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The trolley rumbled through the tunnel: On the history of the English Intransitive Motion Construction

Abstract: This article examines the history, from Old English times to the first quarter of the twentieth century, of the Intransitive Motion Construction. It compares the development of its result subschema (*The trolley rumbled through the tunnel*), where the verb is one of sound emission, with the development of other subschemas of the construction, in particular the manner subschema (*The man walked in*), where the verb denotes manner of motion. As shown by earlier research, the manner subschema and the manner of motion lexicon have greatly expanded since the Old English period, especially in Modern English. The result subschema, by contrast, although attested as far back as Old English, remains marginal until the nineteenth century, when it finally gains in importance, thus making the Intransitive Motion Construction more versatile. This expansion in the conceptual range of the construction, from predominantly coding manner of motion to describing other highly specific details of motion, such as the sound resulting from it, is linked to the addition to the English lexicon, in relatively recent times, of a great number of new sound verbs whose frequency of use has been constantly on the increase. Furthermore, the paper argues that these changes in the English sound verb inventory are also responsible for some of the developments undergone by the so-called *Way*-construction (*The steamer plashed its way forward*) in the Late Modern English period.

Keywords: sound-emission verbs, Intransitive Motion Construction, *Way*-construction, motion encoding, force-dynamics

1 Introduction

The central aim of this paper is to examine the early history of the constructional pattern exemplified in the title and reproduced more fully in (1). Here the combination of the directional phrase *up and down* with the sound-emission verb *rumble* imposes a motion meaning through *coercion* (Michaelis 2003): the

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construction denotes both an event of motion, and the emission of a sound caused by that motion. In (2), by contrast, *rumble* occurs without a following directional phrase, and thus denotes simply the production of a sound of some kind, with no implication of motion.

(1)   1642 J. Taylor, St. Hillaries Teares 5: *The Coaches which had wont to **rumble** up and downe.* (*OED rumble* v.^{2} 4.a. 'To move or travel with a rumbling sound'.)

(2)   1483 Caxton tr., J. de Voragine, Golden Legende f. ccclxvi/2: *His thye* ['thigh'] *beganne **romble** and made soo grete a noyse that it semed that the bone brake.* (*OED rumble* v.^{2} 3. 'To make a low heavy continuous, but varying, sound'.)

Examples similar to (1) are comparatively frequent in Present-Day English (see Rohde 2001: 244). They constitute a subtype, referred to henceforth as the *result subschema*, of the much larger class of motion expressions first discussed by Goldberg (1995: 3, 78) under the label of Intransitive Motion Construction (IMC). Prototypical instances of the IMC consist of a subject, an intransitive verb of motion, and a directional phrase, as in (3):

(3)   Intransitive Motion Construction [SUBJ V OBL$_{directional}$]
    a. *The girl walked into the room.*
    b. *The ball rolled down the hill.*

The IMC, and motion events in general, have become the focus of intense investigation in recent years. Most analyses have approached the construction synchronically or from a typological perspective, e.g., Goldberg and Jackendoff (2004: 536–544), Filipović (2007), Cifuentes Férez (2010) and, especially, Rohde (2001: 237–297), which is the fullest analysis of the IMC to date. The early history of the construction has received much less attention, though a few aspects of it have been discussed in recent work by Huber (2012; 2013a; 2013b; 2014), Stefanowitsch (2013), and the author of the present article (Fanego 2012; Fanego 2014). Nothing has yet been done, however, on the subtype of the IMC illustrated in (1) above, where the verb is one of sound. In what follows, therefore, I will try to provide answers to the following closely related research questions:

(a) what was the semantics of the IMC in earlier stages of English? In other words, what kinds of semantic relations could hold between the verb and the construction?

(b) what has been the course of development, since Old English times, of the result subschema, where V is a verb of sound emission?

(c) how has the inventory of English sound verbs evolved?

(d) how has the IMC interacted with the *Way*-construction (Goldberg 1995: 199–218)? This, as illustrated in (4), is a motion pattern involving a verb, the lexical element *way* preceded by a possessive determiner which is coreferential with the subject, and a directional phrase.

(4) *Way*-construction [SUBJ$_i$ V [POSS$_i$ *way*] OBL$_{directional}$]
CLMET3.03 1865 Lewis Carroll, Alice's Adventures in Wonderland: *the frightened Mouse **splashed his way** through the neighbouring pool.*

The remainder of the article is organized as follows. Section 2 introduces the theoretical background, namely Talmy's (1975; 1985a; 2000) typology of motion events and Goldberg's version of Construction Grammar (1995; 2006). Section 3 briefly reviews the literature on sound-emission verbs in Present-Day English (PDE). Section 4 outlines the data sources and the procedure for data collection on sound-emission verbs in earlier stages of English. The various subtypes making up the IMC in earlier English are presented in Section 5. Section 6 is concerned with the result subschema specifically, tracing its development in each of the historical periods, namely Old English (OE, up to 1100; Section 6.1), Middle English (ME, 1100–1500; Section 6.2), Early Modern English (EModE, 1500–1700; Section 6.3) and Late Modern English (LModE, 1700–1925; Section 6.4); a fifth subsection (Section 6.5) addresses question *c* above and discusses changes in the English sound verb inventory, on the basis of the materials presented in Sections 6.1–4 and of a detailed corpus analysis using the Corpus of Late Modern English Texts, version 3 (CLMET3.0 = De Smet et al. 2013). Section 7 presents the conclusions and some suggestions for future research, relating in particular to question *d* above.

2 Theoretical background

2.1 Talmy's typology of motion events

The expression of motion events across languages has been a topic of lively debate since the publication forty years ago of Talmy's influential work (1975; 1985a; 2000) on the classification of the world's languages into *satellite framed* and *verb framed*. A motion event, according to Talmy (2000: II, 25–26), consists

of four components: a) a figure moving with respect to another entity; b) the reference entity, or ground, with respect to which the figure moves; c) the path followed by the figure with respect to the ground; d) the motion. Thus in (5) below, *he* functions as the figure, *the room* as the ground, *into* expresses path, and *went* motion.

(5) *He   went   into   the room*.
     Figure Motion Path Ground

Motion events can be simple or unitary as in (5), which indicates only one dimension of the motion, and complex as in (6–8). A complex motion event encodes or *conflates* within a single verb an additional co-event of motion, very often the manner, other possible co-events, according to Talmy's categorization (2000: II, 28, 47), being precursion, enablement, cause, concomitance, concurrent result and subsequence. Thus a manner, in addition to a motion, is expressed by *walked* in (6) and *floated* in (7), while in (8) the form *splashed* expresses a concurrent result (the water splashes as a result of and concurrently with the rocket's motion into it):

(6) *She walked in.*

(7) *The bottle floated out (of the cave).*

(8) *The rocket splashed into the water.*

Talmy's main concern is with how the various components of a motion event mentioned earlier (i.e., figure, ground, path, motion) are realized in the surface expression. He pays particular attention to two classes of surface elements, verbs and satellites, and their patterns of *lexicalization* or regular association with one or more of those components of meaning (see Talmy 1985a: 59). For the purposes of this paper, the inventory of English satellites will be considered to include verb particles (*in, out, off, along, around*, etc.) and prepositional and adverbial phrases (e.g., *into the room* in [5], *into the water* in [8], *there* in *She walked there*).

    Based on how the path component is mapped onto syntactic structure in a complex motion event, Talmy (1975; 1985a; 2000) concluded that the world's languages generally seem to divide into two distinct classes: satellite-framed languages such as English, German, Swedish, Russian and Chinese, which characteristically encode manner in the main verb and path in a satellite, as

in examples (6)–(8), and verb-framed languages such as Spanish, French, Turkish and Semitic, which characteristically express path in the verb, and leave the expression of manner to an independent, usually adverbial or participial constituent whose presence in the clause is optional and which indeed is often not expressed at all. Consider the following examples from Spanish:

(9) *La botella* **salió**   *de   la   cueva (flotando)*
     the bottle   moved.out from the cave   (floating)
     'The bottle floated out of the cave.'

(10) **Entró**   *en   el   cuarto*, *acompañada del susurro siseante de sus*
     she.entered into the room   accompanied by the.rustle of her clothing
                                    ropas.
     'She rustled into the room.' (quoted from Slobin 1996: 213)

Typically, satellite-framed languages have a whole series of manner-of-motion verbs that express motion occurring in various manners or by various causes: *walk, run, jog, trot, glide, leap*, etc. As Talmy notes, in a language like English the pattern with a manner verb, as in (6)–(7), constitutes "[the] most characteristic expression of Motion" (Talmy 2000: II, 27), in that it is colloquial rather than literary in style; it occurs frequently rather than occasionally in speech; and it is "pervasive, rather than limited – that is, a wide range of semantic notions are expressed in this type" (ibid.).

    A second typological distinction going back to Talmy, which is also relevant to this research, relates to the contrast between *directed* (or *translational*) motion and *undirected* (or *locational*) motion.[1] In the former, illustrated by (5)–(8) above, "the location of the Figure changes in the time period under consideration" (Talmy 2000: II, 25, and elsewhere) and "hence has a result state, namely location at the destination" (Croft 2012: 301). In undirected motion, by contrast, the figure stays within the boundaries of a location, as in *He ran in the park (for three hours)*. Some languages, for instance German and Russian (cf. respectively Serra-Borneto 1997: 58–59, Croft 2012: 110–115, 300), make a morphosyntactic or lexical distinction between motion as directed activity and motion as undirected activity, but English, in contrast, uses the same verb forms for both.

    As will be evident by now, my concern in this paper is with directed motion, since it is primarily when verbs of sound emission occur in combination with telic satellites that they can be conceived of as predicating a motion event.

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1 Talmy's label for undirected motion is *self-contained* motion (2000: II, 25, 35–36). This label is less transparent, and rarely used in the literature.

Witness the contrast between (11a) and (11b); in the latter, as Rohde notes (2001: 256–257), the most natural interpretation is simply that the car is in the parking lot with its motor running and making a rumbling noise:

(11)   a. *The car rumbled into the parking lot.*
       b. *The car rumbled in the parking lot.*

2.2 Construction grammar

The version of Construction Grammar adopted here, which basically follows Goldberg (1995; 2006), assumes that grammar consists of a large network of constructions. These are stored pairings of form and meaning, of varying levels of generality and productivity. They are "connected to meaning in a conventionalized and partially idiosyncratic way" (Goldberg and Jackendoff 2004: 532–533; also Goldberg 1995: 4, and elsewhere); in addition, "patterns are stored as constructions", even if they are fully compositional, "as long as they occur with sufficient frequency" (Goldberg 2006: 5).

The representation of constructions in Goldberg's model involves at least two components: a formal side (*Syn*), which specifies a particular configuration of constituents, and a semantic side (*Sem*), which specifies an overall event meaning as well as a number of semantic roles corresponding to the constituents. In addition, the representation may specify further levels, including a set of semantic relations (*R*) that hold between the event meaning provided by the construction and that provided by the verb. We can illustrate this with the English IMC; the representation in Figure 1 is based on the discussion in
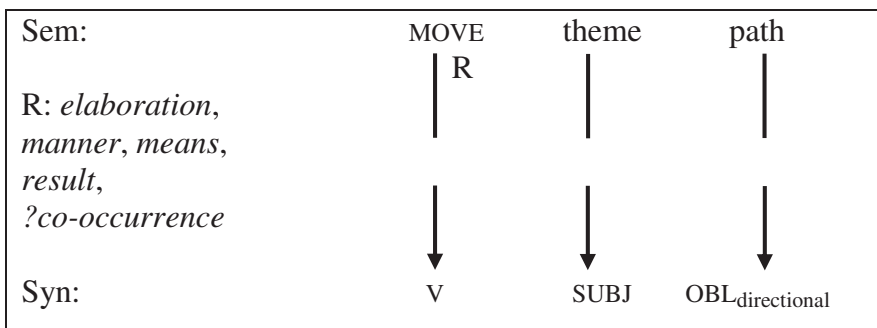

Figure 1: The English intransitive motion construction.

Goldberg (1995: 61–65, 78; 1997: 386–396) and also partly on Stefanowitsch (2013: 227):

As Figure 1 makes clear, the clause structure is crucially seen as the result of an interaction between verb semantics and constructional semantics, hence one central concern of Goldberg's model is to determine the range of possible semantic relationships that verbs can bear to constructions "in terms of a more general question, namely, what types of actions are most salient within the event types designated by simple clauses" (Goldberg 1997: 395). One of her best-known proposals in this regard is Goldberg (1997),[2] where she establishes the following hierarchy of possible relationships, arranged in order of decreasing prototypicality and frequency:

(12) *Hierarchy of Ways Verbs can be Related to Constructions* (based on Goldberg 1997: 396)
Elaboration >
Force-dynamic Relation (manner, means,[3] instrument, result, denial) >
Precondition, Co-occurring activity

Elaboration, termed *instance* in Goldberg's earlier discussion (1995: 64) of these issues, is "the most prototypical, the most common and the most universal case" of relationship (Goldberg 1997: 386). In elaboration the verb designates an elaboration of the meaning of the construction; thus, for instance, "if we assume that the caused-motion construction has roughly the meaning, 'X CAUSES Y to MOVE Z_{path}', then it is clear that *put* (e.g., *Laura put the book on the table*) lexically codes this meaning" (Goldberg 1997: 386).

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2 This analysis supersedes the earlier, more compact, analysis in Goldberg (1995: 61–65).
3 I have slightly modified Goldberg's force-dynamic hierarchy from its original reading of *means, instrument, result* and *denial* to the one above, which adds *manner*, as there is some inconsistency in the literature in the use of the labels *manner* and *means*. Goldberg (1995; 1997) and Goldberg and Jackendoff (2004) apply *means* to the kinds of processes coded by traditional verbs of manner of motion such as *walk, float* or *crawl*, because "most conflation patterns involving 'manner' verbs imply that the particular manner is the means of motion. For example [...] *The bottle rolled down the hill* [...] entails not only that 'the bottle moved down the hill *while* rolling' but also that 'the bottle moved down the hill *by* rolling'" (Goldberg 1995: 232, footnote 20). Manner, by contrast, is reserved by Goldberg for cases such as *I knitted my way to fame and fortune*, which, she argues, "involve only the *manner* of motion, not the *means* of motion" (Goldberg 1995: 62). But, on the other hand, authors such as Israel (1996) use those same labels in a way which is almost exactly opposite; i.e., means is applied to verbs like *furrow out* or *plough*; manner to the conventional manner of motion verbs. The present paper follows Israel's terminology, as this suits better the course of development of the IMC, as presented in Sections 5–6.

There are cases, however, "wherein the verb does not itself lexically designate the meaning associated with the construction" (ibid.: 387). Two examples of this adduced by Goldberg, each involving different subtypes of the IMC, are the following:

(13) *The bottle floated into the cave.*

(14) *The car screeched out of the driveway.*

In (13) the floating is the manner in which the bottle moved into the cave, and in (14) the screeching is caused by, or is the result of, the motion.[4] In other words, the verbs in these two examples do not simply designate an elaboration of the constructional meaning, and Goldberg proposes to account for the semantic relationships that the verbs bear to the constructions in such cases in terms of force dynamics (Talmy 1985b). Force dynamic relations are those relations that "involve causes, forces, counterforces and tendencies" (Goldberg 1997: 393), so that the following hypothesis is formulated:

(15) *Force Dynamic Relation Hypothesis:*
      The meaning designated by the verb and the meaning designated by the construction must be integrated via a (temporally contiguous) force-dynamic relationship.

This principle enables Goldberg to accommodate the above relationships, plus two others that will not be discussed further here, since they are not directly relevant to the present research, namely instrument (*Arthur wristed the ball over the net*) and denial (*Pat refused Chris a kiss*). Verbs, however, can be related to constructions in two further ways: precondition (*Dave baked Elena a cake*), which applies to verbs occurring in the ditransitive construction that designate a precondition of transfer (the preparation of the cake is the precondition for Dave's transferring the cake to Elena), and co-occurrence, which can be seen at work in (16)–(17):

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4 Goldberg and Jackendoff (2004: 541, 563) broaden the scope of the relation of result so as to include in it not only sound-emission verbs such as *screech* in (14), but also the small class of verbs of disappearance, as in *The witch vanished into the forest*. Throughout this article, however, the label result is employed in its restrictive, original sense, to refer solely to verbs of sound emission.

(16) *He was whistling his way along.*

(17) *?He whistled out of the room.*

Example (16) illustrates one of the subtypes of the *Way*-construction and (17) a subtype of the IMC which can be heard in some dialects but is judged unacceptable by most speakers of standard English, as variously noted by Levin and Rappaport Hovav (1991: 138), Goldberg (1997: 395) and Talmy (2000: II, 46).[5] Unlike examples (13)–(14) above, in the relationship of co-occurrence the verb designates a co-occurring activity that is not causally related to the action designated by the construction; as Talmy puts it (2000: II, 46), in this type of relation "the Co-event co-occurs with the main Motion event, and is an activity that the Figure of the Motion event additionally exhibits. But here, this activity does not in itself pertain to the concurrent Motion [...] and could just as readily take place by itself".

Goldberg concludes her account (1997: 396) of possible verb-construction relationships by pointing out that "the most prototypical case is that in which the verb codes an elaboration of the construction. That the verb's meaning and the construction's semantics be related force-dynamically is the next most prototypical possibility. Correspondingly less common are cases where the verb codes a precondition or a co-occurring activity", as in, respectively, *Dave baked Elena a cake* and *?He whistled out of the room*. These last possibilities appear to be construction-specific, with a fair amount of variation among speakers. In later sections of this article I will return to these various distinctions when considering the early history of the IMC.

3 Verbs of sound emission

The English verbs of sound emission constitute a relatively large class – the list in Levin (1993: 135) contains 119 types. Semantically, these verbs "all describe an event in which something or someone emits a sound: the core sense of the verb" (Levin et al. 1997: 27). Syntactically, these verbs are intransitive when expressing this core sense, with the sound emitter as subject. Many of them, however, have extended uses beyond this core, basic sense, and can be used as transitives, as in *The nurses clattered the teacups* (causative sound use)*, The girls groaned their*

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5 Note that Talmy refers to this type of relationship, or co-event, with the label *concomitance*; see Section 2.1 above.

envy (use with a reaction object) or *Richard rumbled a reply* (message object). More interestingly for the present purposes, some verbs of sound emission can also occur in various constructions encoding motion, as has already been discussed in the previous sections, where instances of their use in the IMC (cf. [1], [11a], [14]) and the *Way*-construction (cf. [4]) were adduced.

Despite the great syntactic and semantic similarities that exist between the IMC and the *Way*-construction, the use of sound-emission verbs in the IMC is subject to far greater constraints than in the *Way*-construction. The latter, as shown by Levin et al. (1997: 39–41) in a study based on the British National Corpus, is freely available in Present-day English with all sound-emission verbs, and can even be employed in the conflation pattern involving co-occurrence (e.g., *He was whistling his way along*) discussed in Section 2.2. The IMC, by contrast, can accommodate sound-emission verbs only when the sound emitted by the physical entity – whether this be human, animate or inanimate – "results from the motion" (Levin et al. 1997: 47) and is "a necessary concomitant of the motion" (Levin and Hovav 1995: 191). As Talmy (2000: II, 46) puts it, in the relation of result "the Co-event results from – that is, is caused by – the main Motion event, and would not otherwise occur". Hence sequences such as **John whistled out of the room* or **The frogs croaked to the pond* are unacceptable to many speakers of English, as already noted in the previous section, since John's whistling and the frogs' croaking are separate actions from their motion.

Before moving on in the following sections to address the historical development of sound-emission verbs in their extended use as verbs of motion, two further aspects of their behaviour in PDE merit attention. One relates to the proportion of sound-emission verbs occurring in the IMC, in comparison to verbs of other classes. To my knowledge, the only corpus-based analysis available to date in this regard is Rohde (2001), who devotes one chapter of her PhD dissertation to the Intransitive Motion Construction. Her study is based on the North American News Corpus (NAN), a database composed of texts from various newspapers (*Los Angeles Times, The Washington Post, The New York Times News Syndicate, Reuters News Service general and financial* and *The Wall Street Journal*) covering "from the early eighties to the early nineties" (Rohde 2001: 50). In total NAN consists of approximately 350 million words of text, so to set up a manageable data set Rohde selected "1358 instantiations of the IMC" (ibid.: 52) which constituted the basis for her analysis of the construction. Her findings show that the overwhelming majority of the verbs in these 1358 instantiations, namely 1266, "lexicalize MOTION" (ibid.: 244; see also her Appendix A, p. 355). The remaining 92 verbs included verbs of sound emission (*buzz, clatter, roar, rumble*), verbs of substance emission (*steam*), and aspectual verbs (*carry on, continue, proceed, come to rest, conclude, stop*), as in, for instance, *A few carried*

on toward Tanzania (ibid.: 247), which Rohde recognizes as a separate kind of relation. Rohde does not indicate exactly the number of tokens of sound-emission verbs in her data,[6] but it seems clear that their rate of occurrence in the IMC is low; however, this has likely to do with the composition of the NAN corpus. Sound verbs belong to what Slobin (1997: 459) has called the second tier of the motion vocabulary (i.e., the more expressive, but also less common verbs), and hence cannot be expected to occur very frequently in the kinds of texts making up Rohde's database.

Turning finally to the question of whether sound-emission verbs are found in expressions of directed motion in languages other than English, their use has been noted in satellite-framed languages of the Slavic family such as Slovene (possibly as a result of "contact with German", according to Filipović 2007: 77) and Serbo-Croatian (Verkerk 2013: 182–183, though Filipović 2007: 76–77 found "no proof of this use" in her extensive corpus data). It is also well attested in languages of the Germanic family (apart from English), for instance German (Levin and Hovav 1995: 202–203; Verkerk 2013: 213), Dutch (Verkerk 2013: 213) and Swedish (Olofsson 2014: 4–5; see also Verkerk 2013: 183). Spanish (see [10] above) and other verb-framed languages, by contrast, mostly seem to disallow such uses, as pointed out by Levin and Rappaport Hovav (1995: 203) and Narasimhan (2003: 130), among others.

4 Data sources and methodology

The open-endedness of the vocabulary, as opposed to the more or less finite systems in grammar or phonology, poses a problem for the identification of resources in English for describing processes of sound emission in past stages of the language. Technically, the ideal strategy would be to proceed entry by entry through historical dictionaries and dictionaries of Present-Day English. But as this is clearly not feasible, the heuristic strategy I followed was the same one I used in an earlier paper (Fanego 2012) where I examined the development of the English domain of manner of motion from Old English to the early twentieth century. It consisted of the following steps:

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6 On p. 245 Rohde mentions 15 occurrences, but verbs of substance emission (*steam*) seem to be included in that number too.

(a) Levin's list (1993: 235) of 119 sound-emission verbs was used as a point of departure.[7] I then proceeded to look up those verbs in dictionaries and thesauruses, so as to find synonyms and further candidates for inclusion in earlier stages of English. Specifically, I conducted searches using the main historical dictionaries, namely the *Oxford English Dictionary* (*OED*), the *Middle English Dictionary* (*MED*, Kurath et al. 1952–2001), Bosworth and Toller's *An Anglo-Saxon Dictionary* (*B&T*, 1898–1921), and the *Dictionary of Old English* (*DOE*, Cameron et al. 2016), all of which are available online, and also the *Historical Thesaurus of the Oxford English Dictionary* (Kay et al. 2009) and the *Thesaurus of Old English Online* (Edmonds et al. 2005).

(b) In a second step I checked which sound verbs in the updated list thus obtained were recorded in motion expressions in *B&T* and *DOE*, and in the quotation databases of the *OED* and the *MED*. *B&T* and *DOE* were employed as the primary sources of information on the Old English period. As regards the *OED* database, this is a large collection of over 2.4 million quotations which provides computerized lexical access to samples of the English language since late Old English times; it totals about 31 million words (assuming an average length of 13 words per citation – a very conservative estimate; for further details, see Hoffmann 2004: 25). The print *MED*, in turn, has been described as "the greatest achievement in medieval scholarship in America" (http://quod.lib.umich.edu/m/med/, title page); its 15,000 pages offer a comprehensive analysis of lexicon and usage for the period 1100–1500, based on a collection of over three million citation slips, the largest collection of its kind available. The electronic version of the *MED* preserves all the details of the print edition, but goes far beyond this, by converting its contents into an enormous searchable database.

(c) Lastly, the 67 sound verbs which were found to occur in motion expressions in the materials detailed in (a) and (b) above were searched in the Literature Collections of Chadwyck-Healey listed in the bibliographical references, and also in The Corpus of Late Modern English Texts, version 3.0 (CLMET3.0). CLMET3.0 is a collection of texts covering the period 1710–1920, divided into three 70-year subperiods. The texts making up the corpus comprise five

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7 Note, though, that not all of these verbs can be used for directed motion in PDE, as a result of the constraint, noted in Section 3 above, that the sound emitted must be one resulting from the motion, and not one emitted, for instance, via the vocal tract by an animate entity (see further Levin and Hovav 1995: 190–191).

Table 1: Genre division in CLMET3.0, per sub-period.

Genre	1710–1780	1780–1850	1850–1920	TOTAL
Narrative fiction	4,642,670	4,830,718	6,311,301	15,784,689
Narrative non-fiction	1,863,855	1,940,245	958,410	4,762,510
Drama	407,885	347,493	607,401	1,362,779
Letters	1,016,745	714,343	479,724	2,210,812
Treatise	1,114,521	1,692,992	1,782,124	4,589,637
Other	1,434,755	1,759,796	2,481,247	5,675,798
TOTAL	10,480,431	11,285,587	12,620,207	34,386,225

major genres, as indicated in Table 1, all written by British authors who were native speakers of English. In total, CLMET3.0 contains thirty-four million words of running text, of which 20,547,199 million correspond to narrative texts, fictional and non-fictional. Because of its size and composition, CLMET3.0 provides a solid basis for research on motion events, given the intimate connection between narration and frequency of motion descriptions (cf. Slobin 2004; Filipović 2007: 104–107).

5 The IMC in earlier stages of English

In an earlier paper (Fanego 2012) I examined developments in the encoding of motion events from Old English to the early twentieth century, with a focus on intransitive verbs of manner of motion. It was shown there that the English domain of manner has constantly been on the increase, with impressively large additions of innovated and borrowed verbs in each of the historical periods, as shown in Table 2.

Table 2: English intransitive verbs of translational manner of motion.
Number of verbs added per period (based on Fanego 2012).

Time period	Number of innovated manner verbs
< 1100	72
1100–1500	181
1500–1700	205
1700–1900	250

I interpreted these findings as lending support to the hypothesis, put forward by Slobin in a series of seminal papers (see Slobin 2004; 2006; among others), that speakers of satellite-framed languages such as English, which characteristically code motion by using manner verbs (see Section 2.1 above), will tend over time to further elaborate the domain of manner of motion in terms of degree of *granularity* and semantic specificity, with each new generation adding new verbs, increasingly more precise in nature, to the domain. Thus *walk* encodes a motion event in which one uses one's legs to move, whereas *saunter* refines this idea by making reference to the leisurely pace at which this motion event is executed (see further Tutton 2013 on the notion of granularity).

Beyond the above results, my research on the historical development of the English manner verb lexicon served to uncover a number of other details about the configuration of the domain of motion in earlier periods, although in the above mentioned article not all of these were discussed, or received only passing mention. Thus my data, supplemented with data from Huber (2013b; 2014) and Visser (1963–1973: §§173–175, 178–180), suggest that in earlier stages of English the range of verb-construction relationships available in the IMC was broader than at present, since it included one semantic relation (subsequence) which is no longer available today. This is reflected in Figure 2 (to be compared with Figure 1 in Section 2.2) and in the discussion that follows. Whenever possible, examples from OE are used to illustrate the various relations.
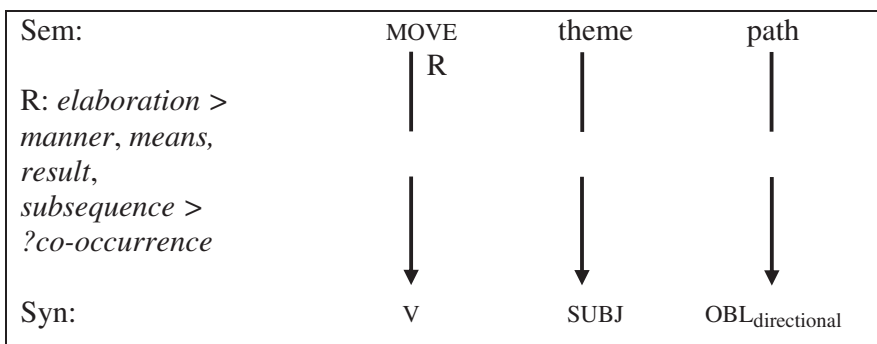
Sem:	MOVE	theme	path
	R		
R: *elaboration >* *manner*, *means*, *result*, *subsequence >* *?co-occurrence*	↓	↓	↓
Syn:	V	SUBJ	OBL$_{directional}$

Figure 2: The intransitive Motion Construction in earlier English.

(18) ELABORATION:
    As discussed in Section 2.2, in the relation of elaboration the verb simply

designates an elaboration of the meaning of the construction, that is, motion. OE verbs coding elaboration include, among many others, *faran* 'to go, travel', *gan(gan)* 'to go', *scriþan* 'to go, take one's way', *wendan* 'to go, proceed', etc.; see further Ogura (2002: 11–29) for additional motion verbs in this class:

ÆCHom I, 18 317.17: **ferde** *þa to sæ* '[he] went to the sea' (Ogura 2002: 19)

(19) MANNER OF MOTION:
Verbs of manner of motion do not simply designate an elaboration of the constructional meaning, but also the manner in which the entity moves. Consider for instance OE *ahealtian* 'to limp, crawl', *cleacian* 'to go nimbly, hurry', *creopan* 'to crawl', *drifan* 'to rush on', *fleotan* 'to swim', etc.; see Fanego (2012) for fuller listings in OE and later periods:

ÆCHom 5 214: *þæt wif [...]* **efste** *to ðære byrig and bodade ymbe Crist* 'the woman [...] **hurried** to the city and preached about Christ' (*DOE ef(e)stan* v. A.1.a)

(20) MEANS OF MOTION:
The verbs in this class convey the means by which a path is forged or created, as happens, for instance, with PDE *clear, cut, dig, fight* and *force out*, or with Old and Middle English predicates such as *afeohtan* 'to fight (one's way)', *berstan* 'to break away from', *brecan* 'to break into, take by storm', *ridden* 'to clear (a path, way)', *swincan* 'to toil, labour at/after, anything' and *winnan* 'to strive, contend, fight; win, make one's way'. E.g.:
a. Or 5 7.121.27: *þa gecwædon hie þæt [...] sume hie beæftan wereden & sume <þurh> ealle þa truman ut* **afuhten,** *gif hie mehten* 'then they said that [...] some of them would remain behind & some would **fight** [their way] out through all the troops, if they could' (*DOE afeohtan* v. 2; quoted from Huber 2014)
b. ChronC 868.6: *hi [...] micle fyrd gegaderedon [...] & on ða ceastre* **bræcon** 'they [...] gathered a great army and [...] **broke** into the city (i.e. took the city)' (*DOE brecan* v. 3.b)
c. Salm. Kmbl. 568: *Hwæt is ðæt wundor, ðæt geond ðás woruld fareþ [...],* **winneþ** *oft hider?* 'What is the wonder that travels around this world [...] often **makes** [its way] hither?' (*B&T winnan* v. A. III; quoted from Huber 2014)
d. c1400(?a1300) *KAlex.*(LdMisc 622) 2234: *He lep on his owen stede And wiȝth gan aboute* **rede** 'he leapt on his own steed and at once began to **clear** [a way for himself] around' (*MED ridden* 1.b; see also *OED rid* v.)

The means relation, which I did not cover in my earlier research (Fanego 2012), has been dealt with by Huber (2014). Examples such as those quoted above, though not very common in Old and Middle English,[8] testify to the fact that, as Huber notes, verbs not properly designating motion could nevertheless receive a motion reading in context, through their combination with a path satellite. Such uses are interesting, in the first place, as evident examples of *coercion*, the inferential typeshifting whereby "if a lexical item is incompatible with its syntactic context, the meaning of the lexical item conforms to the meaning of the structure in which it is embedded" (Michaelis 2003: 268). Secondly, because such examples have evident connections with one of the patterns that make up the *Way*-construction, namely the pattern that Israel (1996: 223) has quite appropriately labelled the *means thread*, as in *She dug her way out of prison*.

Israel's seminal study of the history of the *Way*-construction is based on data drawn from the *OED* database. It dates the earliest occurrences of the *Way*-construction, in any of its patterns, to the late Middle English period (Israel 1996: 221), and the first instances of the means thread specifically to "the end of the sixteenth century" (1996: 223); see also Traugott and Trousdale (2013: 78), who make a similar observation in their recent analysis of the *Way*-construction: "the 'means' thread arose by the mid seventeenth century with verbs like *cut* and *smooth*". But clear examples of the means thread can in fact be found well before that[9]:

(21) a. c1325(c1300) Glo.Chron.A (Clg A.11) 391: *Corineus [...] harde smot [...] &* **made is wey** *bi eiþer side, & percede þe route*. 'Corineus [...] struck hard [...] & made his way in every direction & pressed into the enemy ranks' (*MED* s. v. *percen* 3.a)

      b. 1513 G. Douglas tr. Virgil Æneid x. vii. 30: *With swerdis dynt behuffis ws, Throw amyddis our ennemys* **red our way**. '[It] behoves us by force of arms, [to] clear our way through among our enemies' (*OED redd* v.² 1.c. 'To clear a space, way, etc.')

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8 According to Huber (2014), verbs expressing means, subsequence (see [22]), and other non-motion meanings together make up seven per cent of the OE verb types used to express motion in her data.

9 OE instances with a pronoun in the dative case (instead of the genitive) and reflexive function seem to be direct precursors of the means thread; e.g., ÆCHom II, 22 196.203: *se gewæpnoda engel* **rymde him weg** *þurh þæt fyr. todælende ðone lig on emtwa* 'the armed angel cleared a way for himself [i.e., cleared his way] through the fire, dividing the flame in two' (*B&T ryman* v. II. 'To clear a way').

What this evidence reveals is that as early as Middle English both the IMC and the *Way*-construction could be used to express means of motion, and indeed were in competition. They occurred with verbs which were closely related semantically, and even with the same verbs, such as *rid(den)* 'to clear (a path, way)' in (20d) and its variant *redd* (21b). Interestingly, as shown by the PDE translations of (20a), (20c) and (20d), several of the IMC examples quoted above would now require a *way* object in order to be judged acceptable. This perhaps suggests that in this function the *Way*-construction has been expanding at the expense of the IMC, an issue which clearly deserves further investigation.

(22) SUBSEQUENCE:
    a. Ælfric, Saints' Lives XXXIII, 86: *þin fæder **sceal** mid me to mynstre* 'your father shall [go] with me to the monastery' (Visser 1963–1973: §178)
    b. Beowulf 318: *Ic to sæ **wille*** 'I wish [to go] to the sea' (Visser 1963–1973: §178)
    c. Nicod. 12–13: *Oncnaw nu ðæt hyt ðe lyt sceal framian ðæt ðu to **þohtest*** 'Know that it shall benefit you little, that you have determined [to come] to [us]' (*B&T þencan* VI.b.2. 'To think of something, to determine, intend')

Examples (a) and (b) illustrate a syntactic pattern where one of the English pre-modals (*shall, should, will, would, may, might, mote* 'be allowed, must', *must, can, mun* 'may, must', *dare*) appears to govern a directional phrase, so that, today, a covert infinitive of motion needs to be understood. This combination, frequent in Old, Middle and Early Modern English, as variously discussed by Visser (Visser 1963–1973: §§178–180), Mitchell (1985: I, §§1006–1008), Denison (1993: 305) and Kjellmer (2002), has been lost in English except in fossils like *murder/truth will out*, but is still current in other Germanic languages, such as Danish (Vikner 1988: 17), Dutch (van Dooren 2015), German (Kjellmer 2002: 342), Norwegian (Kjellmer 2002: 342) and Swedish (Olofsson 2014). In OE the pattern was also available with verbs of intention and determination such as *þencan* (see [22c]), and over the course of ME, as noted by Huber (2014), it was extended to a number of semantically related verbs which included *amen* (< OF *aesmer*) 'to plan, intend', *atlen* (< ON **ahtil-*) 'to intend, plan, to advance', *entenden* (< OF *entendre*) 'to intend', *listen* (OE *lystan*) 'to desire', *menen* (OE *mænan*) 'to intend, plan, mean', and *purposen* (OF *proposer*), among others.

    The loss of this construction in English, as against its retention in the other Germanic languages, has been linked to the profound syntactic changes, such as the emergence of a category of auxiliaries, that took place from ME onwards (see

specially van Dooren 2015; also Denison 1993: 335). In terms of the present article, the interesting aspect here is that the verbs mentioned above can all govern infinitival complements with *determined time reference*. This is the label coined by Noonan, in his seminal account (1985) of the semantics of complement types, to refer to the relation holding between modals and intention verbs, and the infinitives following them, as in for instance *I will go out* or *I intend to go out*. These infinitives have determined time reference in the sense that they "refer to a future world-state relative to the time reference" (Noonan 1985: 92) of *will, intend* and the like. It follows, therefore, that such constructional patterns, whether they have an overt infinitive or one that is implicit, as in (22) above, designate a possible event of motion, rather than one that has been experienced, and are hence non factual. But despite this lack of factuality, the meaning designated by the modal and intention verbs and the meaning designated by the construction as a whole can still be seen as "integrated via a temporally contiguous force-dynamic relationship", as is predicted by Goldberg's Force Dynamic Relation Hypothesis (1997: 393; see [15] above). The label I propose for the specific force-dynamic relation at work in such cases is *subsequence*; this is a relation that is not included in Goldberg's set of semantic relations (see Figure 1), but forms part of Talmy's catalogue of possible co-event conflation types. He defines subsequence as a relation in which "the Co-event takes place directly after the main Motion event, and is enabled by, is caused by, or is the purpose of that Motion event". This definition is, I think, consistent both with Talmy's examples, as in (23) below, and with OE usage as illustrated in (22).[10]

(23) Subsequence (including Consequence/Purpose) (based on Talmy 2000: I, 47)
      I'll stop down at your office
      [I will GO down to your office] WITH-THE-SUBSEQUENCE/PURPOSE-OF [I will
      stop at your office]

(24) CO-OCCURRENCE:
      In contrast to subsequence, the co-event in a co-occurrence relation is a
      separate action from the motion and is not causally related to it. Because
      causally related events, as already noted in Section 2, have been argued to

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10 An anonymous reviewer, in light of Goldberg (1995) and work by Berthele on Swiss German (2007), suggests that the semantic relation of *precondition* might be a better option to explain the uses in (22). However, as pointed out in Section 2.2, Goldberg's precondition is intended to account for ditransitives such as *Dave baked Elena a cake*. I fail to see sufficient semantic similarity between this usage and the motion pattern involving pre-modal verbs and intention verbs.

be cognitively central, Goldberg (1997: 394–396) considers co-occurrence less common and prototypical than force-dynamic relations, while Talmy adds that it "is not robustly represented in English" (2000: II, 46). My data support these judgements, as instances of the IMC involving co-occurrence are restricted to just two LModE instances, both involving the verb *trumpet*:

a. CLMET3.01 1735–1769 Walpole, Letters: *We are, however, entertained with pageants every day [...] He, and his wife went in great parade yesterday through the city and the dust to dine at Greenwich; they took water at the Tower, and* **trumpeting** *away to Grace Tosier's, "Like Cimon, triumph'd over land and wave" I don't know whether it was my Lord of Bristol or some of the Saddler's Company who had told him that this was the way "to steal the hearts of the people."*

b. CLMET3.03 1852 Chambers's Edinburgh Journal nos. 418–462: *Precisely as the half hour strikes, the tin horn of the omnibus sounds its shrill blast, and the vehicle is seen rattling round the corner, stopping one moment at No. 28, to take up Mr Johnson. On it comes, with a fresh blast, to where the commercial trio are waiting for it; out rushes Smith, wiping his mouth, and the 'bus', swallowing up the whole four, rumbles and* **trumpets** *on to take up Thompson, Jackson, and Richardson, who, cigars in mouth, are waiting at a distance of forty paces off.*

In (a) *trumpet* seems to be used with the meaning 'to move while blowing a trumpet or trumpets'; in (b) with the sense 'to move while sounding the horn'. Note, interestingly, that it is used in coordination with *rumble*, which codes result and shares with *trumpet* the directional particle *on*.

The last type of force-dynamic relationship to be considered here, among those represented in Figure 2 above, is *result*. This constitutes the chief concern of this paper and is therefore discussed separately in the next section.

6 Result

As pointed out in Section 5, the manner of motion lexicon has expanded enormously since Old English times, testifying to the continued interest of language users in that semantic field, as predicted by Slobin's diachronic model (2004) for the development of manner salience in satellite-framed languages. In light of this, it seems reasonable to assume that over the course of time other co-events of motion, such as the sounds which are a concomitant of

certain motion events, will also have tended to acquire greater prominence. The findings here, following an exhaustive examination of sound-emission verb usage in earlier periods, are presented below. Given the nature of my sources, which consist mainly of historical dictionaries (see Section 4), the analysis is primarily qualitative, except in Section 6.5, where quantitative evidence based on the Corpus of Late Modern English Texts (CLMET3.0) is provided.

6.1 Old English

The field of OE verbs of sound emission, insofar as it can be reconstructed from my sources, comprises items such as *abrastlian* 'to resound, clash', *berstan* 'to burst, make the noise of a bursting or breaking', *brastlian* [*OED brastle*] '(of thunder) to crash, resound; (of a falling tree) to make a crashing sound', *bræclian* 'to make a noise, resound', *breahtmian* '(of a bowstring twanging) to make a noise', *cearcian* [*OED chark* v.[1]] 'to make a harsh or grating sound', *ceorran* '(of a cart) to creak', **clatrian* 'to clatter' (implicit in *clatrung* 'rattling sound, clattering'), *cracian* 'to crack, to make a harsh noise', *dencgan* 'to knock, ding', *dynian* 'to din, resound', *grindan* '(of waves) to dash, crash; (of a ship) to grind against the sand', *gryllan* [*OED grill* v.[1]] 'to creak, grate', *grymettan* '(of abysses of the earth) to rumble, resound; (of surf) to roar, resound, crash', *gyllan* [*OED yell*] '(of an inanimate object) to make a strident, grating or crashing noise', *gyrran* [*OED yerr*] 'to make or utter a harsh sound', *hringan* 'to ring', *hropan* 'to shout, scream', *hrutan* [*OED rout* v.[2]] 'to make a noise, rumble, rattle', *hruxlian* [*OED rustle*] 'to make a noise', *hryscan* 'to make a creaking, grating, whirring noise', *hrysclan/hrystlan* 'to make a noise', *hwelan* '(of waves) to roar, bellow', *hweoðerian* '(of the sea) to roar, be tempestuous', *hwinan* [*OED whine*] 'to make a whistling, whizzing sound, as an arrow', *hwistlian* 'to make a hissing sound, whistle', *onhwelan* 'to resound', *pipian* 'to pipe, to play or blow on a pipe', *rarian* 'to roar, bellow', *singan* 'to resound, ring', *stunian* 'to crash, dash', *swegan* [*OED swey*] 'to move violently with noise, to roar, rush, crash', *swinsian* 'to make a pleasing sound', *swogan* [*OED sough* v.[1]] '(of wind, water, flame) to make a sound, move with noise, rush, roar', *tonian* 'to thunder' and *(ge)þunrian* 'to thunder', among others.[11] Several of these 36 verbs, however, are very infrequent

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11 This list does not include the many OE verbs denoting sounds emitted via the vocal tract by an animate entity, since such verbs, as noted earlier (cf. footnote 7), cannot be used for directed motion. Some OE examples of these would be *(a)hlowan* 'to low, bellow', *bellan* 'to bellow, roar', *beorcan* 'to bark', *granian* 'to groan, lament', *grymettan* '(of various animals) to roar, bellow, grunt, neigh', *gyllan* '(of various birds and animals) to screech, howl', *hleoðrian* 'to sing,

in the extant OE records, as is the case with *abrastlian, berstan* (in the relevant sense), *bræclian, breahtmian, cearcian, ceorran, clatrian, cracian, dencgan, grindan* (in the relevant sense), *gryllan, grymettan, gyllan, gyrran, hruxlian, hrysclan, hwelan, hweoðerian, hwinan, hwistlian, onhwelan, pipian, rarian* and *tonian*. By contrast, *dynian, swegan, swogan* and *(ge)þunrian* seem to have been relatively common, each with 10 occurrences or more in the relevant senses.

Turning now to the question of what kinds of motion patterns were available to OE sound verbs, these can readily be found in the type of motion clause involving a path verb (in the examples below, *sigan* 'to fall down', *cuman* 'to come, approach', *scriðan* 'to come, go, take one's way')[12] followed by a participial form specifying some further dimension of the event (in this case, the kind of sound accompanying the motion). As noted in Section 2.1, this is the type of motion expression preferred by verb-framed languages, though it is also attested in English at all of its historical stages, as I have shown in earlier research:

(25)   Verb-framed pattern:
a.   ÆCHom II, 39.1 293.170: *þæt hit **brastliende sah** to ðam halgan were. hetelice swiðe* 'so that it [the tree] fell crashing towards the holy man, very violently' (*DOE brastlian* v. 3. 'To make a crashing sound')
b.   Homl. Th. i. 566, 7: **Com** *seo sæ færlice **swegende*** 'the sea suddenly came roaring' (*B&T swegan* v. I. 'To roar, rush')
c.   Exon. 109 a: *Ne æt me **hrutende** hrisil **scriðeþ*** 'nor does the shuttle go whizzing through me' (*B&T hrutan* v. 'To make a noise')

The alternative pattern under examination here, which combines a sound verb with a directional phrase and represents, in principle, the typology characteristic of satellite-framed languages, is also attested in my data, but only sparsely. On the one hand, it has to be said that the majority of the sound verbs most frequently employed today in the IMC entered the English lexicon well after OE times, as will be discussed in Section 6.5; on the other, verbs such as *clatter* (< OE **clatrian*), *roar* (< OE *rarian*), *rustle* (perhaps < OE *hruxlian*), *sing* (< OE *singan*), *thunder* (< OE *þunrian*) and *whistle* (< OE *hwistlian*), which are now often found in the IMC, seem to have been used in OE merely as pure sound verbs. As a result,

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cry, resound', *hnægan* 'to neigh', *rarian* '(of human beings) to wail', *reotan* 'to lament, wail', *rynan* 'to roar', *singan* 'to sing', etc.

12 The Old and Middle English equivalents of the PDE deictic verbs *come* and *go* are here treated as path verbs, following Talmy (2000: II, 53, 56–57), who views deixis as one of the components of Path, "typically having only the two member notions 'toward the speaker' and 'in a direction other than toward the speaker'". For a similar view, see also Beavers et al. (2010: 350): "deictic path verbs such as *come* and *go* are no less path verbs than *enter* and *exit*".

clear cases of OE sound verbs occurring in the IMC are very few, and seem to be restricted to three examples with the verb *swegan* 'to move violently with noise, to roar, rush, crash', and to two examples with *grindan* 'to grind, scrape, rub'. The former verb, also recorded in the verb-framed pattern (cf. [25b] above), has not survived beyond Middle English (cf. *MED sweien* v.1; *OED swey* v.):

(26) Satellite-framed pattern:
  a. ÆLS (Alban) B1.3.20: *We wenað [...] þæt se eallwealdenda hælend wille gemiltsian þam manfullan sceaðan, gif he mid eallre heortan and incundre geomerunge clypað to ðam ælmihtigan Gode and his arfæstnysse bit, ærðan þe **þæt scearpe swurd swege to his hneccan*** 'We believe [...] that the all-ruling Saviour will show mercy to the wicked criminal, if he with all his heart and inward lamentation calls to the almighty God and asks for his mercifulness, before the sharp sword descends with a crash upon his neck'[13] (*DOE* Web Corpus)
  b. ÆCHom I, 37 499.76: *Clemens [...] cwæð. geopeniað þas eorþan on þissere stowe ... his geferan þa his hæse gefyldon. & þærrihte æt þam forman gedelfe **swegde ut ormæte wylspring** & mid micclum streame forð yrnende wæs* 'Clemens said: open the earth in this place [...] his companions then fulfilled his command & at once at the first act of digging an immense wellspring roared out and ran forth in a great stream' (*DOE* Web Corpus)
  c. GuthB 1332: *þæt se hærnflota æfter sundplegan sondlond gespearn, **grond wið greote*** 'so that the wave-floater (i.e., the ship) after its journey across the sea spurned the sandy land, ground against the gravel' (*DOE grindan* v. 4.b)[14]

One question related to the examples with *swegan* is whether the implication of motion that seems evident in them is to be attributed solely to the constructional semantics. I pointed out earlier (Section 2.1) that a verb like *rumble*, when not combined with a telic satellite, as in *The car rumbled in the parking lot*, cannot be conceived of as predicating a motion event, since the most natural interpretation of that sentence is that the car in question is simply making a noise of some kind. In the case of *swegan*, however, the motion component seems to be

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13 This translation of the *swege* clause is the one provided by *B&T* (s.v. *swegan* I).

14 The other example with *grindan* is also attested in poetry and contains the same formula; cf. Rid 32 3: *ic seah searo hweorfan, **grindan wið greote**, giellende faran* 'I saw this device (i.e. a ship) go about, grind against the gravel, advance making a strident sound'. As for the third example with *swegan*, not quoted above, it is a1150 *Vsp.D.Hom.*(Vsp D0.14)124/37 (*MED sweien* v. 1).

inherent in the semantics of the verb, as seems to be suggested by its phonology (the initial phonaesteme/sw-/being suggestive of movement; cf. Marchand 1969 [1960]: 398, 413), by the dictionary definitions (*B&T*: 'to roar, rush, crash'), and by examples like the following, where the verb is coordinated with a verb of manner of motion (*urnon*):

(27) Dóm. L. 3: Ps. Spl. 45, 3: *ic ana sæt innan bearwe [...] ðær ða wæterburnan* **swegdon and urnon** 'I sat alone in a wood [...] there the streams of water roared and ran' (*B&T swegan* v. I)

The nature of the evidence on OE and the relatively limited number of attestations does not always make it possible to exactly assess a given verb's meaning, beyond the fact that *swegan* clearly coded sound and may also have coded some kind of manner of motion information, such as velocity. Overall, the distinction between sound verbs and manner of motion verbs of rushing and velocity (Levin 1993: 271),[15] such as *rush* itself, is at times far from straightforward, reminding us of the well known fact that membership in a lexical class is a matter of degree, "resistant to strict delimitation" (Langacker 1987: 369–370).

6.2 Middle English

For the compilation of the ME sound verb inventory, I followed the methodological procedure detailed in Section 4, supplementing this with a definition search in the electronic *MED* for 44 Modern English sound verbs and two nouns (*noise* and *sound*). This yielded a very large number of sound verbs,[16] but only ten for which I could find clear instances of IMC use.

The verbs in question, listed here in their ME form (see also Table 3 below), are *clateren* 'to clatter' (1 occ. in the IMC; see [28]); *clingen* '?to clink, ?to rush in' (1 occ.; c1440 *Morte Arth. 1* [Thrn] 1865, s.v. *MED clingen* v.); *crashen* 'to move or go with crashing' (1 occ.; c1390 *Chart. Abbey HG* [Vrn] 360, s.v. *MED crashen* v. c); *grinden* 'to grind, to pierce or cut through' (2 occ.; a1375 *WPal* [KC 13] 1242 & 3443, s. v. *MED grinden* v. 1.d); *quethiren* 'to whiz, whir' (1 occ.; see [29]); *routen* 'to surge up, rumble, roar' (1 occ.; c1540[?a1400] *Wars Alex.* [Ashm 44] 1414, s.v.

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15 A verb closely related to *swegan*, semantically and etymologically, is *swogan* (OED *sough* v.[1]) 'to move with noise, rush, roar', for which, however, I have not been able to find any IMC occurrences.

16 For instance, the search based on the verb *buzz* yielded the ME sound verbs *bomben, bomblen, drumbil, hummen, hurren, sissen* and *summen*; the search for *rattle* yielded *clakken, clateren, ratelen, resen, roisen* and *rotelen*, and so on.

Table 3: Sound-emission verbs recorded in the IMC in Old, Middle and Early Modern English.

Verb type	Etymology	Date of first attestation as a sound verb	Date of first attestation in translational motion	Date of first attestation in the *Way*-construction
1. *Brustle* 'to go hastily with a rushing noise'	probably onomatopoeic	*c*1275	1638	–
2. *Buzz*	onomatopoeic	1398 (? implied in ME *bussing*)	1640	1917 (*OED*, AmE)
3. *Clatter*	onomatopoeic	OE (implied in *clatrung* n. 'clattering')	a1450(a1400)	–
4. *Cling* '?to clink, ?to rush in'	imitative	*c*1440	*c*1440(?a1400)	–
5. *Crash* 'to move or go with crashing'	blend of *crasen* 'to shatter' & *crushen*, or simply OF *crasir*	?*a*1400	*c*1390	1853 (Chadwyck, AmE); 1877 (*OED*, BrE)
6. *Grind* 'to rub on or against; to work into or through by means of pressure or friction' (*OED grind* v.[1] 9.a)	–	OE	OE	1805 (*OED*)
7. *Hurtle* 'to emit a sound of collision, said esp. of the clatter, rattle, or rustle of a shower of missiles; to dash, rush, esp. with noise'	diminutive and iterative of *hurt*, v. 'to strike with a shock'	*a*1425(*c*1380)	1590	1916 (*OED*)
8. *Plash* 'to move through water splashily'	apparently ultimately imitative	1565	1681	1842 (CLMET3.0)
9. *Quethir(en)* 'to whizz, whirr'	echoic	?	*c*1450(?a1400)	–
10. *Rattle*	apparently related to Dutch *ratelen* 'to chatter'	*c*1330	1697	–
11. *Rout* '(of the sea) to surge up'	*OED* (s.v. *rout* v.[1] & *rout* v.[2]): probably < a Germanic base ultimately of imitative origin	OE	*c*1540(?a1400)	–
12. *Rumble*	from MDu	*c*1375	*c*1450(*c*1380)	1836 (Chadwyck, AmE)

(*continued*)

Table 3: (*continued*)

Verb type	Etymology	Date of first attestation as a sound verb	Date of first attestation in translational motion	Date of first attestation in the *Way*-construction
13. *Rustle*	imitative	*a*1398	*a*1470	–
14. *Sing* 'to move with a singing sound'	–	OE	1633	1890 (*OED*)
15. *Spatter* 'to fall, descend, strike, in heavy drops or with a sound suggestive of these'	apparently a frequentative of the stem found in Dutch and Low German *spatten* 'to burst, spout'	*a*1586	1673	–
16. *Swalter* 'to slosh through water'	imitative	?	c1440(?a1400)	–
17. *Swey* (OE *swegan*) 'to move violently with noise, to roar, rush'	–	OE	OE	–
18. *Thump* 'to walk with heavy sounding steps; to move with thumps'	echoic	*a*1563	1604	1853 (*OED*)
19. *Thunder*	–	OE	1665	–
20. *Whirr* 'to move noisily, to move swiftly in some way with a continuous vibratory sound'	prob. ON; also perhaps imitative	c1450(?a1400)	c1450(?a1400)	–
21. *Whizz* 'to move swiftly with a sound as of a body rushing through the air'	echoic	*a*1547	1697	–

Note: The information on the *Way*-construction is based on the various British English sources listed in the references and on two databases of American English (Chadwyck-Healey's *American Drama 1714–1915*; Chadwyck-Healey's *Early American Fiction 1789–1875*).[17]

MED routen v. 4.b); *rumbelen* 'to rumble' (1 occ.; c1450[c1380] Chaucer *HF* [Benson-Robinson] 1026, s.v. *MED rumbelen* v.); *rustelen* 'to rustle' (1 occ.; see [30]); *swalteren* 'to wade, slosh through water' (1 occ.; see [31]), and *whirren* 'to move noisily, to move swiftly in some way with a continuous vibratory sound' (1 occ.; see [32]). Some of these examples follow here:

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17 These consist, respectively, of 1,500 dramatic works from the colonial period to the beginning of the twentieth century and 875 first editions of American novels and short stories.

(28) ?a1450(a1400) Siege Jerus.*(1)* (LdMisc 656) 569: *Castels* **clateren** *doun, cameles brosten,/Dromedaries to the deth drowen ful swythe;* 'Castles clatter down, camels burst [open],/dromedaries are driven very quickly to death;' (*MED clateren* v. 1.b. 'To break or fall with loud noise')

(29) c1450(?a1400) Wars Alex.(Ashm 44) 1414: *Sum braidis to þar bowis; bremely þai schut;/***Quethirs** *out quarels quikly be-twene.* 'Some reach for their bows; they shot fiercely;/quarrels whirr out quickly at times.' (*MED quethiren* v. 'To whiz, whir')

(30) (a1470) Malory Wks. (Win-C) 736/3: *He smote hym so harde upon the shylde that sir Palomydes and his whyght horse* **rosteled** *to the erthe.* 'He struck him so hard upon the shield that Sir Palomides and his white horse rustled to earth.' (*MED rustelen* v. b)

(31) c1440(?a1400) Morte Arth.(1) (Thrn) 3924: *He [...] Gers lawnche his botes appon a lawe watire,/Londis als a lyon [...]/Slippes in in the sloppes o slante to þe girdyll,/***Swalters** *vpe swyftly with his swerde drawen.* 'He [...] gives orders to launch his boats upon shallow water,/lands as a lion with his noble knights [...]/slips into the muddy waters aslant to the girdle,/ splashes up swiftly with his sword drawn.' (*MED swalteren* v. 'To wade, slosh, splash through water')

(32) c1450(?a1400) Wars Alex.(Ashm 44) 1556: *Now bowis furth þe bischop at þe burȝe ȝatis,/With prestis & with prelatis a pake out of nombre;/And all þe cite in sorte felowis him eftir,/***Quirris** *furth all in quite of qualite as aungels;* 'Now goes out the bishop at the city gates,/with priests & with prelates, a multitude;/and all the inhabitants of the city together follow him behind,/whirr forth all in white, like angels;' (*MED whirren* v. 'To move noisily')

Of the ten verbs recorded in my ME data in the result subschema, only *grinden* and *routen* (<OE *hrutan*) are already attested as sound verbs in OE (cf. [25c] and [26c] above), while *clateren* is implicit in the deverbal noun *clatrung* 'clattering', which is recorded once in OE. The rest seem to be ME innovations and, as is clear from the etymological information provided in Table 3, they are all echoic to varying degrees. This is true also of the vast majority of the sound verbs used in the IMC at later stages of English, as is discussed at greater length in Section 6.5.

A second notable issue arising from my data is that nine out of the 11 examples[18] of the IMC recorded in my sources occur in alliterative works. In other words, there seems to be an evident link between the use of sound + motion verbs and the demands of late Middle English alliterative poetry. The so-called Alliterative Revival, which between about 1350 and 1400 saw, mainly in the West Midlands, the re-emergence of the Old English alliterative tradition, had an important bearing on diction because the renewed alliterative line contained at least three alliterating words (to exemplify with [32] above: *quirris, quite* and *qualite*) and often employed verbs in alliterative positions, unlike the OE alliterative line, where nouns and adjectives always have primary stress, but finite verbs frequently do not and "are often excluded from the alliterative patterns" (Godden 1992: 501; see also Blake 1992: 523–524). The poetic diction of fourteenth century alliterative poetry thus put a heavy strain on the resources of the vocabulary, for it meant that an array of poetic verbs, often denoting dynamic processes of various kinds, had to be developed so that the alliteration in any line could be completed. To examine in detail the stylistic dimensions of motion expressions is beyond the scope of this paper, but it will surely repay further study to investigate the exact role played by genre conventions, rhetorical traditions and dialect provenance in the proliferation of new motion verbs in the course of the ME period.

6.3 Early Modern English

One of my hypotheses at the outset of this research was that the dramatic increase during EModE in the inventory of manner of motion verbs (see in this regard Table 2 above and Fanego 2012: 50–54) would be mirrored by a parallel increase in the number of sound verbs used to express motion during that same period; however, the modest figures in Table 3 do not confirm such a hypothesis. The evidence from the *OED* database and from the two Literature Collections I used for this period (Chadwyck-Healey's *Early English Prose Fiction 1500–1700* and *English Drama*)[19] indeed suggests that the result subschema was used in EModE more often than in the two previous periods, but, in any case, much less frequently than I had expected. Hence, I opted not to carry out a quantitative analysis for EModE, and to focus instead on Late Modern English. This decision has proved correct,

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18 The ME sound verbs occurring in the IMC are ten, but *grinden* is attested twice.
19 These databases comprise, respectively, 200 works written between 1500 and 1700 and 3,900 plays in verse and prose from the late 13th c. to the early 20th c.

for, as will be seen in Sections 6.4–5, it is only within Late Modern English that the result relation really takes hold in terms of both type and token frequency.

As shown in Table 3, the number of new sound verbs recorded in my EModE data to code translational motion amounts only to 10 (*brustle, buzz, hurtle, plash, rattle, sing, spatter, thump, thunder* and *whizz*); examples with two of these are offered below:

(33) 1681 S. Colville, Mock Poem. i. 81: *My boots [...] are better then gramashes For me who through the dubbs so* **plashes**. (*OED plash* v. 2.a. 'To move through water splashily')

(34) 1665 R. Head, The English Rogue, Part 1, 152: *and if alone, he would so* **thunder** *down the stairs, (fear giving wings to his feet) as if (Vulcan like) he had been sent by Jupiter head-long in a message.* (Chadwyck-Healey, *Early English Prose Fiction*; see *OED thunder* v. 2.a. 'To rush or fall with great noise and commotion')

6.4 Late Modern English

Table 4 provides information on the 46 sound-emission verbs newly recorded in the IMC between about 1700 and the initial decades of the twentieth century. Four of them (*groan, pipe, roar, whistle*) are already documented as sound verbs in OE, nine (*boom, clink, creak, hiss, hum, jingle, scream, squeal, tinkle*) in ME, and the remaining 33 are new formations. All of them are imitative to varying degrees, and many are related through the conventionalized, analogical links which are distinctive of sound symbolic word families (Miller 2014: 154, 172). Thus, the phonaesteme /skw-/, expressive of "discordant eruptive sound" (Marchand 1969 [1960]: 414), is shared by *squash* 'to move, walk with a splashing sound' (1671/ 1859),[20] *squeal* 'to move with a squeal' (*a*1400/1908), *squelch* 'to walk or tread heavily in water or wet ground' (1709/1837), and *squish* 'to proceed or make one's way with a squishing or splashing sound' (*a*1825/1961). In turn, the phonaesteme /-ʃ/, associated with voluminous sound and violent movements (Marchand 1969 [1960]: 400), can be observed in a larger group of verbs that comprises *clash* 'to attack with clashing or violence' (*c*1518/1875), *crash* 'to move or go with crashing' (*c*1390; see Table 3), *plash* 'to move through water splashily' (1565/1681; see Table 3), *slosh* 'to splash in mud or wet' (1848/1847), *slush* 'to splash in mud or wet' (1889), *splash* 'to move or fall with a splash or splashes' (1699/1843), *splosh* 'to move with a splash' (1890/1930), *squash* 'to move, walk with a splashing sound'

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20 In brackets, dates of first attestation as a sound verb and of first attestation in the IMC.

(1671/1859), *squish* 'to proceed or make one's way with a squishing or splashing sound' (*a*1825/1961), *swish* 'to move with a swish' (1756/1861), *swoosh* 'to move with a noise like that of the syllable *swoosh*' (1867), *whish* 'to move producing a soft sibilant sound' (1518/1860), and *whoosh* 'to move rapidly with a rushing sound' (1856/1917). Finally, colloquial formations involving reduplication (see Miller 2014: 159–160) and imitating the sound of an engine or machine seem to become popular by the beginning of the twentieth century: *chuff, chuff-chuff, chug, chug-chug, phut, phut-phut, put-put*, etc.

A few examples illustrating IMC use in this period follow here:

(35) 1917 'CONTACT' Airman's Outings 114: *Slowly [...] our train* **chugged** *north-ward*. (*OED chug* v. 'To move with a sound characteristic of a steam-engine or electric motor at work')

(36) CLMET3.02 1843 W. M. Thackeray, Vanity Fair: *the rain was pattering down, and the people as they* **clinked** *by in pattens, left long reflections on the shining stone*:

(37) CLMET3.03 1899 W. S. Churchill, The River War: *All other kinds of large beasts known to man inhabit these obscure retreats. The fierce rhinoceros* **crashes** *through the undergrowth.*

(38) 1939 I. T. Sanderson, Caribbean Treasure ix. 176: *During the half-hour that we had been* **'phut-phutting'** *up the Surinam to the polder, both Fred and I had learnt many things about our craft.* (*OED phut-phut* v. 'To move with intermittent muffled explosive sounds')

Tables 3 and 4 reflect the gradual expansion of the IMC and the result relation over time. They also provide information on the occurrence of the *Way*-construc-tion with the verbs under investigation here. These are attested consistently in the IMC significantly earlier than in the *Way*-construction, often by several centuries. Thus *buzz* is first found in the IMC in 1640, in the *Way*-construction in 1917; for *crash* the corresponding dates are *c*1390 and 1853; for *hurtle* 1590 and 1916; for *plash* 1681 and 1842; for *rumble c*1450 and 1836, etc. The availability of the *Way*-construction with sound-emission verbs thus appears to date from relatively recent times, a finding which is consistent with Israel's dating of this subtype of the *Way*-construction to "the end of the nineteenth century" (1996: 222), and which is also confirmed by the evidence from the Corpus of Late Modern English Texts discussed in Section 6.5.

Table 4: Sound-emission verbs newly recorded in the IMC in Late Modern British English.

Verb type	Etymology	Date of first attestation as a sound verb	Date of first attestation in translational motion	Date of first attestation in the *Way-*construction
1. *Boom* 'to hum, buzz'	imitative	*c*1440	1837 (CLMET3.0)	–
2. *Chuff, chuff-chuff* '(of an engine) to work with a regularly repeated sharp puffing sound'	onomatopoeic	1914	1929 (*OED*)	2000 (*OED*)
3. *Chug, chug-chug* 'to move with a sound characteristic of a steam-engine or electric motor at work'	onomatopoeic	1896	1904 (*OED*)	1923 (*OED*)
4. *Clamp* 'to tread heavily and clumsily' (chiefly dial.)	onomatopoeic	1808	1859 (*OED*)	–
5. *Clank* 'to move with a clanking sound'	fr. Dutch, or maybe of native origin, produced under the joint influence of *clink* and *clang*	1656	1794 (*OED*)	–
6. *Clash* 'to attack with clashing or violence' (*OED clash* v. 5.a)	app. onomatopoeic	*c*1518	1875 (*OED*)	–
7. *Clink* 'to move with a clinking sound'	*MED*: fr. MDu	*c*1386	1843 (CLMET3.0)	–
8. *Clomp* 'to walk as with clogs' (dial.)	fr. *clamp* n.[1] or *clump* n.	1829	1847 (*OED*)	–
9. *Clump* 'to walk or tread heavily and clumsily'	partly < *clump* n.; partly with onomatopoeic modifications	1665 (implied in *clumping*, ppl. adj)	*c*1825 (*OED*)	–
10. *Creak*	app. echoic	*a*1325	1834 (*OED*)	–
11. *Crunch* 'to advance or make one's way with crunching'	imitative	1632 (as *cranch*)	1848 (CLMET3.0)	1853 (*OED*, AmE); 1979 (*OED*, BrE)
12. *Fissle/fistle* 'to move with a light continued noise'	echoic	1721	1856 (*OED*)	–
13. *Fizz* 'to move with a fizzing sound'	echoic	1685	1852 (CLMET3.0)	–

(*continued*)

Table 4: (*continued*)

Verb type	Etymology	Date of first attestation as a sound verb	Date of first attestation in translational motion	Date of first attestation in the *Way*-construction
14. *Flump* 'to move heavily with a dull noise'	onomatopoeic	1790	1816 (*OED*)	–
15. *Groan*	–	OE	1781	2014 (*OED*)
16. *Hish/hiss/hizz* 'to make a hissing noise'	echoic	*a*1398 (under *MED hissen*)	1893 (*OED*)	–
17. *Hum*	echoic	*c*1420	1890 (CLMET3.0)	(not in the relevant sense)
18. *Jingle* 'to proceed or move with a jingling sound'	imitative	*c*1387–1395 (under *MED ginglen*)	1733 (*OED*)	(not in the relevant sense)
19. *Patter* 'to run with quick, light-sounding steps'	fr. *pat* v. 'to hit' (imitative) + -ER suffix (frequentative)	1611	1713 (*OED*)	–
20. *Phut/phut-phut* 'to move with a brief explosive sound'	echoic	1901	1939 (*OED*)	–
21. *Pipe* 'to whistle'	< OE *pipian*	OE	1848 (CLMET3.0)	(not in the relevant sense)
22. *Pit-a-pat* 'to go pit-a-pat'	fr. *pit-a-pat* adv. (imitative)	1728	1827 (*OED*)	–
23. *Putter* 'to move or travel while making the sound of an internal combustion engine'	imitative	1824	1937 (*OED*)	–
24. *Put-put* 'to move while making a put-put sound'	Imitative of the sound of an internal combustion engine	1905	1957 (*OED*)	–
25. *Roar* '(of a vehicle) to move at high speed making a loud prolonged sound'; in extended use, '(of a person or animal; of water, wind, etc.) to move rapidly'	< OE *rarian*	OE	1756–1766 (Chadwyck, BrE)	–

(*continued*)

Table 4: (*continued*)

Verb type	Etymology	Date of first attestation as a sound verb	Date of first attestation in translational motion	Date of first attestation in the *Way-* construction
26. *Scream* 'to travel swiftly with a screaming noise'	*MED*: prob. from ON	*c*1175 (*MED*)	1898 (CLMET3.0)	–
27. *Slosh* 'to splash in mud or wet'	fr. *slosh* n. 'slush, sludge', or imitative	1848 (under *OED slush* n.²)	1847 (*OED*)	–
28. *Slush* 'to go or walk through mud with a dull splashing sound'	partly fr. *slush* n.¹ and partly imitative	1807	1853 (*OED*)	1888 (*OED*)
29. *Splash* 'to move or fall with a splash or splashes'	alteration of *plash* v. (imitative)	1699	1842 (CLMET3.0)	1848 (*OED*, AmE); 1865 (CLMET3.0)
30. *Splodge* 'to trudge or plod splashily through mud or water'	imitative of the sound	?	1896 (*OED*)	–
31. *Splosh* 'to move with a splash'	fr. *splosh* n. (echoic)	1890	1930 (*OED*)	–
32. *Squash* 'to move, walk with a splashing sound'	fr. Old French *esquasser*; in some senses perhaps partly or mainly of imitative origin	1671	1859	–
33. *Squeal* 'to move with a squeal'	imitative	*a*1400(*c*1300) (*MED squelen* v.)	1908 (CLMET3.0)	–
34. *Squelch* 'to walk or tread heavily in water or wet ground'	imitative	1709	1837 (CLMET3.0)	–
35. *Squish* 'to proceed or make one's way with a squishing or splashing sound'	imitative	*a*1825	1961 (*OED*)	1952 (*OED*, AmE)
36. *Swish* 'to move with a swish'	imitative	1756	1861 (*OED*)	–
37. *Swoosh* 'to move with a noise like that of the syllable *swoosh*'	imitative	?	1867 (*OED*)	–
38. *Thud* 'to fall or impinge with a thud'	verb and noun may be purely echoic, imitating the sound which they express or imply	1513	1893 (*OED*)	–

(*continued*)

Table 4: (*continued*)

Verb type	Etymology	Date of first attestation as a sound verb	Date of first attestation in translational motion	Date of first attestation in the *Way-*construction
39. *Tinkle* 'to flow or move with a tinkling sound'	prob. frequentative of *tink* v.[1]	*c*1450(?*a*1400) (*MED*)	1751 (Chadwyck, BrE)	1862 (Chadwyck, AmE)
40. *Twang* '(of an arrow) to leave the bow-string with a twang'	echoic	1567	1778 (Chadwyck, BrE)	–
41. *Whish* 'to move producing a soft sibilant sound'	imitative	1518 (implicit)	1860 (*OED*)	–
42. *Whistle* 'to produce a whistling sound by rapid movement'	–	since OE	1720 (Chadwyck, BrE)	(not in the relevant sense)
43. *Whoosh* 'to move rapidly with a rushing sound'	imitative	1856	1917	–
44. *Whump* 'to move with a whump'	echoic (compare *bump, thump*)	1897	1981	–
45. *Zip* 'to move briskly or with speed'	fr. *zip* n.[1] 'a light sharp sound'	1852	1897	–
46. *Zoom* 'to travel or move (as if) with a zooming sound'	echoic	1892	1924	–

Note: The information on the *Way-*construction is based on the *OED*, CLMET3.0, and four Chadwyck-Healey's databases: *American Drama 1714–1915, Early American Fiction 1789–1875, Eighteenth-century Fiction 1700–1780* (BrE), *Nineteenth-century Fiction* (BrE). The observation 'not in the relevant sense' is meant to cover cases such as *He whistled his way to the main front-door* (1866 Blackmore, *Cradock Nowell* xvi; *OED Whistle* v. 6.c), where the relation between verb and construction is one of co-occurrence, rather than result.

By contrast, those aspects for which Tables 3 and 4 prove to be of little help are, first, the exact frequency of the IMC with each individual sound verb; second, the question of how this frequency compares with the frequency of the alternative pattern with verb framing and a path verb (i.e., V_{PATH} Present Participle$_{SOUND}$) illustrated in (39)–(40) below.[21] In order to look more closely at these variables, I

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21 This pattern has been briefly discussed by Goldberg (2006: 50–52) under the label VVingPP Construction, but clearly deserves further investigation.

conducted a study based on The Corpus of Late Modern English Texts, version 3.0 (CLMET3.0); as noted in Section 4 above, CLMET3.0 consists of a large collection of British English texts totalling thirty-four million words and covering the period 1710–1920. The results obtained after searching the corpus for the 67 sound verbs listed in Tables 3 and 4 are discussed in the next section.

(39) CLMET3.01 1776 S. J. Pratt, The Pupil of Pleasure: *Just as I got to the door, a party of mighty pretty women, and my wife amongst the rest, (for she already knew every body,)* **came rustling** *into the shop,*

(40) CLMET3.03 1889 Walter Cassels, A Reply to Dr Lightfoot's Essays: *At this very time an earthquake [...] shook the cities of the East [...]. The city [Antioch] shook through all its streets; houses, palaces, theatres, temples* **fell crashing** *down.*

6.5 The sound verb inventory and Late Modern English usage

The evidence presented in the previous sections, and specially the information in Tables 3 and 4, reveal important differences between the composition of the English sound verb lexicon on the one hand, and the composition of the manner of motion lexicon on the other. As I showed in earlier research (Fanego 2012), English manner of motion verbs have been formed in two main ways: a) by extensive borrowing from the various satellite-framed languages which came in contact with English in medieval times, namely Old Norse, Middle Dutch, Middle Low German, and Old French[22]; and b) by zero derivation from existing nouns, chiefly from Early Modern English onwards.[23] The English sound verb lexicon, by contrast, consists almost in its entirety of imitative formations which, in many cases, were added to the language only very recently, as is clear from Tables 3 and 4. A large number of sound verbs are indeed attested in Old and Middle English (see Sections 6.1–2), but it is striking how many of the sound verbs most commonly used today date back to late Middle English or later. In connection with this, we may note here Jespersen's view, largely endorsed by Marchand (1969 [1960]: 439) and Miller (2014: 155), that "in all languages the

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22 Like Latin, its parent language, Old French was predominantly satellite framed, though it later underwent a typological shift in the direction of verb-framed languages; see further Kopecka (2006) and Fanego (2012: 33, 49).

23 A few examples: *Arrow* 'to move swiftly through space, like an arrow', *barge* 'to journey by barge', *inch* 'to move by inches or small degrees', *lavolta* 'to dance a lavolta', *somersault* 'to make or turn a somersault', etc.

creation and use of echoic and symbolic words seems to have been on the increase in historical times" (1922: 411; emphasis mine). Witness in particular Jespersen's reply to de Saussure's maxim (LG 104) that the linguistic sign is arbitrary and unmotivated:

> Linguistic writers [...] often assume that sound symbolism, if existing at all, must date back to the earliest times, and therefore can have no reality nowadays. [...] Though some echo words may be very old, the great majority are not; at any rate, in looking up the earliest ascertained date of a goodly number of such words in the *NED*, I have been struck by the fact of so many of them being quite recent, not more than a few centuries old, and some not even that. To some extent their recent appearance in writing may be ascribed to the general character of the old literature as contrasted with our modern literature, which is less conventional [...] and more true to the spoken language of every day. [...] people speak in a more vivid and fresh fashion than their ancestors. (Jespersen 1922: 409–411).

With all this in mind, we can now turn to the evidence from CLMET3.0, as set out in Tables 5 and 6. Table 5 gives an overview of the frequency of occurrence in both the IMC and the *Way*-construction of the 34 sound-emission verbs

Table 5: Sound-emission verbs recorded in the IMC and the Way-construction in CLMET3.0.

Verb type	1710–1780 (10,480,431 words)	1780–1850 (11,285,587 words)	1850–1920 (12,620,207 words)	Occurrence in the *Way*-construction
1. *Boom*	–	3 occ.	6 occ.	–
2. *Buzz*	–	–	2 occ.	–
3. *Clank*	–	–	3 occ.	–
4. *Clatter*	1 occ.	4 occ.	14 occ.	–
5. *Clink*	–	1 occ.	1 occ.	–
6. *Clomp*	–	1 occ.	–	–
7. *Crash*	–	2 occ.	29 occ.	–
8. *Creak*	–	4 occ.	4 occ.	–
9. *Crunch*	–	1 occ.	–	–
10. *Fizz*	–	–	1 occ.	–
11. *Hiss*	–	–	1 occ.	–
12. *Hum*	–	–	1 occ.	–
13. *Hurtle*	–	–	1 occ.	–
14. *Jingle*	1 occ.	4 occ.	–	–
15. *Patter*	–	3 occ.	11 occ.	–
16. *Pipe*	–	1 occ.	–	–
17. *Plash*	–	2 occ.	1 occ.	1 occ. (date: 1842)
18. *Rattle*	3 occ.	19 occ.	34 occ.	–
19. *Roar*	–	1 occ.	15 occ.	–
20. *Rumble*	–	8 occ.	14 occ.	–
21. *Rustle*	1 occ.	7 occ.	8 occ.	–

(continued)

Table 5: (*continued*)

Verb type	1710–1780 (10,480,431 words)	1780–1850 (11,285,587 words)	1850–1920 (12,620,207 words)	Occurrence in the *Way-*construction
22. *Scream*	–	–	2 occ.	–
23. *Sing**	–	1 occ.	3 occ.	–
24. *Spatter*	–	–	2 occ.	–
25. *Splash*	–	2 occ.	19 occ.	1 occ. (date: 1865)
26. *Squeal*	–	–	1 occ.	–
27. *Squelch*	–	1 occ.	–	–
28. *Swish*	–	–	3 occ.	–
29. *Thump*	–	–	1 occ.	–
30. *Thunder*	1 occ.	7 occ.	9 occ.	–
31. *Tinkle*	–	1 occ.	3 occ.	–
32. *Whirr*	–	1 occ.	3 occ.	–
33. *Whistle*	5 occ.	9 occ.	10 occ.	–
34. *Whizz*	–	5 occ.	12 occ.	–
TOTAL	**12 occ.**	**87 occ.**	**214 occ.**	**2 occ.**

*For the high frequency verb *SING* the search was restricted to the forms *sings* and *sang*.

Table 6: Sound-emission verbs recorded in the IMC five times or more, based on CLMET3.0.

Verb type	1710–1780 (10,480,431 words)	1780–1850 (11,285,587 words)	1850–1920 (12,620,207 words)
Boom (c1440)	-/-	3/1	6/1
Clatter (OE)	1/-	4/3	14/7
Crash (ME)	-/-	2/5	29/11
Patter (1611)	-/-	3/2	11/1
Rattle (c1330)	3/-	19/8	34/4
Roar (OE)	-/-	1/4	15/2
Rumble (c1375)	-/-	8/1	14/1
Rustle (a1398)	1/3	7/1	8/3
Splash (1699)	-/-	2/1	19/3
Thunder (OE)	1/1	7/4	9/6
Whistle (OE)	5/1	9/1	10/3
Whizz (a1547)	-/-	5/3	12/-

Notes: 1. Numbers to the right of the bar represent occurrences in the alternative verb-framed pattern [V_{PATH} Present Participle$_{SOUND}$]. 2. In brackets, dates of first attestation as sound verbs.

attested in these two patterns. As can be seen, there are just two instances in CLMET3.0 of the *Way*-construction coding a relation of result; one was cited as (4) at the beginning of this article; the other is (41):

(41)   CLMET3.02 1842 G. Borrow, *The Bible in Spain*: The steamer [...] **plashed its way forward**, stopped, and I was soon on board.

Table 6 focuses specifically on the verbs recorded in the IMC five times or more, and adds information on their use in the alternative pattern with verb framing (i.e., V_{PATH} Present Participle$_{SOUND}$) illustrated in (39)–(40) above.

From these tables it is clear that by the late eighteenth century the result subschema of the IMC was extremely uncommon: there are only 12 occurrences (normalised frequency per 100,000 words: 0.11) in subperiod 1 of CLMET3.0. But from 1780 onwards the use of sound emission verbs in the IMC increases noticeably, from 87 tokens in subperiod 2 (normalised frequency: 0.77) to 214 in subperiod 3 (normalised frequency: 1.69). This increase, however, is largely a reflection of the fact that over the Late Modern period sound verbs become vastly more common in *all* their uses, as is clear from Table 7, which gives the

Table 7: Frequencies (all uses) of 12 high-frequency sound verbs, based on CLMET3.0.

Verb type	1710–1780 (10,480,431 words)	1780–1850 (11,285,587 words)	1850–1920 (12,620,207 words)
Boom (c1440)	0	18 (0.15)	58 (0.45)
Clatter (OE)	7 (0.06)	27 (0.23)	41 (0.32)
*Crash** (ME)	1 (0.0)	7 (0.06)	33 (0.26)
Patter (1611)	1 (0.0)	21 (0.18)	32 (0.25)
*Rattle** (c1330)	10 (0.09)	50 (0.44)	90 (0.71)
*Roar** (OE)	37 (0.37)	118 (1.04)	147 (1.16)
Rumble (c1375)	7 (0.06)	37 (0.32)	44 (0.34)
Rustle (a1398)	15 (0.14)	68 (0.6)	115 (0.91)
Splash (1699)	4 (0.03)	33 (0.29)	113 (0.89)
*Thunder** (OE)	31 (0.29)	29 (0.25)	59 (0.46)
*Whistle** (OE)	14 (0.13)	38 (0.33)	94 (0.74)
Whizz (a1547)	1 (0.0)	16 (0.14)	22 (0.17)

Notes: 1. In brackets: frequencies normalised per 100,000 words. 2. For the five very common verbs marked with an asterisk the search was restricted to only the past tense forms (i.e., *crashed, rattled, roared, thundered, whistled*). This is in accordance with the procedure employed in other corpus-based analyses of motion verb usage (e.g., Filipović 2007: 11–12), and is justified by the fact that the simple past is the typical one used in descriptions of experienced events.

number of occurrences in CLMET3.0 of the 12 most common sound verbs (i.e., those also listed in Table 6). These findings thus lend support to Jespersen's above mentioned hypothesis: over the Modern English period there seems to have been an upsurge of productivity not only as regards the creation of new echoic verbs but also, crucially, regarding their frequency of use. And this trend has naturally had consequences also at the syntactic level, quite obviously for the construction which is the concern of this paper, but also, most likely, for various other constructions in the language, including the *Way*-construction.

I showed in the preceding sections that English has apparently had the potential to code a relation of result between verb and construction since Old English. For a long time, however, that potential appears to have been used sparingly, except when there existed powerful reasons to the contrary; one such reason seems to have been, for instance, the need to meet the prosodic demands of the Middle English alliterative line which I discussed in Section 6.2. Eventually, the rise during the Late Modern period in the number and frequency of sound verbs gave speakers an opportunity to easily extend the conceptual range of the Intransitive Motion Construction, from primarily coding either elaboration or manner of motion to paying increasing attention to other highly specific details of motion, such as the sound which is a concomitant of certain motion events. This extension of the pattern, from manner of motion to the sound resulting from it, is fully consistent with Slobin's (2004) predictions, briefly expounded in Section 5 above, on the tendency for satellite-framed languages to evolve towards a greater level of specificity and detail in the description of motion.

One final aspect worth mentioning here relates to the information presented in Table 8. As can be seen there, the expansion along the chronological dimension of the satellite-framed pattern [V_{SOUND} DIR] takes place at the expense of the alternative pattern with verb framing [V_{PATH} Present Participle$_{SOUND}$], illustrated

Table 8: Relative percentages of the satellite-framed and verb-framed patterns with all sound-emission verbs attested in CLMET3.0.

Constructional pattern	1710–1780 (10,480,431 words)	1780–1850 (11,285,587 words)	1850–1920 (12,620,207 words)
Satellite-framed	12 (63.2%)	87 (66.41%)	214 (82.31%)
Verb-framed	7 (36.8%)	44 (33.59%)	46 (17.69%)
TOTAL	19	131	260

Notes: 1. Normalised frequencies per 100,000 words of the satellite-framed pattern: 0.11 (subperiod 1), 0.77 (subperiod 2), 1.69 (subperiod 3). 2. For subperiods 2 and 3 the Chi-square statistic is 12.4211; the P value is 0.000425. The distribution is significant at p < 0.01.

in (39)-(40) above. In subperiod 2 (1780–1850) of CLMET3.0, when the sounds accompanying the motion begin to receive much more attention than was previously the case, they are expressed preferentially by means of the satellite-framed pattern (87 tokens, or 66.41 per cent), but verb framing (44 tokens, or 33.59 %) is also quite common. By subperiod 3 (1850–1920), however, the balance is clearly tipped in favor of the satellite-framed pattern – 214 tokens (or 82.31 per cent), as opposed to only 46 tokens (or 17.69 per cent) for the verb-framed pattern. These differences in distribution, as shown by the application of the chi-square test, are significant at the $p < 0.01$ level; they testify, as I see it, to the entrenchment and conventionalization of the result subschema. The relative proportions in Present-Day English of $[V_{SOUND}$ DIR$]$ and $[V_{PATH}$ Present Participle$_{SOUND}]$ remain to be determined by future research, as well as the semantic and syntactic variables that control the choice between them.

7 Conclusions and prospects for future research

This paper continues an earlier analysis (Fanego 2012) in which I examined the encoding of manner of motion from Old English times to the first quarter of the twentieth century, and showed that the language has continued to acquire new manner verbs, a finding which I interpreted as lending support to Slobin's cognitive model (2004) for the development of manner salience in satellite-framed languages.

The present study, which is broader in scope, is concerned with the history of the Intransitive Motion Construction as a whole, and has tried to provide answers to a number of research questions that were formulated in the introductory section and which are repeated here for convenience:

(a) what was the semantics of the IMC in earlier stages of English? In other words, what kinds of semantic relations could hold between the verb and the construction?
(b) what has been the course of development, since Old English times, of the subschema of the IMC where V is a verb of sound emission?
(c) how has the inventory of English sound verbs evolved?
(d) how has the IMC interacted with the *Way*-construction?

Question (a) was addressed in Section 5. It was shown there that in earlier English the range of verb-construction relationships available in the IMC was larger than at present, comprising not solely relations of elaboration (*I went to the park*), manner (*She walked in*), means (OE *Sume þurh ealle þa truman ut* **afuhten** 'some would fight [their way] out through all the troops') and result

(*The car screeched out of the driveway*), but also subsequence (OE *Ic to sæ **wille*** 'I wish [to go] to the sea'). A sixth relation, co-occurrence (?*The frog croaked to the pond* 'the frog moved to the pond while croaking'), where the verb denotes a co-event not causally related to the main motion event expressed by the construction, is very rarely attested, either in PDE or in earlier stages. Beyond this, the history of the IMC provides a nice example of the fact, well known from recent work on constructional change and constructionalization (e.g., Hilpert 2013; Traugott and Trousdale 2013; Colleman 2015), that constructions can change over time, and can be "altered in terms of their form, their function, any aspect of their frequency, their distribution in the linguistic community, or any combination of these" (Hilpert 2013: 16). Thus, some of the IMC subschemas (most notably those coding manner of motion and the sound resulting from the motion) have greatly increased in frequency over the course of time, for the reasons expounded in Sections 5 and 6.5, while others, such as the subsequence subschema, went out of use at some point during the Modern English period, presumably as a result of syntactic developments taking place elsewhere in the grammar, such as the emergence of a category of auxiliaries.

Questions (b) and (c) were answered in Section 6. This section, which constitutes the core of the research, showed that occasional examples of the result subschema can already be found in Old and Middle English (Sections 6.1–2), though the evidence in both periods is limited. The ME data, however, served to disclose the connection between the use of sound verbs in motion expressions and the alliterative poetry of the late fourteenth century. Section 6 also looked at verb usage in Early and Late Modern English, and showed that the expansion in frequency of the result subschema takes place within the Late Modern English period, and is tied to the addition of many new sound verbs to the lexicon, and to the enormous increase in their frequency of use. As we know from usage-based theory (Bybee 2010; 2013), speakers may reference a particular lexical item or items that have been used in a construction (e.g., *clatter, rumble, rustle*, found in the IMC already in ME), and the list of such items is the basis for further extensions of the construction to other related items, in a process of item-based analogy.

Turning to the fourth and final question, this was briefly explored in Section 5, and again in Sections 6.4 and 6.5. Section 5 showed that the so-called means thread of the *Way*-construction, which conveys the means by which a path is forged or created (e.g., *She dug her way out of prison*), emerged much earlier than is usually assumed in the literature (Israel 1996: 223; Traugott and Trousdale 2013: 78). For the expression of means of motion the *Way*-construction and the IMC seem to have been closely intertwined since the very beginning: both are attested in Middle English with verbs closely related

semantically, and even with the very same verbs. The extent to which the *Way*-construction has subsequently encroached on IMC territory is an issue that deserves further investigation, as it could not be determined on the basis of the sources used in this paper. With respect to sound-emission verbs and the result subschema, the data in Sections 6.4 and 6.5 revealed that interaction between the IMC and the *Way*-construction happens chiefly after the period investigated here: in CLMET3.0 (see Table 5) the IMC, with a total of 313 tokens, is by far the preferred pattern to code the relation of result. The use of the *Way*-construction for this purpose is marginal, as the occurrence of just two cases in CLMET3.0 illustrates. This situation, however, seems to have changed in late twentieth-century usage, to judge from a preliminary corpus-based analysis which I recently conducted. This analysis, based on the Corpus of Historical American English (1810–2009) compiled by Mark Davies at Brigham Young University, suggests that a long chain of analogical extensions has now led to an increase in the use of the *Way*-construction with sound-emission verbs, at the expense of the IMC. The exact details of this process of expansion, however, lie beyond the scope of this paper and must be left for future research.

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