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OBJECT INSERTION IN OLD ENGLISH VERBS OF THROWING: A CORPUS-BASED ANALYSIS

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Abstract

This study demonstrates for the first time that ballistic motion is part of Old English ditransitives, functioning in the Nominative-Accusative-Dative construction. A search for *throw* terms in *A Thesaurus of Old English* generates a pilot list of candidates, whose participation in ditransitives is verified through queries performed on the *Dictionary of Old English Web Corpus*. The findings reveal a relatively diverse group of 14 verb types and 51 tokens expressing deictically directed transfer (i.e., throwing to and from), with some units emphasizing force or manner of motion. In line with Diachronic Construction Grammar, the new verb class is incorporated into a lexicality-schematicity hierarchy, a semantic map proposal for the group is discussed in detail, and the argument structure of Old English throw verbs is formalized into boxes and described. This study pays particular attention to the typological distinction between basic and derived coding frames, and, more specifically, to object insertion as a mechanism for generating ditransitives from primary caused-motion constructions. A comparison of the argument structures found in the Old English corpus with those of their modern English counterparts suggests a lower degree of constructionalization in the Old English throw group, based on the frequent presence of a fourth argument, a directional.

Keywords: Old English ditransitives, throw verbs, Dictionary of Old English Corpus, object insertion, Diachronic Construction Grammar, (non-)compositionality

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Ballistics, caused motion, and ditransitivity

Ballistic motion is described in linguistics as the imparting of a force that is quick and sudden (Gropen et al. 1989; Pinker, 1989, p. 119; Goldberg, 1995, p. 38). Once the force is exerted, the agent lets go of the object or theme, which then undergoes change of location. Ballistic motion is linked to a well-defined closed verb class, containing terms like throw, hurl, cast, fling, sling, fire (projectile), shoot (projectile), shove, hit (ball), kick (ball), etc. (Levin, 1993, p. 146). The semantics of these terms contrast with the expression of continuous causation found in verbs of sending, bringing, and taking (Levin, 1993, pp. 132-37), with taking differing from the remaining verb classes in that the motion involved is accompanied—the agent does not let go of the theme. In what follows, two instances for instantaneous (1) and continuous (2) translational motion are presented (Levin, 1993, pp. 147 & 134):

(1)	*Steve*	*tossed*	*the*	*ball*	*into*	*the*	*garden.*
	Steve-N	toss-PST.3SG	the-DET	ball-N	into-PREP	the-DET	garden-N

'Steve tossed the ball into the garden.'

(2)	*Nora*	*brought*	*the*	*book*	*to*	*the*	*meeting.*
	Nora-N	bring-PST.3SG	the-DET	book-N	to-PREP	the-DET	meeting-N

'Nora brought the book to the meeting.'

According to Levin, the presence of directional phrases of the kind shown in quotations (1) and (2) is an essential property of the verb classes involved. Note that, even though the linguist does not explicitly state it, the constructions express caused motion in the two cases.

In linguistic typology, directionals are integrated into the basic coding frame of throw verbs, as shown in the ValPal project (Hartmann et al., 2013; Haspelmath and Hartmann, 2015) and illustrated by the following example (Goddard, 2013):

(3)	*The*	*boy*	*threw*	*the*	*ball*
	the-DET	boy-N	throw-PST.3SG	the- DET	ball-N
	through	*the*	*window.*		
	through-PREP	the-DET	window-N		

'The boy threw the ball through the window.'

The basic coding frame of *throw* (schema: 1-nom > V.subj[1] > 2-acc > LOC3) is described by Goddard (2013) as a combination of thrower, thrown thing, and locative. In terms of argument structure, the three elements match the roles of AGENT, PATIENT (or THEME), and LOCATIVE, respectively. The first two are morphosyntactically rendered by noun phrases, while the third appears in prepositionals and adverbials.

Another well-known feature of throw verbs is their participation in double object (ditransitive) constructions when they express change of possession through change of location. There is a strong consensus in the linguistic community that ballistic verbs are part of the ditransitive construction (Pinker, 1989, pp. 110-123; Gropen et al., 1989, pp. 243-44, *inter alia*). Levin (1993, p. 147) remarks that most throw verbs participate in the dative alternation—*Steve tossed the ball to Anna*/*Steve tossed Anna the ball*. Within the field of cognitive linguistics, the diachronic implications of Goldberg's study of ditransitives (1995, pp. 141-51) have so far gone largely unnoticed. Her polysemous conception of the list of verb classes configuring the ditransitive construction is based not only on research into the modern English ditransitive, but also on a historical examination of the verb types involved in The *Compact Edition of the Oxford English Dictionary* (Burchfield, 1987). There is, therefore, diachronic relevance in the fact that she positions ballistic (and continuous) motion together with verbs of giving at the core of the ditransitive, as part of this construction's central sense—'AGENT SUCCESSFULLY CAUSES RECIPIENT TO RECEIVE PATIENT' (1995, p. 38).

In linguistic typology, the shift from caused motion to ditransitivity, involving change of location through change of possession, is effected by means of object insertion. This is usually produced by introducing a RECIPIENT which replaces the LOCATIVE. Quotation (4) below exemplifies this shift. It is taken from Giarda (2021, 2024), and ultimately ascribed to PaVeDa (Zanchi et al., 2022; Luraghi et al., 2024), a project that, among other benefits, expands on the findings of ValPal for many modern languages by applying a diachronic perspective[1]:

(4)	*Þæt*	*flæsc*	*þæt*	*wildeor*	*abiton,* [...]
	the-ACC.SG	meat-ACC.SG	that-rel.ACC.SG	beasts-nom.pl	eat-PRS.3.PL
	ac	*wurpaþ*	*hit*	*hundum.*	
	but-CONJ	throw-IND.PRS.PL	it-ACC.3SG.	dog-DT.PL	

'Regarding the flesh bitten by beasts, throw it to the dogs' (Exodus, 22.31)

[1] All translations into English are my own

In PaVeDa, the cited shift from LOCATIVE to RECIPIENT (now marked in the dative) is explained as an alternation, with the basic coding frame schema for throw from ValPal (1-nom > V.subj[1] > 2-acc > loc3) now transformed into PaVeDa's 1-nom > V.subj[1] > 2-acc > 4-dat4. A comparison of the basic coding frame in quotation (3) above for modern English with the alternating ditransitive frame in quotation (4) for OE proves that object insertion usually involves the loss of the directional. In other words, ballistic ditransitives conflate change of location with change of possession, with the RECIPIENT being also somehow perceived as the end point or throwing goal. This issue will be readdressed below.

Since the main aim of the present study resides in an in-depth analysis of double object constructions in OE, an explanation regarding the position of DCxG on the semantic compositionality or/and non-compositionality of constructions is required. The issue is relevant to the analysis of results conducted below. DCxG regards constructions as form-meaning pairings in broad linguistic terms. Goldberg herself has modulated her initial defense (1995, p. 4) of non-compositionality, by which a construction was always understood as something more than just the sum of its parts (constraints, pragmatics, etc.), to now accepting fully compositional patterns as such as long as these display sufficient frequency (2019, pp. 6-7). Adopting a radical non-compositional position may lead to the ultimate rejection of quotations (1)-(3) as instances of caused motion or, for that mater, to a refusal of the constructional character of the majority of ditransitives found for OE throw verbs in this study. The findings shown below are consistent with the integrative approach proposed by DCxG, which acknowledges the existence of compositional and non-compositional (or schematized) constructional usages as distinct options, interpreting these in terms of lower or higher degrees of constructionalization (Traugott & Trousdale, 2013).

The study of ballistic motion in OE is practically nonexistent. There is already information on verbs of continuous causation, which have been examined in ditransitives (Vázquez-González & Barðdal, 2019) and in the (NOM-)ACC-TO-DAT prepositional alternation (de Cuypere, 2015b, p. 9). However, the data displayed for Deictically Directed Motion in (Vázquez-González & Barðdal, 2019, pp. 578-580, p. 610) do not include any throw verbs. Similarly, de Cuypere (2015a & 2015b) does not refer to any ballistic unit in his analysis of the (NOM-)ACC-DAT and (NOM-)ACC-TO-DAT prepositional alternating constructions. The only

existing evidence for the participation of OE throw verbs in double object constructions is quotation (4) above, which is explained in valency terms by PaVeDa as a shift from a basic caused-motion coding frame to the corresponding alternating ditransitive (Giarda, 2021 & 2024). As PaVeDa aims for the typological characterization of eighty basic verb meanings in forty-three languages, *weorpan*, the OE counterpart to modern throw, is analyzed, but there are unfortunately no further instances operating a similar valency shift from caused motion to ditransitivity. The present study aims to systematize the data available in the *Dictionary of Old English Web Corpus* (DOEWC; Healey et al., 2015) regarding throw terms expressing such a valency shift.

Methods

This section begins by outlining the criteria followed for corpus compilation, starting with an etymological check of Levin's list and the gathering of a pilot list of OE throw terms based on *A Dictionary of Old English* (Roberts et al., 1995). Next, the types of queries conducted in the DOEWC and the methodological criteria employed for the (in)validation of units are explained. An account is provided for the searches performed on the *Corpus of Contemporary American English* (COCA; Davies, 2008-) and *British National Corpus* (BNC; Davies, 2004), which facilitate the comparison of data between OE and modern English included below. Finally, a brief description of the most relevant aspects of DCxG, the theoretical model used in this study, is presented.

Checking the Old English origin of Levin's verb list yielded very poor results. Among the terms with Anglo-Saxon origins, only *shoot* (*sceotan* 'to shoot, cast a missile') and *shove* (*scufan* 'to shove') are related to throw terms. According to the *Oxford English Dictionary* (*Oxford English Dictionary*, entry for Throw v[1]), modern English throw, derived from *þrawan* 'to turn, curl', developed the ballistic reading during the 14th century. A much more productive approach consisted in conducting searches for Levin's synonyms in *A Thesaurus of Old English* (Roberts et al., 1995), which yielded the following matches—05.12.02.06. to push, impel, thrust; 05.12.02.07. to throw, cast, toss; 05.12.02.07.05. to cast, hurl, fling, and 13.02.08.04.02. to send, throw, shoot a missile. The units listed in these entries, many of them derived verbal forms, were arranged into groups in terms of etymological themes[2]:

[2] Diaz-Vera (2011) uses a similar methodological procedure.

Table 1
A pilot list of OE throw verbs

WEORPAN	*weorpan* 'to cast, throw, fling', *geweorpan* 'to throw, cast', *beweorpan* 'to cast (down)', *aweorpan* 'to throw, cast', *anbeweorpan* 'to cast, throw into', *framaweorpan* 'to cast away', *toweorpan* (*ut*) 'to throw away', *worpian* 'to throw, pelt', *geworpian* 'to throw, toss'
SENDAN	*sendan* 'to throw, hurl', *gesendan* 'to throw, cast', *forsendan* 'to send away', *onsendan* 'to send out'
BREGDAN	*bregdan* 'to cast, throw', *abregdan* 'to draw from, wrench', *tobregdan* 'to separate sth'
SCEOTAN	*sceotan* 'to shoot', *gesceotan* 'to shoot forward, send forth', *asceotan* 'to shoot (out)', *besceotan* 'to shoot into', *scotian* 'to hurl a javelin', *gescotian* 'to shoot'
SCUFAN	*scufan* 'to shove, expel', *ascufan* 'to shove away', *bescufan* 'to cast into a place', *gescufan* 'to eject, expel (violence)', *forþscufan* 'to shove forth'
ÞYDDAN	*Þyddan* 'to thrust, push', *aþyddan* 'to thrust, push', *beþyddan* 'to thrust, push'

Provisional results also included a miscellaneous group of conceptually unrelated units—*bestingan* 'to besting, thrust', *drifan* 'to drive', *hrindan* 'to push, thrust', *wrecan* 'to drive out', *torfian* 'to throw, scatter', *wealcan* 'to roll, toss', *astrælian* 'to hurl a dart', and *lælian* 'to hurl a dart'.

Although the thirty three verb types finally gathered are defined by TOE as throw verbs, this does not guarantee their operationalization in double object constructions, especially given the limitations of Anglo-Saxon records. To assess the ditransitivity of these units, the largest corpus available—the DOEWC (Healey et al., 2015), containing over 3,000,000 words—was used. A series of systematic searches was conducted for each term. The queries were single DOEWC searches aiming to retrieve the largest amount of contexts. All possible spelling variants, including ablaut, were taken into account. For instance, for *weorpan* 'to cast, throw', the number of matches obtained and verified breaks down as follows— weorp (233), werp (28), wyrp (210), wirp (9), wierp (9), wearp (299), wurp (492), worp (463), uorp (8). Reducing the queries conducted to such basic morphological stems facilitated the identification of derived verbs. The retrieval of the greatest possible number of quotations proved to be of paramount importance, as most throw terms do not match the high frequency of units like *weorpan* or *sendan*, and instead exhibit (very) low productivity. The total number of quotations checked exceeded 10,000 matches.

With high-frequency types like *sendan* or *drifan*, in which 'throw' is not the main sense, it was harder to verify instances. Regarding *sendan*, the search for double object usages was interrupted after the analysis of the first 2,000 matches. It was also sometimes difficult to ascertain whether the terms found operating in Nominative-Accusative-Dative constructions (NOM-ACC-DATs) were actually throw verbs. This is the case with many terms defined as 'thrusting, throwing':

(5) *And* *þonne [...]* *stinge* *him* *monn*
and-CONJ then-ADV sting-imp.sg he-DAT-3SG one-NOM.SG
feþere *on* *muð* *oððe* *finger,*
feather-ACC.SG in-PREP mouth-ACC.SG or-CONJ finger-ACC.SG
'And then someone should thrust a feather or finger into his mouth,' (Lch II, Fragment, B21.2.4, lWS)

A careful analysis of this line from the Leechdoms demonstrates that the agent does not release the feather / finger until the action is completed and vomiting is imminent. Additionally, Levin classifies *sting* as belonging to verbs of exerting force, or push, pull verbs (class 12), which is exactly where *thrust* is found. For these reasons, *stingan* 'to sting, thrust', *bestingan* 'to thrust, push', and the *þyddan* group (see Table 1) were ultimately ruled out.

Something similar occurred with other potential candidates expressing quick movement and force—*abregdan* 'to move something quickly, wrench', and *tobregdan* 'to separate sth by a quick movement'. These terms are derived from *bregdan* 'to cast', a clear throw verb—see quotation (10) below. However, after a careful analysis of instances like (6) below, it becomes evident that the action, despite being sudden, does not involve casting away but removing with violence.

(6) *Þe* *abregdan* *sceal* *for* *þære*
you-DAT.2SG cast-INF shall-PRS.1.SG for-PREP the-DAT.SG
dæde *deað* *of* *breostum* *sawle*
deed-DAT.SG death-ACC.SG from-PREP chest-DAT.PL soul-ACC.SG
þine.
you-ACC.2SG
'I will rip death and soul out of your chest for this deed.' (GenA,B, l. 2639, lWS)

While throw verbs are glossed by *mitto* 'to dispatch, discharge', *iacto* 'to throw, cast, hurl', *eicio* 'to cast out, eject', or *proicio* 'to throw, fling, hurl', *abregdan* is defined by *destringo* 'to strip off, draw out' and *tobregdan* by *diripio* 'to tear apart, tear to pieces'. Finally, a decision was made in favor of the inclusion of *framascufan* 'to shove away from' in the list because of the term's similarity to *framaweorpan* 'shove away from', despite having been acknowledged only by TOE (Roberts et al., 1995, p. 333).

The final list of throw verbs operating in double object space is clearly smaller than the pilot list, as it is difficult to find evidence for many units that display an extremely limited number of quotations. The list, which is found below, contains 14 types and 51 tokens. Given the limited size of the DOEWC, the distribution of 14 types across five major options (see Table 1 above), and the attestation of 51 tokens, constitute strong evidence for their operationalization into the NOM-ACC-DAT construction.

The fifty-one ditransitive usages found in the DOEWC are mostly related to the Late Old English period, and more specifically, to late West Saxon (lWS; Möhlig-Falke, 2016). This reflects the overabundance of Anglo-Saxon records preserved from the 11th and 12th centuries. However, the corpus gathered also contains two early West Saxon attestations, one from the OE Orosius, the other from the Laws of Ine—*Gif ðeowwealh Engliscne monnan ofslihð, þonne sceal se ðe hine ah weorpan hine to honda hlaforde* 'If a slave Welsh kills an Englishman, then his owner will have to toss him into the hands of the Englishman's lord' (LawIne B14.4.5, 74). In addition, the range of text types (Kytö and Rissanen, 1992) is broad enough (religious works, translations from the Bible, imaginative fiction, legal documents, etc.) to support the stability and continuity of throw ditransitives throughout the entire Anglo-Saxon period.

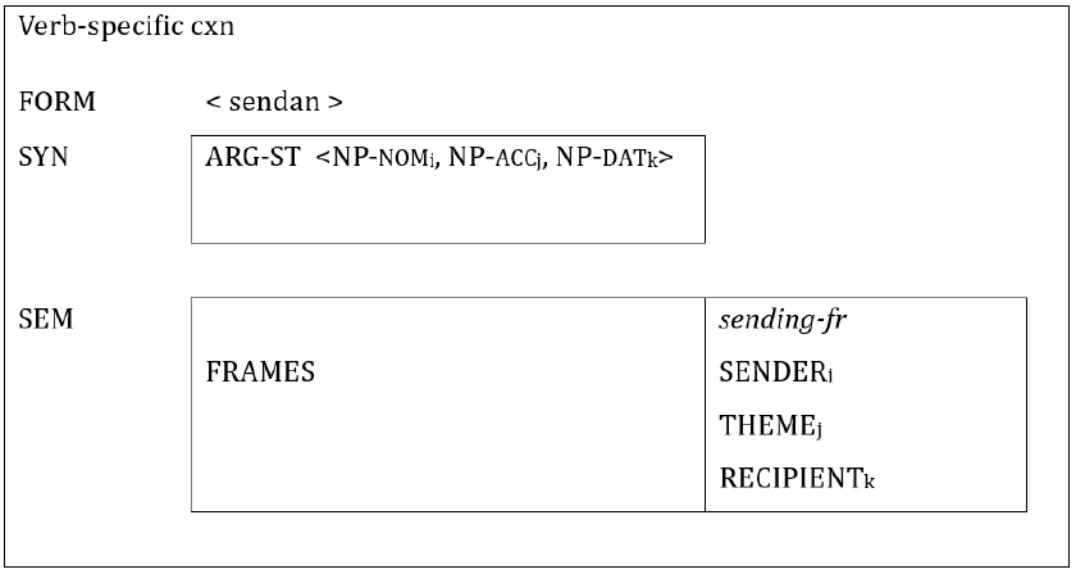
The data gathered for OE throw verbs are compared with data for present-day American and British Englishes to measure the respective degrees of constructionalization in the two historical phases. The corpora used are *The Corpus of Contemporary American English* (COCA; Davies, 2008) and the *British National Corpus* (BNC; Davies, 2004). The two differ significantly in size (1,000,000,000 words vs. 100,000,000) because, while BNC was published in 1993, COCA is still being continuously updated.

Nevertheless, since both corpora are part of English-corpora.org, this facilitates the use of a shared metalanguage for query design. As the main aim of the present investigation is the analysis of OE throw verbs operating ditransitively, the study of modern English was limited to throw (the prototype), shoot, and shove, which have withstood the passing of time. The queries conducted were the following—THROW / SHOOT/ SHOVE + PRON + NOUN, and THROW / SHOOT /SHOVE + PRON + DET + NOUN. The two queries aim to retrieve the maximum number of double object occurrences containing object personal pronouns, which are prone to appear in ditransitives (De Cuypere, 2015a, p. 3). The first query member, the verb, is lemmatized. In the process, the list of matches obtained for each search was carefully checked—1. *throw you guys*…, 5 matches; 2. *throw you outta*…, 3; 3. *throw them candy*…, 3; […] 7. *throw you bums*…, 2; 8. *throw him fastballs*…, 2, etc.

The DCxG approach used here (Barðdal & Gildea, 2015, pp. 01-50; Gildea & Barðdal, 2023, pp. 743-788) builds a theoretical model aimed at reconstructing constructions through the analysis of the earliest attested phases of one (or more than one cognate) language(s). The model has been in use for nearly the last two decades (Barðdal, 2007), primarily in work on the Indo-European family (Luján & Ruiz Abad, 2014), but also involving others (Gildea & de Castro Alves, 2020). In DCxG, a construction's argument structure is formalized into boxes (Michaelis 2010 & 2012; Sag 2012) like the one reproduced in Figure 1 for *sendan* 'to send', described here due to its close connections in semantic space with throw verbs.

In the box, information structure is defined as the sum of FORM, SYN(TAX) and SEM(ANTICS). The FORM section is activated only at verb-specific (main terms) and verb-subspecific levels (prefixed units), hence the presence of *sendan* (DCxG also creates other boxes for the description of more schematic constructional levels, but this issue, together with the reconstructive aspects of the model, is not part of the main goal of this study). The SYN section explains the argument structure pattern. In this case, *sendan* is a combination of three noun phrases, each displaying a specific case—nominative (NOM), accusative (ACC), and dative (DAT). Finally, the SEM section specifies the semantic frame involved and the semantic roles at play—SENDER, THEME, and RECIPIENT. Note that each semantic role is linked to its corresponding noun phrase in the SYN section.

Figure 1
Formalizing the verb-specific Nom-sendan-Acc-Dat construction



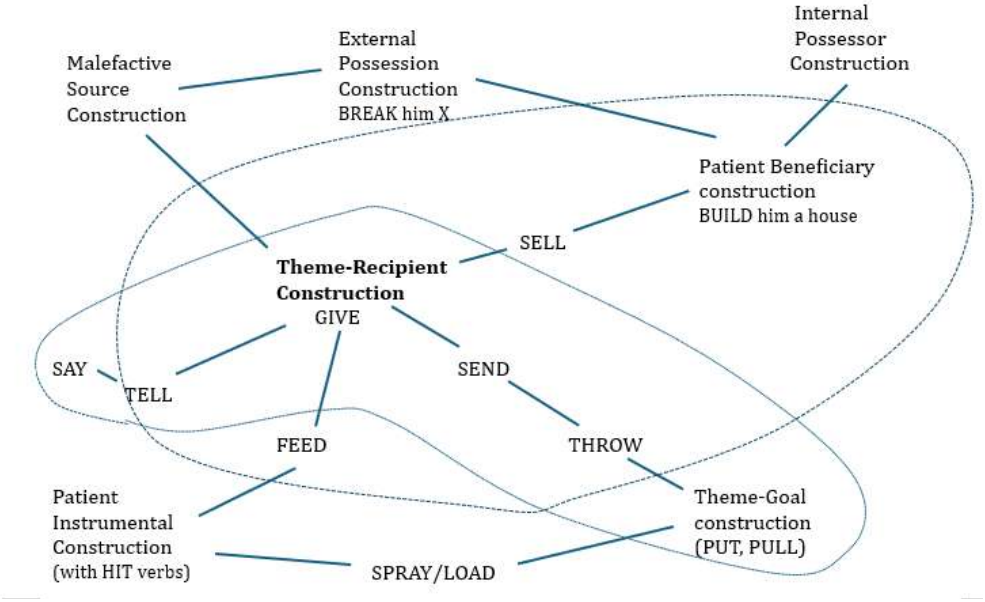
The degree of similarity between DCxG and PaVeDa is very high, syntactically and semantically. The valency pattern of the latter (1-nom > V.subj[1] > 2-acc > 4-dat4) fully matches the SYN description in Figure 1 above. The microroles used by PaVeDa are compatible with the roles found in DCxG. The two approaches combine constructionism with typology, or typology with constructionism, with the aim of reconstructing constructions. PaVeDA's typological program is ultimately intent on the characterization of the valency patterns for 80 core units in the 43 languages so far covered. The DCxG model used here develops corpus-based, in-depth analyses of full verb classes and conceptual domains which are linked to a given pattern, and classified into different linguistic levels according to a lexicality-schematicity hierarchy (Barðdal, 2008 & 2011). While the shift from caused motion to ditransitive plays a central role in this investigation, DCxG refines the analysis of level-specific throw units operating in NOM-ACC-DATs, and, by doing so, describes the constructional specifics of the cited verb class to the full.

The study of the ditransitive construction in the Germanic languages has been a recurring topic since the early stages of DCxG (Barðdal, 2007; Barðdal et al., 2011; Anonymous, 2019). The analysis of ditransitives and their reconstruction in Proto-Germanic at different levels of specificity and schematicity is based on a fine-grained classification of the verb classes and conceptual domains that participate in the NOM-DAT-ACC (or NOM-ACC-DAT) pattern. The list is noticeably broader than the nine classes usually associated with modern English (Goldberg, 1995, p. 388, *inter alia*), and has been

validated typologically in the Germanic domain through a comparison of English with modern Icelandic, other West Scandinavian languages, Old Norse-Icelandic, and modern German. For a full description of the nine major conceptual domains and the related sixteen verb classes, the reader is referred to Barðdal, Kristoffersen and Sveen (2011) and Vázquez-González & Barðdal (2019). The expression of change of possession through change of location is found in Domain 3, Deictically Directed Transfer (Vázquez-González & Barðdal, 2019, pp. 578-589, p. 610), with verbs of bringing (class 5) and sending (6). As stated above, this previous full-scale investigation of the complete set of verb classes operating in the most frequent OE ditransitive frame (NOM-DAT-ACC/ NOM-ACC-DAT) did not yield any results for ballistics.

DCxG distributes verb classes and domains in semantic maps. The following example illustrates this for the modern English ditransitive (Malchukov et al., 2010, p. 51):

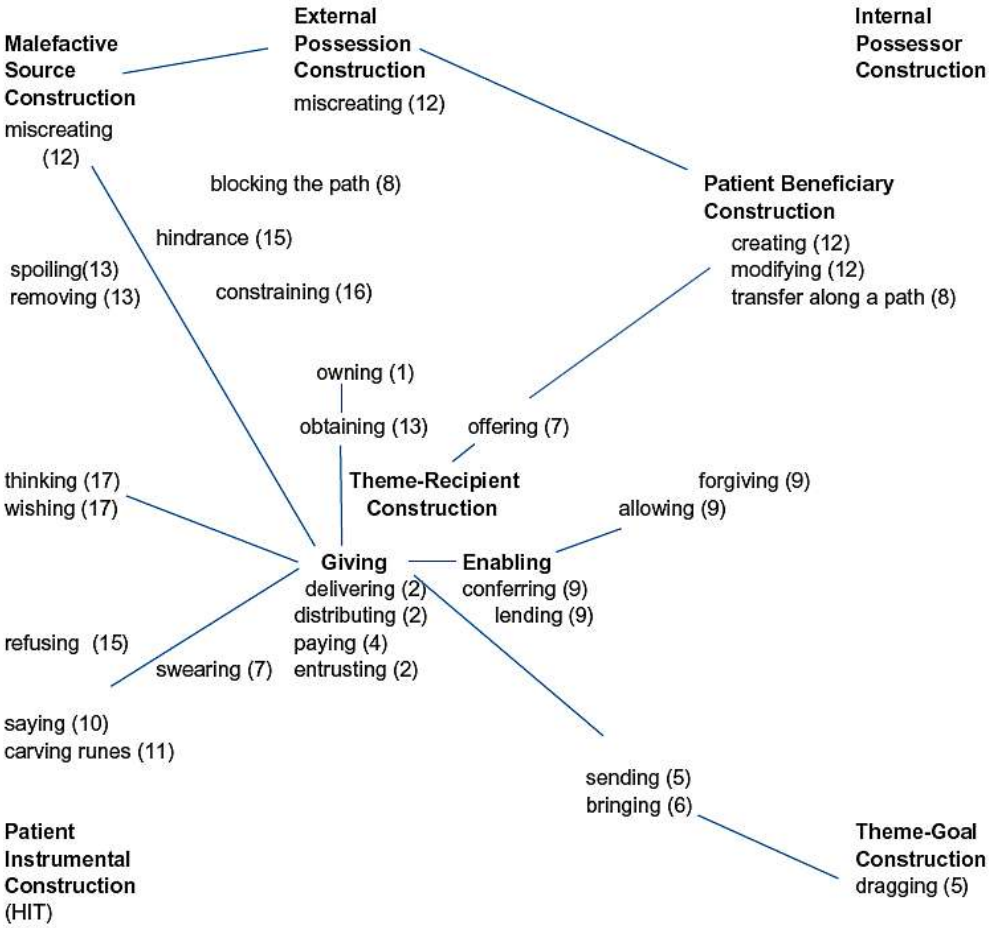
Figure 2
A semantic map of English ditransitive constructions



The map positions the ditransitives from each of the 80 world languages studied (Haspelmath, 2015) into several constructional areas. The core is represented by the Theme-Recipient Construction, with clines towards the periphery—Patient-Instrumental, Theme-Goal, Patient-Beneficiary, Internal Possessor, External Possession, and Malefactive Source Constructions. As observed in Figure 2, modern English ditransitives are limited in scope, linking to beneficiaries and approaching—but not reaching—theme-goals. The inventory of units used by Malchukov, Haspelmath and Comrie (2010) in the map is visually restricted to a few basic terms because

ditransitives have proved to be extremely reduced in number in the eighty languages studied by the ValPal project (Hartmann et al., 2013). The Indo-European languages are an exception, however. By conducting a full-scale, corpus-based analysis in one language like OE, the DCxG model manages to capture serialized snapshots of specific constructions, which improve the typological adequacy of the corresponding semantic map. The verb classes operating in the OE NOM-DAT-ACC (and NOM-ACC-DAT) construction are the following (Vázquez-González & Barðdal, 2019, p. 595):

Figure 3
The semantics of the ditransitive construction in Proto-Germanic



In DCxG, verb type clines like the one connecting theme-recipients with theme-goals (GIVE > SEND > THROW > PULL) are noticeably enriched. For the sake of illustration, Figure 3 above shows verb classes rather than specific verb types (but see, for instance, Vázquez-González, 2024, p. 22). Figure 3 also shows the absence of OE throw verbs in the sequence. This anomaly is all the more surprising given the participation of theme-goals (see the map's bottom right) in double object space with manner-of-motion types like *dragan* 'to pull, drag'. It is now time to discuss the findings.

Results

This section begins by displaying the list of verb types and their exemplification in verb-specific constructions, quotations (7)—(12), and then proceeds to provide a discussion of the group. The inclusion of a list of terms and their corresponding quotations here follows the methodology used in Visser's study of double object constructions (1963, pp. 606-48), whose analysis of pattern 3 + 4 for NOM-DAT-ACCs/NOM-ACC-DATs (pp. 621-35) nevertheless fails to contain any throw verb (Barðdal, 2007, p. 26). The terms are arranged according to etymological themes, with core units in small caps. Every type is provided with a definition (Bosworth-Toller, 1921) and the total number of quotations. For lack of space, only a selection of the most representative types is included in the examples below. In the present study, all quotations are provided with morphological interlinear tagging according to the Leipzig Glossing Rules.

LIST OF VERB TYPES: WEORPAN to 'cast, throw, fling' (9); *aweorpan* 'to throw, cast, (quickly and/or violently)' (7), *framaweorpan* 'to cast, throw away' (6), *toweorpan* 'to throw out' (1), SENDAN 'to throw, hurl (stronger sense of motion)' (8), *asendan* 'to send forth/out' (4), *onsendan* 'to send forth or out' (8), *insendan* 'to send in' (1), BESCEOTAN 'to shoot into, fling' (1), BREGDAN 'to cast, move quickly, throw' (1), SCUFAN 'to shove' (2), *ascufan* 'to push away, shove away' (1), *framascufan?* 'shove away from' (1), ONWEALCAN 'to toss, roll' (1).

(7) *awyrp* *me* *þonne* *hyder* *Þinne*
throw-IMP.SG I-DAT.SG then-ADV here-ADV you-ACC.2SG
scyccels *þe* *þu* *mid* *bewæfed*
cloak-ACC.SG which-REL you-NOM.2SG with-PREP clothed-PST.PTCP
eart.
be-PRS.2SG
'Throw me your cloak here, the one that you are wearing,'
(LS 23, Mary of Egypt, B3.3.23, 256, lWS)

(8) *He* *onsende* *on* *muð* *minne*
he-NOM.PL throw-PST.3SG into-PREP mouth-acc I-ACC.1SG
cantic *niwne* *ymen* *gode* *urum,*
song-ACC new-ACC hymn-ACC god-DAT.SG we-DAT.PL
'He cast a new song into my mouth, a hymn to our God.'
(PsGlD, Roeder, C7.9, 39.4)

(9) *Ða* *deoflu [...]* *bescuton* *hi* *anum*
the-NOM.PL devil-NOM.PL fling-PST.3PL he-ACC.3PL one-DAT.SG
fyrenan *dracan* *innan* *þone* *muð*
firy-DAT.SG dragon-DAT.SG into-PREP the-ACC.SG mouth-ACC.SG
'The devils flung them into a flaming dragon's mouth'
(HomU 26, Nap 29, B3.4.26, 222, lWS)

(10) Swa sceal mæg don, nealles
so-ADV shall-PRS.3SG man-NOM.SG do-INF not-ADV
inwitnet oðrum bregdon dyrnum cræfte
net-ACC.SG other-DAT.PL Cast-INF evil-DAT.SG art-DAT.SG
'A man should always do so, and never cast an evil net at others through secret arts.' (Beo A4.1, 2,166, lWS)

(11) *Þa* *se* *cyning [...]* *neadunga* *þone*
then-ADV the-NOM.SG king-NOM.SG forcibly-ADV the-ACC.SG
witegan *him* *to* *handum* *asceaf.*
prophet-ACC.SG he-DAT.3SG into-PREP hand-DAT.PL throw-PST.3SG
'Then the king [...] was forced to shove the prophet into their hands'
(ÆCHom I, 37, B1.1.39, lWS)

(12) *ond* *dryhtnes* *bibod* *geofonfloda* *gehwylc*
and-CONJ lord-GEN.SG order-ACC.SG flood-GEN.PL all-NOM.SG
georne *bihealdeð,* *þonne* *merestreamas* *meotudes*
well-ADV hold-PRS.3SG then-ADV sea-NOM.PL lord-GEN.SG
ræswum *wæter* *onwealcað.*
chief-DAT.PL water-ACC.SG toss-PRS.3PL
'And every ocean flood obeys the Lord's commandment, when the sea streams toss the rolling waters against the Lord's counsellors.'
(Az A3.3, 122, lWS)

As expressed by the meanings of the verb types in the list, the great majority of them (*weorpan*, *sendan*, *besceotan*, *bregdan*, and related derivatives) are clearly associated with ballistics, with a physical, sudden and quick transfer after the AGENT

releases the PATIENT/THEME. However, the throwing is originated differently in the *scufan* group and *onwealcan*. In the first case, exemplified in quotation (11), throwing blends with force. Levin includes shove under verbs of throwing (1993, p. 146), and also tentatively within verbs of exerting force, where it coincides with push and thrust (1993, p. 137). In the second case, illustrated in quotation (12), the throwing combines with manner of motion—see roll verbs in Levin (1993, p. 264).

The weight of *weorpan* and its derivatives in the group is remarkable. They constitute the most productive set in terms of quotations, amounting to nearly half the entire group—23/46 tokens. Quotation (7) for *aweorpan*, taken from Ælfric's Mary of Egypt, an 11th-century Saint's Life, demonstrates the presence of directionals in the double object construction. This issue will be readdressed below.

The *sendan* group is also highly productive, with 17 quotations. As previously discussed, finding examples for the secondary sense of sending was no easy task. One way used to detect throwing usages was by identifying semantic affinity through Latin glosses. This explains the inclusion of quotation (8) in this section. The line is from psalm 39—*Et immisit in os meum canticum novum, carmen Deo nostro*. Lewis and Short (1949) describe *inmitto* as implying 'to send or dispatch against, let loose at, discharge at, to cast or throw into', clearly indicating ballistics, and hence supporting our analysis of the glossed OE line.

Despite the fact that ballistic usages are common for many of the terms in the list, it was surprising to find the *sceotan* group (see Table 1 above) so poorly represented. The only term involved is *besceotan* 'to shoot into, fling', appearing in quotation (9), an excerpt from one of Wulfstan's Homilies. Other units expressly signifying the shooting of missiles like *torfian* 'to throw stones at someone', *lælian* 'to hurl a dart', *strælian* 'to shoot', and astr*ælian* 'to hurl a dart' do not show any double object usages in the DOEWC either. The lack of ditransitivity in these terms and the *sceotan* group is very probably due to a gap in the records.

Quotation (10) shows the only level-specific constructional usage associated with the *bregdan* group specifying throwing, hurling. The line is from Beowulf, a piece of advice in favor of gift-giving and against evil plotting. Even though the usage is metaphorical, since it is a nest of evil intentions that is cast, the ballistic rendering

clearly contrasts with the notion of wrenching, drawing from with force as specified by its derivative *abregdan*. Quotation (11), taken from one of Ælfric's Homilies, demonstrates the particular blend of ballistics with force in *scufan*, with a reluctant king violently pushing Daniel the prophet back into the hands of the Babylonians. Finally, in quotation (12) manner of motion resides in the violent rolling of the sea's waves, tossing a boat and its crew until they are commanded to stop.

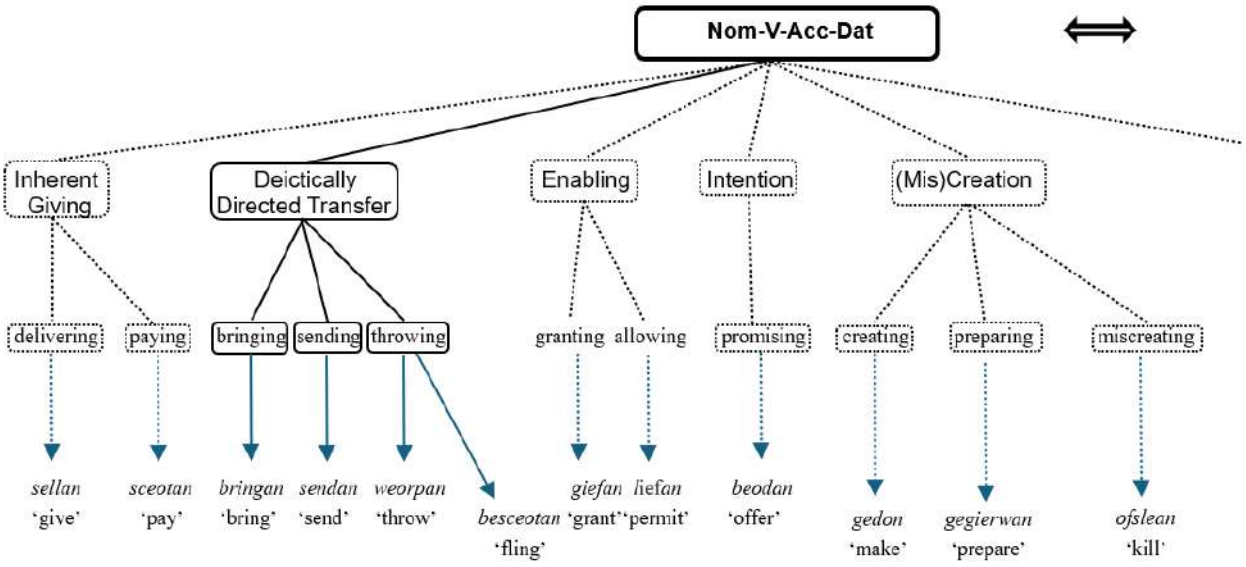
Formalization, discussion, and constructionalization

This section frames the results discussed previously in terms of the three major axes that constitute the DCxG model used in this study. First, an illustration is provided of the position occupied by throw verbs within the lexicality-schematicity hierarchy. Then, attention is directed to the typological cline spanning from the Theme-Recipient to the Theme-Goal Constructions, in order to produce a detailed semantic map proposal for throw verbs. Finally, a formalized account of the corresponding DCxG box is presented, which leads to a discussion of the differences between double object constructions for throw in OE and in modern usage.

Figure 4 below positions throw verbs within the lexicality-schematicity hierarchy of the NOM-ACC-DAT construction.

Figure 4

The lexicality-schematicity hierarchy of the OE ACC-DAT construction



In DCxG, information structure is distributed across five different linguistic levels: verb-subspecific, verb-specific, verb-class-specific, higher-level conceptual domain, and event type. Figure 4 is a partial reproduction of the NOM-ACC-DAT subconstruction, with a selection of five from the nine major conceptual domains. All of these, except Deictically Directed Transfer, appear in dotted lines. Verb-subspecific and verb-specific constructions are instantiated by prefixed verbs like *besceotan* 'to shoot, fling' and unprefixed main terms like *weorpan* 'to throw, hurl'. Schematicity begins higher up, at the verb-class level, with bringing (class 6), sending (5), and, according to the findings discussed previously, throwing. The three groups configure the corresponding higher-level conceptual domain, Deictically Directed Transfer, whose argument structure information forms part of the basis for the reconstruction of the event-type NOM-ACC-DAT construction, the most schematic of options.

Now, a question could be raised about whether throw verbs actually form part of Deictically Directed Transfer or should constitute a category on their own. In double object space, the three verb classes specify a change of possession through change of location. While sending and bringing describe the two directions of the transfer, one each, it might be thought that throw verbs do not do the same, since they appear to refer only to the end point of the transfer. However, the lexicalized presence of pairs like *weorpan* / *framaweorpan* and, probably, *scufan* / *framascufan*, focalizing a similar bidirectionality, expresses the deictically-marked starting and ending points of the transfer. Only the difference between continuous and spontaneous translational motion sets these verb classes apart, then.

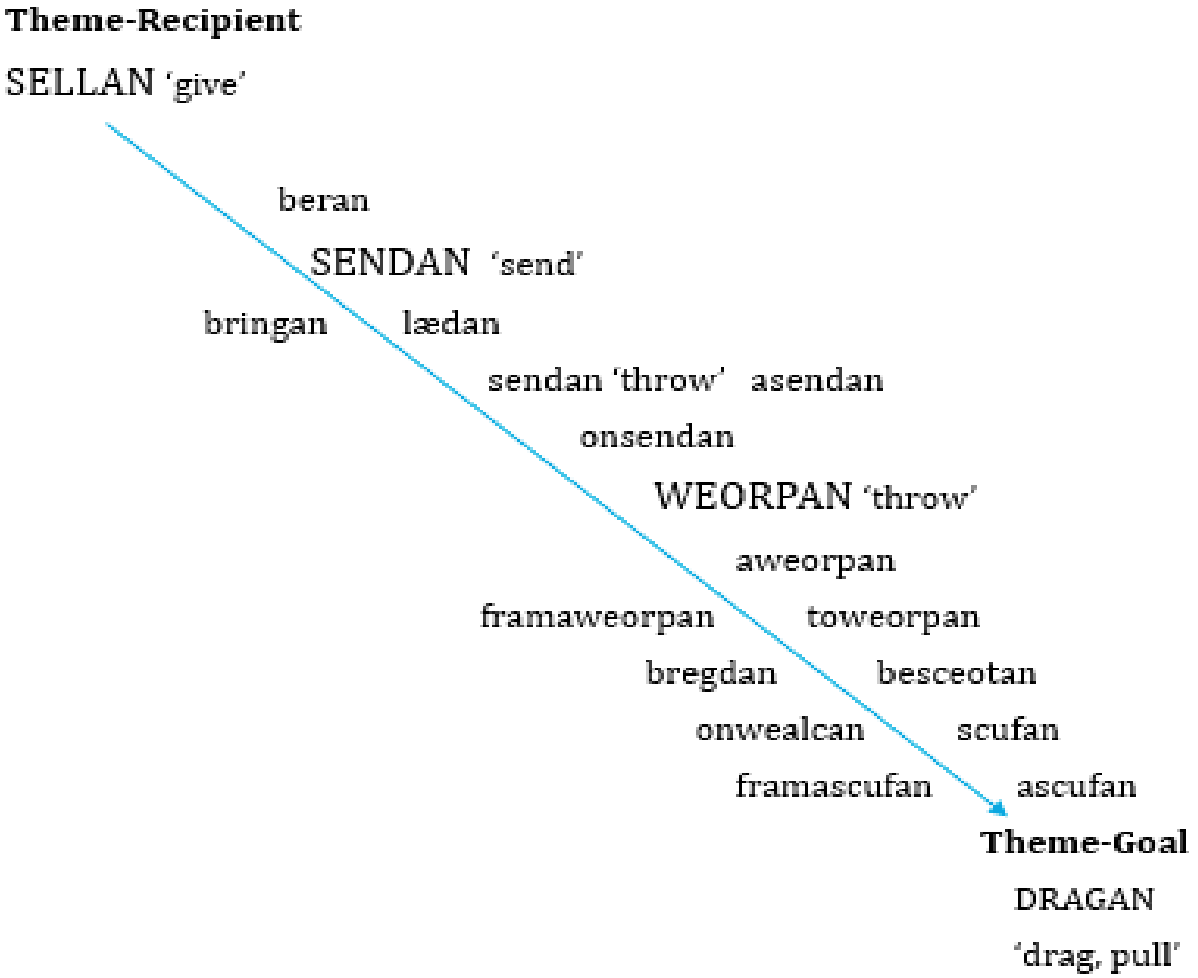
The positioning of throw verbs in the lexicality-schematicity hierarchy is also enriched through the corresponding semantic map proposal. While Figure 2 and Figure 3 portray the whole typological semantic space for modern English and OE double object constructions, Figure 5 captures a detailed snapshot of the cline extending from the Theme-Recipient to the Theme-Goal constructions in OE NOM-ACC-DATs.

The cline GIVE > SEND > THROW > PUT, PULL in Figure 2 is now SELLAN > SENDAN > WEORPAN > DRAGAN. The presence of throw verbs in this semantic map for OE NOM-ACC-DATs fills a gap that existed in a previous proposal for ditransitives in OE (Anonymous, 2019). Note the saliency of *weorpan* and related derivatives, and the

participation of *sendan* in two areas, linking sending with throwing. Terms expressing proximity are distributed to the left, with bringing (*bringan*) and throwing/shoving from (*framaweorpan*, *framascufan*), while those relating to distance are predominantly situated to the right, with sending (*sendan*), throwing, and with the rest of the terms, in that area of conceptual space. Units conceptually more complex like the *scufan* group, which combines throwing with force, or *onwealcan*, which blends tossing with rolling, are located in the bottom right.

Figure 5

A semantic map proposal for OE throw verbs

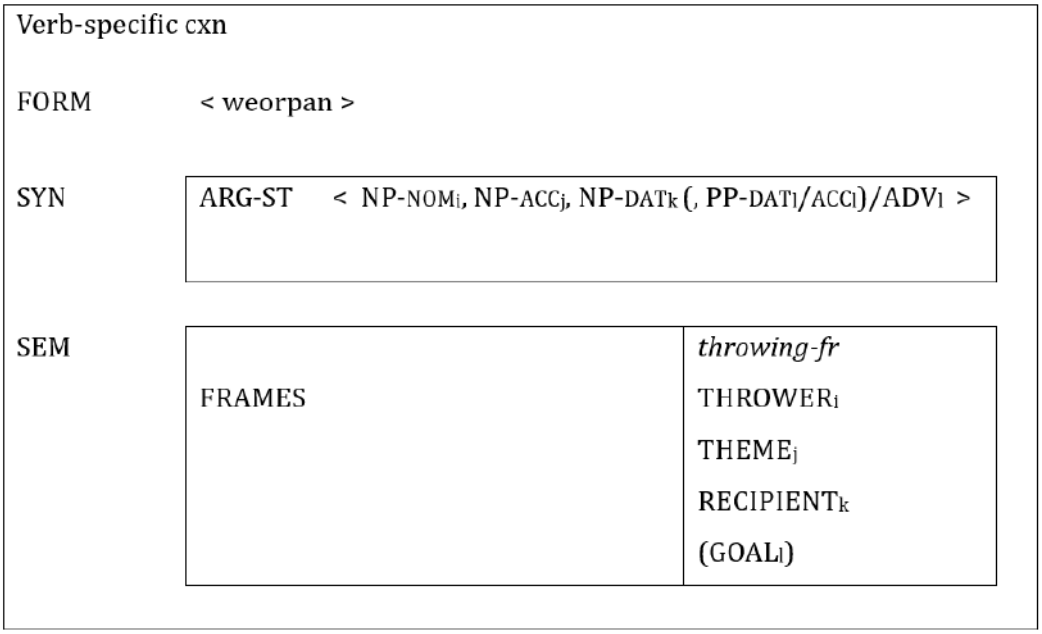


Each of the terms included in the typologically validated semantic map proposal presented in Figure 5 above is provided with a formalized account of its argument structure in DCxG terms. Figure 6 below presents the corresponding box for *weorpan* 'to throw, hurl, fling', a description that also applies to the remaining throw units.

The frame this time is throwing, containing a THROWER in the nominative, a THEME in the accusative, and a RECIPIENT in the dative. The three cited arguments are valid for explaining the merging of change of location with change of possession. However, the box also includes a fourth argument—GOAL—expressed by means of a prepositional phrase in the dative/accusative, or by an adverbial. This fourth argument, a directional, is optional. In these cases, there is no merging between change of location and change of possession, the two being rendered by distinct arguments, RECIPIENT and GOAL.

Figure 6

Formalizing the verb-specific NOM-weorpan-ACC-DAT construction



The fifty one constructional usages found for throw verbs in this study show a majority of twenty eight quotations that include a GOAL of some kind, while the remaining twenty three contain the three compulsory arguments as displayed in the SYN section of the box. In this respect, compare quotations (7)-(9) and (11) above, with directionals like *hyder* 'hither', *on muð minne* 'into my mouth', *innan þone muð* 'into the mouth', and *to handum* 'into (their) hands', with (4), (10) and (12), lacking them. In the case of those types showing more than one quotation, the findings show that most of these units operate with three or four arguments variably, depending on the specifics of the context—*sendan* shows an even distribution, with four cases for each option;

weorpan, on the other hand, seems to favor non-prepositionals, with seven instances, although the term also appears twice in combination with these.

The data obtained for OE double object constructions described above noticeably contrast with those for present-day American English and British English. The two queries for throw, shoot, and shove, described above and performed on COCA (Davies, 2008-) and BNC (Davies, 2004), yield different results regarding the number of prepositional directionals. While shove surprisingly fails to operate ditransitively in the two corpora, the data obtained for throw in COCA show 115 three-argument ditransitives and only 8 in which prepositionals appear. The contexts found in these constructional usages mostly involve drinking (beer, whiskey), food (scraps, fish, sandwiches, apples, maize, bait, etc.), American football (Hail Marys), and baseball (balls, fastballs, curveballs, another strike, etc.). The BNC shows similar results, with 4 double object constructions (throwing bits, ropes, and questions) and no single instance of directionals. For illustration, quotations (13) and (14) represent the two argument structure variables in throw:

(13) *I* *guess* *I'm* *going* *to* *start*
I-PRON.1.SG guess-INF be-PRS.1SG go-GER to-CON start-INF
throwing *him* *all* *fastballs.*
throw-GER he-3.SG.IO all-DET fastball-N.PL
'I guess I'm going to start throwing him all fastballs.'
NEWS: Associated Press. Baseball Today: SCOREBOARD. 1990

(14) *Somebody* *threw* *me* *that* *apple,*
Somebody-INDH throw-PST.3SG I-PRON.1SG.IO that-DEM apple-N
I *think,* *from* *down* *below.*
I-PRON.1SG.SUBJ think- PRS.1SG from-prep down-ADV below-ADV
'Somebody threw me that apple, I think, from down below.'
MAG Rolling Stone, EXPLORING ASIA (Cover story, Erik Hedegaard), 2002

Regarding shoot, the queries conducted in COCA yield 30 double object usages and none including prepositionals. In BNC, the two options show one example each. When calculated, the total number of directionals for shoot is virtually negligible (31/1).

Given the scarcity of directionals for throw and shoot in the two national varieties of English examined, it can be affirmed that double object patterns exhibit a

higher degree of constructionalization in modern English, with an argument structure primarily consisting of three members—THROWER, THEME, and RECIPIENT. Directionals are used from time to time, but in the vast majority of cases, change of location and change of possession merge. The fusion of two roles (RECIPIENT and GOAL) into one (RECIPIENT) indicates a major drive toward non-compositionality, and clearly reflects a higher degree of schematized constructionalization (Traugott & Trousdale, 2013, pp. 94-148) in the pattern.

This raises the question regarding the corresponding degree of constructionalization in OE. As affirmed above, the data show a slight majority of constructional usages containing prepositionals (28 / 23). The information structure of OE throw verbs may contain only three arguments, but finding four is more frequent. The *sendan* and *weorpan* groups operate either way depending on the particulars of the context. The four quotations for *scufan*, *ascufan* and, possibly, *framascufan* all contain directionals, as illustrated by quotation (11). Additionally, direction from is grammaticalized in *framascufan* and *framaweorpan*. Based on the evidence presented in this study, it can be safely concluded that the argument structure of OE throw verbs is more complex than that of their modern counterparts and more weakly constructionalized. Nevertheless, the twenty-three instances containing three arguments already demonstrate that a more schematized constructionalization was already in operation, and probably in competition with the full compositionality exhibited in the majority of cases.

Conclusions and directions for further research

This study presents the first systematic analysis of OE throw verbs operating in the NOM-ACC-DAT construction to date. Based on a series of specific, *ad hoc* searches conducted in the DOEWC online, it has been possible to gather 14 verb-(sub)specific types and 51 related constructional usages. The findings represent a substantial update in OE linguistics, given that they are undocumented in previous analyses of OE double object complementation. By retrieving such a large group of types and constructional usages from the DOEWC, this investigation reframes PaVeDa's analysis of *weorpan* into an in-depth examination of throw verbs, successfully capturing a detailed snapshot of their argument structure specifics.

The analysis of the data gathered for ballistic motion in OE proves that these constructional usages are neither hapax legomena nor a few isolated occurrences scattered throughout the late West Saxon period. The throw group exists as a verb class on its own and should be acknowledged accordingly. Even though the findings are primarily associated with the late West Saxon period, it has been possible to establish the existence of ballistics during early West Saxon, too. Additionally, the range of text types represented by the tokens found is wide enough to guarantee this group's regular distribution.

The space for THROW in the corresponding semantic map proposal, a middle point between the Theme-Recipient and Theme-Goal constructions, is significantly enriched. As already demonstrated, the *sendan* group curiously bridges the areas of continuous and instantaneous motion. The weight of the *weorpan* group is noticeable, with 4 types and 23 tokens. There are also other options for casting out (*bregdan*), or hurling (*besceotan*). Some terms, like the *sceofan* group, highlight the blending of instantaneous motion with force. In others, like *onwealcan*, tossing combines with manner of motion.

Another interesting finding shared with verbs of bringing and sending is that the transfer shown by the throw group also operates in a deictically directed manner. While it is true that most of the types specify direction towards, motion away from also makes its way through grammaticalization into terms like *framaweorpan* and, possibly, *framascufan*. This finding suggests that throw verbs share adjacent conceptual space with verbs of bringing and sending, and should accordingly be incorporated into Deictically Directed Transfer, the corresponding conceptual domain in DCxG,

The analysis of the fifty one constructional usages found also shows a more flexible and elaborate argument structure for these verbs than expected, displaying four arguments instead of three on most occasions. The semantic roles of AGENT, THEME, and RECIPIENT are obviously required by object inversion in the shift from a basic caused-motion construction to the corresponding alternating ditransitive. However, the presence of GOAL(s) in the majority of instances (twenty-eight) was surprising. The persistent recurrence of morphosyntactic directionals expressing movement to and from within the throw group clearly demonstrates that the schematic merging of change of location with change of possession, implied by object inversion, is not accomplished in the majority of the fifty one constructional usages found. As the remaining twenty

three instances already express the typical, schematized three-argument structure expected from object inversion, it can therefore be affirmed that during the (late) OE period the argument structure of throw verbs was flexible and could opt for either option depending on contextual specifics.

A comparison with the data gathered for throw, shoot, and shove from COCA and BNC demonstrates that directionals become extremely marginal over time. This is interpreted in terms of different degrees of constructionalization across the two periods, with present-day American and British Englishes exhibiting a three-role argument structure, and OE alternating between four fully compositional arguments (in most cases) and the cited three. It can therefore be safely concluded that the degree of constructionalization displayed by OE throw verbs in double object constructions is relatively low.

The new data regarding the use of OE throw verbs in the NOM-ACC-DAT construction also need to be approached from a historical comparative perspective. The substantial amount of data gathered in this investigation constitutes the first systematic piece of evidence for the participation of ballistic motion as a verb class in the NOM-ACC-DAT construction in an early West Germanic language. In North Germanic, throw verbs have been shown to operate only in the NOM-DAT-DAT construction (Barðdal, 2007, pp. 16-18; Barðdal et al, 2011, p. 60). In East Germanic, PaVeDa's example *jah þana stainam wairpandans* 'and at him they cast stones' (Tarsi & Zanchi, 2024), provides a clear demonstration of the use of the NOM-ACC-DAT construction in Gothic. The presence of the same cognate double object construction in West and East Germanic therefore suggests the possibility of a shared origin, but the issue lies outside the scope of this study and further research is needed in this respect.

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