parallel with the development

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[35] However, note that we cannot make a comparison based on the slope and intercept parameters here because of the nature of the development examined (new cognate constructions per period and the frequency of a specific cognate construction).

of the progressive aspect in English. Hence, it seems that the grammaticalization of the progressive/non-progressive aspect and the change from the situation type (inner) aspect to viewpoint (outer) aspect are significant for the presence of activity/event-noun cognate objects in English. The presence of the new progressive/non-progressive viewpoint distinction realized as a formal feature on the Trans-head allows for the presence of activity/event-noun cognate objects,[36] which were not allowed in English before the grammaticalization of the progressive/non-progressive distinction.

Conversely, null objects do not follow cognate objects in the correlation between cognate objects and the progressive aspect. Therefore, we must modify our hypothesis and argue that because the development of null and cognate objects is not parallel, there exists a different correlation for the development of null objects, and only cognate objects are related to the development of aspect. If this second hypothesis is correct, then we must again examine the other possible explanations (see above), which were rejected based on the fact that they cannot explain the diachrony of both null and cognate objects cross-linguistically in English and Greek. The first and second possible explanations focus on the role of object pronouns (of course, strong, not weak, pronouns – see above) and Tense, and we might suggest that these can be possible parameters that affected the development of null objects, whereas the progressive aspect was the parameter that affected the development of cognate objects. Tables 11 and 12 present a comparison between (a) the development of overt objects

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[36] We simply describe a possible correlation between the grammaticalization of the (non)progressive aspect and activity/event-noun cognate objects (which were not available before the grammaticalization of the (non)progressive aspect). We follow Horrocks and Stavrou in their analysis of the manner in which cognate objects are licensed (in relation to aspect). Our focus here is only to test the hypothesis of a diachronic link between progressive/perfective aspect and the licensing of cognate objects and not to provide a new syntactic analysis of cognate constructions. Horrocks and Stavrou (2003; 2007) have analyzed the absence of activity/event-noun cognate objects as a result of the absence of telicity-shifting constructions from languages that have a grammaticalized viewpoint aspect in verbal stems (i.e., the aspect of the verbal stem not being able to change): "Greek [. . .] has a grammaticalised opposition of perfective/imperfective aspect carried by contrasting verb stems. [. . .] since any definition of the lexical meaning shared by these stems requires a lexical aspectual character to be fixed once and for all, the latter cannot subsequently be modified in syntactic contexts that might in principle have such an effect. [Modern] Greek etc. therefore have no 'aspectual' C[ognate]O[bject]s of the [Modern] English kind (or resultative adjectives and 'true' goal-marking PPs)" (Horrocks & Stavrou 2010, 307).

Table 11: Top: pronouns in object position (as a percentage of the overt objects) and percentage of clauses with an overt object. Bottom: slope and intercept parameters of logistic regressions for the development of overt objects and object pronouns.

	Periods										
	O2	O3	O4	M1	M2	M3	M4	E1	E2	E3	MBE
Pronouns in object position	3.49	7.28	5.87	13.05	16.11	12.24	16.75	15.08	15.31	15.62	11.15
Clauses with an overt object	12.43	13.24	4.97	40.18	29.05	34.06	29.13	21.90	22.14	24.68	21.43

	Slope	Intercept
Object pronouns	50.53	−0.06
Overt direct objects	10.26	3.64

Table 12: Top: percentage of periphrastic *do* in contact affirmative declarative and percentage of clauses with an overt object. Bottom: slope and intercept parameters of logistic regressions for the development of overt objects and Tense-auxiliary *do*.

	Periods									
	O2	O3	O4	M1	M2	M3	M4	E1	E2	E3
Percentage of periphrastic *do*[37]	0	0	0	0	0	0.12	1.03	4.75	3.33	1.18
Clauses with an overt object (%)	12.43	13.24	4.97	40.18	29.05	34.06	29.13	21.90	22.14	24.68

	Slope	Intercept
Tense (auxiliary *do*)	2.82	−8.32
Overt direct objects from O2 to E3 (not MBE)	10.26	3.64

(and null objects) and (b) the development of pronouns in the direct object position (the frequency of the presence of pronouns in this position in contrast with the frequency of the presence of nouns) (table 11) and the development of Tense as represented by the auxiliary *do* (table 12).

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[37] The data are adapted from Ellegård (1953) and Kroch (1989). Contact affirmative declaratives refer to affirmative declarative clauses in which *do* immediately precedes the main verb.

A Pearson chi-squared test was performed to assess the relationship between the periods and the development of object pronouns. The results were not statistically significant except for the results for the comparison between O4 and M1, for which the results were quite statistically significant ($\chi^2 = 3.01$, $p = .08$), with an effect size of $\varphi = .12$, which is a small size effect.

A Pearson chi-square test was also performed to assess the relationship between the periods and the development of periphrastic *do*. The results were not statistically significant except for the results for the comparison between M4 and E1, which were quite statistically significant ($\chi^2 = 2.47$, $p = .12$), with an effect size of $\varphi = .11$, which is a small size effect.

Table 11 shows that there is a correlation between the development of null objects and object pronouns: the transition from the O4 to the M1 period is significant for both. On the other hand, the slopes and intercepts are not close, and this correlation may not denote a causal relation because direct objects – that are definite – referential, most likely refer to old information in the clause, and cannot be omitted anymore – must be expressed by pronouns (which also may express old information in a clause). The reason for this change in null/overt direct objects cannot be attributed to changes in Tense, either, as is shown in table 12. The most significant period for the changes in Tense is the E1 period. In contrast, significant changes in null/overt direct objects happened during the M1 (and M2) period. The rates of change are significantly different.

To summarize, the grammaticalization of the viewpoint aspect is not directly related to the availability of null objects, but it seems to favor the presence of activity/event-noun cognate objects. Moreover, neither of the initial hypotheses (according to the relevant literature) stated at the beginning of the paper, namely that there is most likely a correlation between changes in null objects and object pronouns or Tense, was confirmed. This result should force us to broaden the range of possibilities considered for the explanation of the development of null objects in English and include case morphology (for example) as a possibility (cf. Allen 1995, 141, table 10-1: the accusative–dative distinction is lost during the 13th century; van Gelderen 1993; 1996; 2000: the OE system of inherent Case was replaced by structural Case in approximately 1250 because that time period was when morphological and thematic Case marking disappeared).[38] Causativizations and transitivizations (cf. Fischer 1992; Denison 1993; van Gelderen

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[38] See also above where we have hypothesized that Trans encoded [Case] in OE and [±progressive] after the reanalysis of aspect in English.

2011), the change in word order from OV to *OV (that caused the reanalysis of many examples of OV into SV; cf. Fischer et al. 2000, 138ff), or changes in the characteristics of the coordinated clauses (see above) can be other possible causes for the development of null (and cognate) objects. We leave the examination of these parameters and their relation to the diachrony of null objects (and cognate objects) to future research.

4. Conclusion

We have demonstrated that English lost the definite (and indefinite) type of null objects but extended the range of cognate objects (which is now also possible with activity/event nouns). A comparison of the development of null and cognate objects in English with the development of null and cognate objects in Greek led us to conclude that the historical development described is language-specific and that changes in both directions with respect to transitivity are possible. We have attempted to explain the above-mentioned diachronic tendencies by testing the hypothesis that Aspect and Transitivity (as expressed by null and cognate objects) are diachronically correlated. The grammaticalization of the viewpoint (progressive) aspect in English appears not to have affected the development and loss of null object constructions. However, the grammaticalization of the (non)progressive aspect appears to have progressed in parallel with activity/event-noun cognate objects.

Acknowledgements

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