

The establishment of quantifier constructions for size nouns

A diachronic case study of *heap(s)* and *lot(s)*

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Based on exhaustive diachronic corpus data, this paper determines the relative chronology in which the size nouns *heap(s)* and *lot(s)* have developed quantifier uses within NP of NP-syntagms, as in *heaps/a lot of people*. Using a constructional approach, it is claimed that size nouns occur in three distinct constructions or form–meaning pairings identified on the basis of systematic syntactic, semantico-pragmatic and collocational features. I argue that in order to establish which size noun was first to develop a quantifier use, we have to analyse diachronic data sets in terms of three constructions, viz. lexical head, partitive and quantifier constructions. In doing so, I will argue against the claim that *heap* developed its quantifier use first, around 1300, while *lot* developed one only around 1800. I will show that *heap* and *lot(s)* appear in an early partitive construction, c1300 and c1200, respectively, in which they are head nouns and have a collective sense. The quantifier construction in which *heap(s)* and *lot(s)* have modifier status and assess quantity similar to canonical quantifier *many/much* appears around the same time for both, viz. c1780.

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1. Introduction

In Brems (2010 and 2011) it was argued that, synchronically, English size noun expressions such as *bunch*, *heap(s)*, *pile(s)* and *load(s)* can realise different functions within binominal syntagms of the form “(determiner) (modifier) + size noun + *of* + (determiner) (modifier) NOUN2”. The synchronic properties of these patterns were described within an eclectic constructional framework of the English noun phrase, combining a dependency-based, functional-cognitive framework

(Langacker 1991) and grammaticalisation research with essential insights from usage-based construction grammar (cf. Goldberg 2006; Trousdale 2010). This eclectic constructional approach allows us to distinguish three main patterns for size nouns, viz. (i) lexical head, (ii) partitive and (iii) quantifier. Each type of use combines a particular syntagmatic dependency structure with a semantico-pragmatic meaning and a systematic preference for specific collocational patterns. Because of these distinct form–meaning pairings, they have been referred to as constructions in Brems (2011).¹ Examples of each of these constructions with *lot(s)* are (1) to (3), with functional glosses for each:

- (1) Where a powerful Social Democratic Party emerged, **the lot of the working man** was improving, not getting worse as Marx had predicted
‘the fate of the working man’
(CWO-brbooks)²
- (2) The group said **the two lots of wine** were immediately isolated
‘two separate units or sets of wine bottles’
(CWO-SA newspaper)
- (3) There has been **lots of publicity** over the years about how good it is for you
— and it saves on cooking bills
‘much publicity’
(CWO-brbooks)

The earliest lexical sense of *lot(s)* refers to objects that were used in decision making (cf. *Oxford English Dictionary* [OED], sense 1.a). This quickly gave rise to a more abstract meaning referring to ‘what falls to someone by fate or lot’ (OED, 1.c.). The earliest meaning is no longer productive in English except in such fixed phrases as *cast/draw lots*, but its more abstract sense is still attested, as illustrated by example (1). It can be noted here that lexical head noun constructions with *lot(s)* did not occur in my synchronic data sample (see Section 2), but were elicited using targeted queries.

In Brems (2003), a grammaticalisation cline was drawn representing the synchronic percentages of quantifier uses per size noun. *Heap* and *heaps* synchronically appear in quantifier constructions in 34 per cent and 67 per cent of the data, respectively, while *lot* and *lots* both tend towards 100 per cent. On the basis of this synchronic cline, Brems (2003) hypothesised that the model for the development of a quantifier construction for size nouns is (a) *lot(s) of*, which are synchronically the most generally and frequently used size noun quantifiers. Traugott (2008) pointed out that Brems’ (2003) diachronic claim might be based on unwarranted extrapolation of synchronic frequencies. Synchrony does not necessarily reflect diachrony, but synchronic variation does often reflect diachronic change (cf. Lehmann 2004).

In her diachronic study of a set of singular size nouns, Traugott (2008:8) argues that “[a] *heap of* is the oldest in the semantic quantifier use, and a *lot of* the most recent”, as the latter developed a quantifier use only around 1800, while *heap* already had a quantifier use around 1350. Traugott is right to be wary of diachronic claims made on the basis of synchronic data. However, in making claims about the early quantifier sense of *heap* compared to *lot*, she has only looked at the meaning of *heap*, and has not studied the patterns these size nouns occur in as distinct constructions, understood as form–meaning pairings. As I will argue in this article, this distorts her comparison of *heap* and *lot* because they are not compared in the appropriate constructions.

In this paper, I will compare *heap(s)* and *lot(s)* on the basis of extensive diachronic corpus analysis. Using a constructional approach similar to Brems (2011), I will determine the relative chronology by which *heap(s)* and *lot(s)* developed quantifier constructions. It will be argued that it is only by studying the various patterns these size nouns occur in as distinct constructions, i.e. form–meaning pairings, that we can distinguish systematically between lexical head, partitive and quantifier constructions featuring size noun expressions and make a sound comparison between *heap* and *lot*.

The structure of the paper is as follows. In Section 2, synchronic size noun uses will be argued to constitute collocationally defined constructions, a specific subtype of partially filled constructions (cf. Goldberg 2006). Section 3 will move to the diachronic study. In Section 3.1, the diachronic data sets and methodology used for the case study will be presented. Section 3.2 then presents the case study itself and a discussion of the main observations. I will examine Traugott’s claim that *heap* was the earliest size noun from the set studied in Brems (2003 and 2011) to have a quantifier use and thus may have functioned as an attractor model for the grammaticalisation of other size noun expressions such as a *bunch/load/lot of*, rather than a *lot of* (as hypothesised in Brems 2003). Section 4 sums up the most important findings of the synchronic and diachronic case studies. I will claim that *heap* and *lot* have developed much more on a par than Traugott (2008) assumes and that it was *lot* rather than *heap* which seems to have been a primary attractor model for the grammaticalisation of other size noun expressions. Section 5 rounds off with a general conclusion and prospects for further research.

2. Synchronic size noun uses as collocationally defined constructions

On the basis of analysis of the synchronic corpus data from the Collins *WordbanksOnline* (see note 2), three main patterns can be distinguished in which size nouns can feature. Table 1 first represents the total number of attestations of the

Table 1. Frequencies of ten size nouns within the WordbanksOnline corpus

	<i>bunch</i>	<i>bunches</i>	<i>heap</i>	<i>heaps</i>	<i>pile</i>	<i>piles</i>	<i>lot</i>	<i>lots</i>	<i>load</i>	<i>loads</i>
overall total	1240	77	353	149	824	239	40118	5125	1165	1152
freq. pmw	21.6	1.3	6.1	2.6	14.4	4.2	698.7	89.3	20.3	20.1
within the size noun cxn	816	49	106	90	364	165	24734	4353	594	760
freq. pmw	14.2	0.9	1.8	1.6	6.3	2.9	430.8	75.8	10.3	13.2

nouns *bunch*, *bunches*, *heap*, *heaps*, *pile*, *piles*, *lot*, *lots*,³ *load* and *loads* across the Collins WordbanksOnline, followed by the normalised frequencies per million words (pmw). The last two rows represent the total number of attestations of these size nouns within the binominal NP *of* NP-syntagm, again with the normalised frequencies per million words. The data sets used in the corpus analysis are either exhaustive or constitute a random sample of 250 analysable instances when the total number of attestations exceeded 250. Quantitative analysis is restricted to the binominal environment.

My framework for the English NP is primarily cognitive-functional and sees the organisation of the NP in terms of three structural-functional zones underpinned by dependency relationships, i.e. determination, modification and categorisation. Determiners are understood here to give either identifying or quantifying information in a broad sense, e.g. *many* in *many heaps of dust* (cf. Langacker 1991; Bache 2000; Davidse 2004).

Usage-based construction grammar is a grammatical model that allows me to describe and interpret size noun patterns such as examples (1) to (3) as instances of constructions, i.e. semiotic pairings of form and meaning, and to describe in great detail their component elements and how these construe specific constructional meanings (cf. Croft and Cruse 2004:241; Goldberg 2006:5). By incorporating an eclectic constructional approach, three main patterns could be distinguished in which size noun expressions feature systematically in Present-day English. Each type of use corresponds with a particular head-modifier structure, a semantico-pragmatic meaning and strong preferences for specific collocational patterns, viz. between the size noun and the noun following *of*, and between the size noun and preceding determiners and modifiers. They are hence “specific templates in which one or more of the slots is already lexically filled-in” (Cappelle 2005:9), or rather collocationally defined. In terms of Goldberg (2006) they can be said to resemble partially filled constructions in which some positions are variable, while other configurational slots are lexically fixed in order to arrive at a grammatical construct. I will also refer to the constructional levels proposed by Traugott (2007), distinguishing between macro-, meso- and micro-constructions.

Micro-constructions are individual construction types, e.g. the *heap of*-construction versus *lot of*-construction. A set of similarly behaving micro-constructions forms a meso-construction, e.g. size noun constructions versus *kind/sort/type of*-constructions. Macro-constructions present the highest level of abstraction, generalising over several meso-constructions.

I will now give a detailed description of the three main synchronic size noun patterns in terms of their construction-specific syntactic, semantico-pragmatic and collocational features. I distinguish between lexical head noun, partitive and quantifier constructions. These semiotic labels refer both to the syntactic status and function of the size noun expression within each of the constructions.

In the lexical head noun construction, the size noun acts as the syntactic and semantic head of the binominal syntagm, specifying the type of which the NP as a whole is an instance, while the *of*-phrase functions as a postmodifier. When the binominal syntagm appears as the subject of a clause, verb agreement is between the size noun and the finite verb (see example (7)). As also observed in Brems (2011), this criterion cannot be checked systematically, but only when the size noun *of* NOUN2-syntagm appears as the subject and the size noun and NOUN2 differ in number. In the head noun construction, the size noun is a fully categorial count noun, i.e. it displays the typical features of a count noun: it can be preceded by determiners and modifiers and has both a singular and plural form. Consider examples (4) to (8):

- (4) She sent the surgeon **a beautiful bunch of flowers** to thank him
(CWO-sunnow)
- (5) At the instant of this picture, he is flattened against a wall, his body shielding **a heap of children** — older children lying on younger ones to protect them
(CWO-brephem)
- (6) Then she picked up **the little pile of shoots** she had prepared.
(CWO-usbooks)
- (7) **Six plane loads of food** are also being flown today to the city of Baidoa.
(CWO-usspok)
- (8) Again it fell to **the lot of the luckless GP** to explain to Mary that she was the carrier of a condition dangerous to other people
(CWO-brbooks)

As the name implies, in the lexical head noun constructions the size noun, as the head noun, imposes a specific lexical meaning onto NOUN2; for example in (4), an instance of the type “bunch” is designated which is specified to consist of flowers (cf. Langacker 1991; Bache and Davidsen-Nielsen 1997:350ff). In this

construction type, size nouns may appear in the singular, (4) to (6) and (8), and the plural, (7), and the distinction is functional in the sense that *six plane loads of food* refers to *six* instances of the type “plane load”. The head noun construction is also fairly unrestricted in terms of premodification, allowing both indefinite, (4) and (5), and definite, (6) and (8), determiners, quantifiers, (7), and all kinds of qualitative, (4) and (6), and classifying, (7), modifiers. In the head noun constructions with *bunch(es)*, *load(s)*, *pile(s)* and *heap(s)* the referents of the size noun and NOUN2 are coextensive. Determiners, quantifiers and premodifiers typically apply to the entire construction and not to the size noun or the NOUN2 separately. *Little* in *the little pile of shoots* in (6) describes the pile of shoots as being little, not the shoots themselves. Head noun constructions are syntactically parsed as [determination] [modification] [head: size noun [postmodifier: *of* + NOUN2]]. The head noun construction is hence a complex NP that refers to a concrete constellation indicating a form (head noun) and what it consists of (postmodifier). As observed earlier, synchronic lexical head noun constructions with *lot(s)* typically refer to the more abstract concept of ‘what falls to someone by lot’, derived from *lot(s)* referring to objects used to make decisions or settle disputes.

In head noun constructions, the size noun collocates with NOUN2s that are restricted. In the case of *bunch(es)*, *heap(s)*, *pile(s)* and *load(s)*, they are restricted to subsets of typically inanimate, concrete nouns, i.e. nouns that have specific referents that can be registered by the senses in the here and now (cf. Quirk et al. 1985:247; Langacker 1991:27–30).⁴ Synchronically, *bunch* constrains the set of inanimate concrete NOUN2-collocates it teams up with the most, profiling “a collection or cluster of things of the same kind, either growing together [...] or fastened closely together in any way...” (OED, sense 3a of the noun *bunch*). Frequent collocates refer to flowers, herbs and plants. Because they denote constellations of less specific shape, *heap(s)*, *pile(s)* and *load(s)* show more collocational stretch, and pattern with non-count and count concrete nouns referring to various objects. They can appear with concrete animate nouns which then typically pertain to dead bodies or, as in *a heap of children* (example (5)), objectify the human bodies. The attested lexical head noun construction with *lot(s)* refers to the more abstract concept of someone’s destiny and typically has animate concrete collocates in NOUN2-position in keeping with the specific meaning of the size noun.

The second binominal construction type discussed here is the partitive construction. Note that only *lot* and *lots* still feature in this construction synchronically, and only two tokens of *lot* and two of *lots* out of sets of 250 were of this type. In this construction, *lot(s)* function as the head noun and reference is to a set of articles sold together. *Lot(s)* can hence be substituted with “unit(s) of”. An example is (9):

- (9) I used to fetch **three lots of milk** and I had a sixpence a week
(CWO-brspok)

The partitive meaning of *lot(s)* can be linked to the lexical one in the sense that *lots* were often cast to settle how things should be distributed or divided among people (cf. OED, sense 8 of the verb *to lot*). In the partitive construction, *lot(s)* can be preceded by modifiers, determiners and quantifiers, as in (9). *Heap(s)* and the other size nouns no longer appear in the partitive construction synchronically.

The third binominal construction type discussed here is the quantifier construction. The size nouns *bunch*, *heap*, *heaps*, *load*, *loads*, *lot* and *lots* feature in this construction, as in examples (10) to (12):⁵

- (10) **A bunch of drunken, brain-dead louts** seem determined to disgrace our team and our country
(CWO-sunnow)
- (11) There'll be **heaps of good nosh and champagne** to keep occupied sweetie
(CWO-oznews)
- (12) "Making babies is going to be **a whole lot of fun**"
(CWO-brbooks)

This quantifier construction can be parsed as [quantifier: size noun + *of*] [head: NOUN2]. In this construction, the size noun, together with *of*, expresses the size of NOUN2, which is the head noun of the binominal syntagm. Contrary to the head noun construction, *heaps of* in (11) does not serve to categorise NOUN2, i.e. *good nosh and champagne*, as an instance of the type 'heaps'. Rather, *heaps of* belongs to the determination zone providing quantitative information about the head noun *nosh and champagne*. In keeping with Langacker (1991) we can say that quantifiers serve to assess the magnitude of the instance designated by the NP on a scale of measurement. Accordingly, as exemplified by (10), in these quantifier uses agreement is between the head noun *louts* and the finite verb *seem*. Size noun expressions thus are a non-canonical alternative to regular quantifiers such as *many/much* with which they can be substituted, attesting to the structural and semantic unity of the size noun and *of*.⁶ Size noun expressions are non-canonical quantifiers because of their periphrastic form and because they have more expressive semantico-pragmatics than *many* and *much*. They typically appear in more hyperbolic, creative discourse contexts that add evaluative features and which are generally more informal or conversational than those of canonical quantifiers.

Quantifier constructions with size nouns are collocationally more open than head constructions and can team up with virtually all kinds of inanimate concrete nouns, (11). They also systematically quantify concrete animate nouns, (10), as well as abstract nouns, (12). In head noun constructions, animate NOUN2s were only

allowed with *heap(s)* and *pile(s)* when referring to literal constellations of (dead) bodies, as in *heaps of two or three bodies* (CWO-Times) and *a heap of children* (5). They form a minority of NOUN2-collocates in that use (e.g. two attestations for *piles* out of the total 148 head uses). The specific lexical meaning of *lot(s)* in lexical head noun constructs such as *the lot of the luckless GP* (8) is typically restricted to animate nouns, whereas in the partitive construction, NOUN2 is typically an inanimate concrete noun, as in *three lots of milk* (9). In the quantifier construction, animate NOUN2s on average account for 20 per cent of the NOUN2-collocates of all size nouns. Quantifier constructions with *bunch*, *load(s)*, *lot(s)* and *heap(s)* synchronically each constitute micro-constructions which display collocational preferences specific to them. The appendix contains quantified collocational profiles of each size noun in lexical head and quantifier constructions. For each size noun, token frequencies are provided per type of NOUN2-collocate. The *bunch of* quantifier micro-construction, for instance, favours animate NOUN2s. For most size noun quantifiers, however, abstract NOUN2-collocates prevail. *Lot* and *lots of* quantify all kinds of nouns, with a preference for animate and inanimate concrete nouns.

In quantifier constructions, the lexical material preceding the size nouns is restricted to intensifying expressions such as *a whole* in (12) and *a whole bunch of women* (CWO-usbooks).⁷ Canonical count noun quantifiers also allow modification by means of scalar adjectives such as *great*, *good*, *fair*, e.g. *Gerhardt had been to the place a good many times* (CWO-brbooks); *I'm a postlady and I deliver a good few Cosmetics To Go catalogues and parcels* (CWO-brephem). These intensifying expressions echo the quantifier meaning of the construction and have a different status than the premodifiers of size nouns in head noun constructions. The latter were virtually unrestricted in lexical head noun and partitive constructions and contributed to the type specification expressed by the head size noun by making it more specific (cf. Langacker 1991: 54). In quantifier constructions, the determiner preceding singular size nouns is mostly restricted to the indefinite determiner and quantifiers are not allowed. Definite determiners are again possible in contexts in which canonical quantifiers also allow them, e.g. emphatic uses. Compare *Harding was not approached to answer the many questions put in the article* (CWO-oznews) and *Tickets for the heaps of other events are selling faster than the lap time at today's Indy* (CWO-oznews). In quantifier constructions, the size noun shows signs of at least partial decategorialisation, as it lacks properties typical of a fully categorical noun: there are restrictions in determination, and premodification of the size noun is limited to intensification. In this context, it is interesting to note that the plural forms of size nouns synchronically show higher proportions of quantifier uses than singular forms, except in the case of *bunch(es) of*. For *lot* and *lots of* the degree of usage is the same. Table 2 represents the frequencies of quantifier uses per size noun based on Collins WordbanksOnline.

Table 2. Relative frequencies of quantifier constructions

<i>heap</i>	<i>heaps</i>	<i>lot</i>	<i>lots</i>	<i>load</i>	<i>loads</i>	<i>bunch</i>	<i>bunches</i>
34%	66.7%	99.2%	99.2%	74.8%	93%	88.4%	0%

The association of quantifier uses with plural size nouns can also be seen as a reflex of decategorialisation in the sense that the singular/plural contrast of size nouns seems constrained or at least linked to prototypical functions of the size noun expressions. In addition, the singular/plural distinction is no longer functional in the sense that the contrast is in head noun uses. *Heaps of good nosh and champagne* refers to one instance of nosh and champagne so to speak which is then measured off on a scale to assess its quantity.

Because the head, partitive and quantifier size noun construction each link up with systematic collocational patterns, both between the size noun and pre-modifiers and/or determiners, and between the size noun and NOUN2, Brems (2011) argued that these patterns synchronically constitute collocationally defined constructions. Table 3 presents an overview of the main binominal constructions which feature size nouns.

As mentioned earlier, the appendix represents the quantified collocational profiles of all size nouns in their head and quantifier micro-constructions, as well as ambiguous patterns, which could not be classified as either of these construction types. The collocational analysis of size noun constructs shows that animate nouns, though a subcategory of concrete nouns, distinguish themselves from other types of concrete nouns in that they, just like abstract nouns, typically associate with the grammatical functions of size noun expressions, i.e. quantifier constructions. In addition, they also appear in head noun constructions with *lot(s)* referring to someone's destiny. They are singled out as a separate category for that reason.

Table 3. Size noun patterns as collocationally defined constructions

	Semantics	Syntax	Collocational patterns
Head cxn	size noun consists of NOUN2 ⁸	[size noun]+ [of+NOUN2] Head modifier	– subsets of concrete NOUN2s – unrestricted premodification of size noun
Partitive cxn	“a unit of NOUN2”	[size noun]+ [of+NOUN2] Head modifier	– subsets of concrete NOUN2s – unrestricted premodification and determination of size noun
Quantifier cxn	“a quantity of NOUN2”	[size noun +of]+ [NOUN2] Modifier head	– concrete, abstract, animate NOUN2s – restricted premodification of size noun (i.e. quantification-reinforcing)

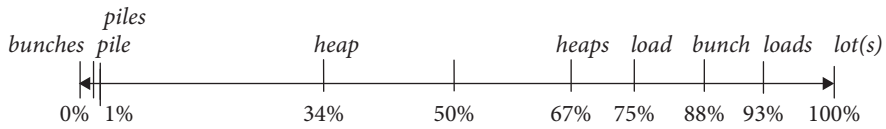


Figure 1. Scale of grammaticality

Synchronically, size noun patterns not only show variation in function and form but also in the degree of their grammaticality, i.e. the extent to which they are used as a quantifier. Figure 1 represents the individual size nouns on a scale with the percentage of quantifier constructions (cf. Brems 2003). It thus becomes clear that some size nouns (synchronically) predominantly appear in head noun constructions, whereas others mainly appear in grammatical quantifier constructions or occur in both types rather evenly. *Lot* and *lots of* are situated at 100 per cent of grammatical uses.

As correctly pointed out by Kroch (1989), Andersen (2001), Lehmann (2004) and Traugott (2008), synchronic clines, such as Figure 1, cannot be assumed to reflect the direction or rate of historical change in a straightforward manner. Comparing the collocational profiles of present-day head versus quantifier constructs of these size nouns, one might assume that the latter are the result of ever increasing collocational extension from a formerly restricted set of collocates in the head noun construction. However, corpus analysis shows that, diachronically, the grammaticalisation of *heap(s)* and *lot(s)* involved more complex paths of development involving partitive constructions in addition to lexical head noun constructions and quantifier constructions. In Section 3, I will argue that, while *heap* has an early quantifying sense, typically referring to a multitude or host of (animate) referents, this use, among other features, still has syntactic head status, as also argued by Traugott (2008), and has to be defined as a partitive construction.

3. *Heap(s)* and *lot(s)*: The diachronic dimensions of collocationally defined constructions

On the basis of the *Early English Books Online* corpus of LION (LION: EEBO), the *Middle English Dictionary* (MED) and the OED, Traugott (2008: 6) argues that the synchronic frequencies of size nouns in quantifier constructions as represented in Figure 1 do not reveal the rate at which these size nouns diachronically developed quantifier uses. “[O]n semantic grounds” she argues that *heap* was the first size noun of the set discussed in Brems (2003) to develop a quantifier use “and a *lot of* the most recent” (Traugott 2008: 6). From around 1350, *heap* could refer to a multitude or host, typically of people, within binominal syntagms (see example (13)):

(13) And of vp-holders an hep

'And of upholders a multitude'

(MED, *Piers Plowman*, c1390; cited in Traugott 2008: 7)

If synchronic frequencies and diachronic processes of change did correlate for size nouns, Traugott (2008: 8) argues, “*heap* should be the most frequent in the quantifier sense. However *a lot of* is, and is one of the most recent to be used as a quantifier”. Hence, Traugott concludes that the percentages represented in Figure 1 in this article do not correlate with the diachronic developments of these size nouns.

Traugott (2008: 6) notes that, syntactically, the early quantifier use of *heap* “appears to be the head of the NP of NP construction”, also shown by the fact that the *of*-phrase can be fronted, as in example (13). Traugott (2008) does not include a detailed study of *a lot of*. The earliest appearance of a quantifier use for *lot* seems based on the dictionary entry in the OED, which indeed indicates examples from around 1800 onwards in which *lot(s)* refer to “a considerable number, quantity, or amount” (OED, sense 9).

In order to check Traugott’s claim against my hypothesis about *lot of* being an attractor model in the grammaticalisation of other size nouns, I will present an exhaustive diachronic corpus study of *heap(s)* and *lot(s)*. The data used in this study are discussed in Section 3.1 along with the constructional methodology used. Section 3.2 then discusses the main findings of the diachronic corpus study.

3.1 Diachronic data sets and methodology used

For the diachronic case study exhaustive extractions were made for *heap*, *heaps*, *lot* and *lots* from various corpora, using *Abundantia Verborum* (AV):⁹ the *Penn-Helsinki Parsed Corpus of Middle English* (PPCME) and *Early Modern English* (PPCEME), the *Innsbruck Middle English Prose Corpus Sampler* (IMEPCS), the *Corpus of English Dialogues* (CED), the *Corpus of Early Modern English Texts* (CEMET) and the *Corpus of Late Modern English Texts* (CLMET) (De Smet 2005), and the *Old Bailey Corpus* (OBC). Corpora pre-dating the Middle English period are not included in this study, since the NP of NP-syntagm, which is my main focus, only appears from Middle English onwards (cf. Denison 2002).

In order to net all spelling variants listed in the OED and MED, singular and plural forms, and all possible case markings, the following queries were used in *Abundantia Verborum* for *heap(s)* and *lot(s)* respectively: ‘hy?\+?[aei]\+?[aeiyo]? \+?a?\+?pp?[usnaer]?[maesnu]?[eam]?’ and ‘h?le?oo?h?\+?tt?h[usnaer]?[maesnu]?[eam]?’ These queries capture all occurrences of *heap*, *heaps*, *lot* and *lots* irrespective of the syntagmatic environment in which they occur. Occurrences within the NP of NP-syntagms were labelled manually using *Abundantia Verborum*.

Table 4. Token frequencies of *heap*, *heaps*, *lot* and *lots* in diachronic corpora

	IMEPCS 1100– 1500	PPCME 1150– 1500	PPCEME 1500– 1710	CED 1560– 1760	CEMET 1640– 1710	OBC 1674– 1834	CLMET 1710– 1780	CLMET 1780– 1850	CLMET 1850– 1920
<i>heap</i>	24	4	12	5	4	108	13	51	45
	5.1	3.5	6.7	4.2	2.1	2.1	4.3	8.9	7.2
<i>heaps</i>	1	1	3	2	6	6	7	39	16
	0.2	0.9	1.7	1.7	3.1	0.1	2.3	6.8	2.6
<i>lot</i>	2	11	2	2	3	230	13	68	220
	0.4	9.5	1.1	1.7	1.6	4.5	4.2	11.9	35.5
<i>lots</i>	0	0	1	2	1	37	0	7	53
	0	0	0.6	1.7	0.5	0.7	0	1.2	8.5

Irrelevant tokens or multiple attestations of concordances were filtered out manually. Table 4 indicates the number of tokens for *heap(s)* and *lot(s)* within the NP of NP-syntagms per corpus. The numbers in bold represent absolute frequencies; the second rows consist of normalised frequencies per million words in each corpus.

The low frequencies indicate an overall dearth of diachronic data for size nouns. This might be linked to the intrinsic lack of more informal and/or colloquial data for the older periods of English. Halliday (1978), Chafe (2003) and Du Bois (2003) have singled out casual conversational language as an important locus of language change and innovation because it is less subject to overly conscious forms of monitoring or engineering. It is also the type of language that size nouns today still typically occur in. The *Old Bailey Corpus*, which consists of the proceedings from London's central criminal court, profiles itself as reflecting more colloquial, spoken language, but it too yielded relatively few data. The *Corpus of English Dialogues* contains Early Modern English speech-related texts such as constructed dialogues and authentic speech situations, and amounts to almost 1.2 million words. It too yielded few attestations. The diachronic corpus study will be largely qualitative in nature because of this.

3.2 Diachronic data sets case studies

3.2.1 *Heap and heaps*

The earliest sense of *heap* and *heaps* attested in my diachronic data set refers to “a collection of things lying one upon another so as to form an elevated mass often roughly conical in form” (OED, sense 1.a.; MED, sense 2.a.). The earliest example in the OED is dated c725. Examples (14) and (15) illustrate this lexical constellation sense both inside (14) and outside (15) the NP of NP-construction:

- (14) He led hym to a **hep of stonys**.
 ‘He led him to a heap of stones’
 (IMEPCS, *Richard Rolle of Hampole*, c1349)
- (15) and it haþt a red flour and it is strong in sawour and it growith \ in wallys
 and in **donghepys**
 ‘and it has a red flower and it has a strong smell and it grows in valleys and
 on dunghills’
 (IMEPCS, *Agnus Castus. A Middle English Herbal*, c1450)

In this use, the size noun is the syntactic and semantic head of the binominal syntagm, similar to synchronic head noun constructions with *heap(s)*. NOUN2-collocates in this use are restricted to concrete, stackable referents.

A second early use, which is restricted to singular *heap*, is illustrated by examples (16) to (18):

- (16) The Bear sprang up between the bush and the river among a **Heap of wives**
 ‘The bear sprang up between the bush and the river among a group of
 women’
 (IMEPCS, *The History of Reynard the Fox*, c1481)
- (17) That egle that lighted amonge **the hepe of swannes**, sygnyfieth our enmye
 stranger
 ‘That eagle that settled among the group of swans, signifies our enemy
 stranger’
 (IMEPCS, Caxton’s *Eneydos*, c1490)
- (18) Among **an heep of sterris fixe**
 ‘Among a constellation of fixed stars’
 (IMEPCS, *A Treatise on the Astrolabe*, c1391)

In this pattern, singular *heap* refers to a host or multitude, especially of people, but, as example (18) shows, also to a cluster of stars, or a collective of angels (cf. Traugott 2008; OED, sense 3; MED, sense 1). In this multitude sense, *heap* has a restricted collocational range of NOUN2s, viz. people, animals, angels and stars. In examples (16) to (18), reference is to a collective of women and swans or a constellation of stars in which the referents of NOUN2 are spatio-temporally contiguous. The frequent presence of adverbials such as *among* in (16) to (18) further attests to this.

I will refer to these examples as instances of the partitive construction, in keeping with their overall function, which is to indicate “a unit of NOUN2” (cf. Traugott 2007). They qualify as a distinct construction, since the pattern combines a specific syntagmatic structure with a particular constructional meaning and NOUN2-collocates that differ from those attested for the diachronic head noun

construction and, as we will see, the quantifier construction. With Traugott, I argue that *heap* syntactically functions as the head noun in this construction, rather than a modifier, as the *of*-phrase can be fronted, e.g. in *And of vp-holders an hep* (MED), cited earlier in example (13). The head noun here designates an abstract collective rather than a concrete constellation which was the case in the lexical head noun construction. There is hence no question of syntactic reanalysis of *heap* as a quantifier, but there is some discursive backgrounding of the size noun in favour of foregrounding of NOUN2. Even though the partitive construction has to do with indicating quantity, unlike canonical quantifiers, it does not rely on a semanticised scale of absolute quantification for doing so (cf. Langacker 1991). By implication an indefinite number of swans and stars is referred to in (17) and (18), respectively, but the semantics of *heap* in partitive constructions is equivalent to collective nouns or idiomatic measure noun expressions such as *a bevy of swans*, *a constellation of stars*, rather than to canonical quantifiers such as *many* and *much*. The oldest example of this sense of *heap* is dated c971 in the OED, where it occurs outside the NP *of* NP-syntagm. The earliest examples of this collective sense in NP *of* NP-syntagms are attested around 1350. It is said to have become obsolete around 1600. The OED does not make an explicit link between *heap* in the partitive construction and the lexical head construction illustrated by examples (14) and (15).

Examples (19) to (22), then, exemplify quantifier constructions with *heap* and *heaps* similar to synchronic examples such as *heaps of good nosh* (11). In this construction NOUN2-collocates can be (in)animate concrete, abstract and both count and non-count nouns.

- (19) “I hope you won’t go yet, for I expect my son home soon, and I’ve a **heap of things** to talk to you about”
(CLMET, *Cecilia*, c1782)
- (20) I should produce **heaps of sonnets**
(CLMET, *Stories from the Italian poets: with lives of the writers*, c1846)
- (21) He had also, by Gan’s advice, brought **heaps of wine and good cheer** to be set before his victims in the first instance.
(CLMET, *Stories from the Italian poets: with lives of the writers*, c1846)
- (22) There were heaps and **heaps of mothers** in the world, of course
(CLMET, *The Extra Day*, c1915)

In these examples, *heap(s) of* have modifier status and serve to quantify NOUN2, which is the head. The modifier status is shown by the fact that verb concord is with NOUN2, e.g. *there were a heap of breeches*; *there were a heap of young men beating Mr. Bradley* (*Old Bailey Corpus*). As quantifiers, *heap of* and *heaps of* serve

to assess the size of NOUN2-referents with respect to a scale of magnitude (cf. Langacker 1991:81), i.e. they are subjective in nature, as opposed to *heap* in examples (16) to (18). The size nouns *heap* and *heaps* together with *of*, as chunks, can therefore be substituted by canonical absolute quantifiers such as *many* and *much* rather than “a collection/group of”. NOUN2-collocates are fairly unrestricted in nature. In addition, NOUN2-referents do not need to be spatio-temporally contiguous as they did in the partitive construction. The *sonnets* in (20) may be written over an extensive period of time and the *mothers* in (22) are located all over the world. The discourse contexts are typically hyperbolic, especially with plural *heaps of*. In my data sets the first uses of *heap(s) of* in the quantifier construction occur around 1780.

3.2.2 *Lot and lots*

Similar to *heap* and *heaps*, the diachronic data sets for *lot* and *lots* yielded three main constructions in which the size nouns can feature: a lexical head, partitive and quantifier construction. In the Middle English data sets, *lot(s)* outside the NP *of* NP-construction almost exclusively occur as part of composite predicates (cf. Brinton and Akimoto 1999) referring to the drawing or casting of *lots* as a method of decision making (example (23)):

- (23) But lete us draw **lottes** whose it shall be
 ‘But let us draw lots to determine whose it shall be’
 (PPCME, *In Die Innocencium*, c1497)

In NP *of* NP-constructions, reference is typically to what is assigned to someone by lot or fate (example (24)):

- (24) For our Lord ne shal nougt forsake te penaunce of te singers up **te lot of te rightful**
 ‘For our Lord shall not forsake the penance of the singers upon the lot of the rightful’
 (PPCME, *The earliest complete English prose psalter*, c1350)

These lexical senses have been around from 950 (cf. OED). *Lot(s)* appear in NP *of* NP-constructions from Middle English onwards.

In addition, there is an early binominal partitive construction, in which the head/size noun refers to an abstract portion or part of something. It often appears in *The Ormulum*, an exegetic text which the OED dates at c1200.¹⁰ NOUN2-collocates in such partitive constructs with *lot* can be inanimate concrete nouns (example (25)), but also animate (example (26)) or refer to more abstract concepts, as in example (27):

- (25) **An lott off manne fode**
 ‘a portion of men’s food’
 (PPCME, *The Ormulum*, c1200)
- (26) **tat tegg [LB: Farisewisshenn] wisslike warenn an lott off tatt Judisshenn folc**
 ‘that they certainly were part of the Jewish people’
 (PPCME, *The Ormulum*, c1200)
- (27) **For to forwerrpenn anig lott Off Moysesess lare...**
 ‘For to reject any part of Moses’ teaching’
 (PPCME, *The Ormulum*, c1200)

In the Early Modern English data sets, *lot(s)* are attested in the abstract collective sense of ‘an article or set of articles for sale’ (example (28)) and the semantically related sense ‘a group of people or things of the same kind’ (example (29)):

- (28) There the merchants and gentlemen of the country going on board, to demand **those lots of slaves** they had already agreed on
 (PPCEME, Aphra Behn, c1668)
- (29) “No, miss, not all, You know when **a lot of servants** gets together, they like to talk about their betters”
 (CLMET 2, *The Tenant of Wildfell Hall*, c1848)

In examples (25) to (29), *lot(s)* have head status. The size nouns refer to spatio-temporally contiguous groups of people or units of things, similar to rare synchronic partitive constructions with *lot(s)*, such as *three lots of milk* (example (9)). The finite verb agrees with *lot(s)* rather than with NOUN2, as illustrated by example (29).

In the 1780–1850 data set, examples emerge that are ambiguous between the ‘group of people’ or ‘set of articles’ reading and a quantifier construction in which *lot(s) of* have modifier status. Ambiguities typically arise with concrete NOUN2-collocates, both inanimate and animate, as illustrated in examples (30) to (32):

- (30) I noticed **a lot of drift timber** scattered upon the island
 (CLMET 3, *Eight years wandering in Ceylon*, c1855)
- (31) There was **a whole lot of people** behind
 (OBC, 1790s)
- (32) I bought **a lot of clothes** of the shopman, and took them to the stable
 (OBC, 1820s)

In these examples semantic paraphrases with either ‘a group of’ or *many/much* are plausible. In (30), *scattered* detracts from the contiguity feature typical of the partitive construction and thereby aids a mere quantifier reading. Even in sales contexts, pragmatic inferences of mere quantity are allowed, e.g. in (32) via the implicature that a set of articles (for sale) refers to a number of them. Syntactically, though, it seems that *lot* is still the head noun controlling verb agreement, as in (31).

As with synchronic data, diachronic data offer few contexts to corroborate the status of size nouns in NP *of* NP-constructions syntactically. Verb agreement patterns can only be checked when the binominals appear as subjects, and the size noun and NOUN2 need to differ in number. With past finites only *were* and *was* are marked for number. Furthermore, fluctuation in verb concord in itself may be a sign of synchronic variation and possible diachronic change (cf. Brems 2011). Such syntactic and semantico-pragmatic ambiguity or under-specification may have enabled the reanalysis of *lot(s) of* as quantifiers (cf. reference to the “pragmatic slack” of bridging contexts in Traugott 2007 following Lasersohn 1999). In these contexts the originally partitive or collective usage of *lot(s)* can be associated with mere quantity and similarities to canonical (monomorphemic) quantifiers such as *many* and *much* are reinforced. The types of collocates allowed in the partitive construction are, furthermore, the same as the ones that can feature in the later quantifier construction.

Around the time of ambiguous examples such as (30) to (32), the first unambiguous quantifier constructions appear with *lot(s)*. Examples (33) and (34) are relatively early attestations of plural *lots of* quantifying *room*. The spelling in the Brönte example reflects the phonetic erosion of the quantifier:

(33) What, there’s **lots o’ room!**
(CLMET 2, *Agnes Grey*, c1847)

(34) Clear away, my lads, and let’s have **lots of room** here!
(CLMET 2, *A Christmas Carol*, c1843)

Quantifier constructions with *lot(s)* are collocationally loose and occur with all kinds of (un)count (in)animate concrete nouns that cannot appear with *lot(s)* in the lexical head noun constructions, but are allowed by the partitive construction. *Money* is a frequent collocate, just like *things*, but *lot(s) of* also collocate with abstract nouns, e.g. *dignity* in (37), *thinking* in (40), and animate nouns, as in (35) and (41). Verb concord is systematically with NOUN2, e.g. (35):

(35) **A lot of fellows** have crotchets
(CLMET 3, *The English Constitution*, c1867)

- (36) ‘But I mean **a lot of money** — tens of thousands, hundreds of thousands?’
(CLMET 3, *The Grand Babylon Hotel*, c1902)
- (37) And she had her dignity too — and **a lot of it**
(CLMET 3, *The Old Wives’ Tale*, c1908)
- (38) “There are **lots of places** we could go to”
(CLMET 3, *The Old Wives’ Tale*, c1908)
- (39) A name, yes, and **lots of triumphal processions**
(CLMET 3, *The Christian*, c1897)
- (40) It’ll save us [sic] **lot of thinking!**
(CLMET 3, *The Prisoner of Zenda*, c1894)
- (41) “They ought then to have heaps of work, or they ought to have **a lot of children** to look after”
(CLMET 3, *Clara Hopgood*, c1896)

Spatio-temporal contiguity of NOUN2-referents is often loosened in quantifier constructions compared to partitive constructions. *Lot(s) of* can be substituted by *many* or *much*. As observed by Langacker (2009), *lot(s) of* as quantifiers are unrestricted with regard to the countability of the noun they quantify, whereas *many* and *much* are, viz. to count and non-count nouns, respectively. *Heap(s) of* in quantifier constructions can likewise quantify count and non-count nouns as shown by examples (19) to (22). In expressing quantity, *lot(s) of* as quantifiers “no longer construe their quantity in relation to a physical entity”, i.e. a specific set of articles, a batch or a group, but vis-à-vis a schematic quantity scale, similar to canonical quantifiers (Langacker forthcoming: 13).

Not much later, adverbial uses can be attested where *lot(s) of* grade comparative adjectives (example (42)):

- (42) all the unlicensed scoundrels from the Tower to Gravesend, and **a lot further**
(CLMET 3, *The Grand Babylon Hotel*, c1902)

4. Discussion of findings

Table 5 gives an overview of the relative chronologies in which *heap(s)* and *lot(s)* are attested in binominal lexical head, partitive and quantifier constructions, as defined in the previous sections, based on my diachronic data sets and the OED and MED. *Lot* and *lots* developed in the same way, whereas *heap* and *heaps* diverged depending on the construction type. For this reason the latter are represented separately, whereas *lot(s)* are not. The construction types all pertain to uses

Table 5. Relative chronologies of lexical head, partitive and quantifier constructions

<i>heap</i>	<i>heaps</i>	<i>lot(s)</i>
From Middle English (1100)		
Lexical head noun construction – ‘constellation’ – NOUN2-collocates: subsets of concrete nouns	Lexical head noun construction – ‘constellation’ – NOUN2-collocates: subsets of concrete nouns	Lexical head noun construction – ‘what falls to someone by destiny’ – NOUN2-collocates: typically animate nouns
		c1200
		Partitive construction – ‘portion, part’ – NOUN2-collocates: concrete, abstract or animate
c1350		
Partitive construction – ‘multitude, host’ – NOUN2-collocates: typically animates, but also stars		
c1780		
Quantifier construction – ‘subjective assessment of quantity’ NOUN2-collocates: concrete, abstract, animate	Quantifier construction – ‘subjective assessment of quantity’ NOUN2-collocates: concrete, abstract, animate	Quantifier construction – ‘subjective assessment of quantity’ NOUN2-collocates: concrete, abstract, animate

of these size nouns within NP *of* NP-syntagms, which only appear from Middle English onwards.

From the Middle English period onwards, *heap(s)* and *lot(s)* are attested within NP *of* NP-syntagms in their respective lexical meanings. Both *heap* and *lot(s)* then seem to have passed through a partitive construction on their way to a real quantifier construction in which the size noun has modifier status. *Heaps* is not attested in the partitive construction in my data sets, nor in the examples of the OED and MED. The binominal partitive construction with *lot(s)* is attested a century and a half earlier than the one with *heap* in my data and does appear with both *lot* and *lots*. This ties in with the examples in the OED and MED. Whereas *heap* synchronically no longer occurs in partitive constructions, synchronic examples in which *lot(s)* *of* have head noun status occur in the partitive construction in my sample, e.g. *three lots of milk* (example (9)). The lexical meaning of *lot* referring to someone’s destiny is also still attested, as shown by example (8) *the lot of the luckless GP*, but did not occur in my random sample, which may attest to its overall low frequency in Present-day English.

The quantifier construction with *heap(s)* and *lot(s)* emerges at about the same time in my data. It is attested with some frequency from 1780 onwards. I therefore argue against Traugott (2008) and claim that the quantifier construction with *heap(s)* is not older than the one with *lot(s)*. Traugott (2008) justifiably questioned some of the diachronic hypotheses related to the synchronic cline in Brems (2003). However, in claiming that *heap* was the first size noun to develop a quantifier use and *lot* the most recent, she only takes the semantics of *heap* into account and does not distinguish between distinct constructions, understood as form–meaning pairings, in which *heap* and *lot* can occur.

In the present study, constructions have been defined by the functions that the size nouns fulfil within the NP of NP-syntagm, their syntactic status and the collocational relations between the size noun and NOUN2. This led to the distinction between three synchronic and diachronic constructions. In the lexical head noun construction, the size noun is the head noun and refers to a concrete constellation in the case of *heap(s)* and a specific, more abstract meaning in the case of *lot(s)*. NOUN2-collocates are restricted in keeping with these specific lexical meanings. In the partitive construction, the size noun is also the head noun, but refers to a more abstract collective. In the case of *heap*, NOUN2-collocates are largely restricted to animate nouns, while *lot* and *lots* can co-occur with inanimate and animate concrete nouns as well as abstract ones. In the quantifier construction then, *heap(s) of* and *lot(s) of* function as modifiers that serve to assess the quantity of the NOUN2-referent, similar to monomorphemic quantifiers such as *many* and *much* with which they can be substituted. Diachronically, *heap* and *lot(s)* occurred in all three constructions, whereas *heaps* does not appear in the partitive construction. What separates both the lexical head noun and the partitive construction, as two construction types in which the size noun has head status, from quantifier constructions, in which the size noun has modifier status, is that the latter are subjective in nature. They call up a scale and require a subjective assessment of quantity relative to that scale.

The synchronic cline of Brems (2003), represented in this article as Figure 1, represents quantifier constructions in which *heap(s)* and *lot(s)* have modifier status, as defined by the constructional approach argued for above. When Traugott (2008) claims that *heap* rather than *lot* was first in developing a quantifier use, she in fact compares the early partitive construction with *heap*, in which *heap* has head status, to quantifier constructions with *lot(s)*, in which the size nouns have modifier status. This misconstrues the comparison. In the present diachronic study, the issue of whether *heap(s)* or *lot(s)* was first to develop a quantifier construction has been investigated in accordance with a constructional approach. Lexical head, partitive and quantifier constructions are distinguished on semantico-pragmatic, syntactic and collocational grounds. It is only on the basis of such constructional

analysis that comparisons can be made between the emergence of various size nouns in the quantifier construction. The comparison should be between quantifier constructions with *heap(s)* and *lot(s)*. Moreover, we have seen that *lot(s)* also appear in an early partitive construction, not observed by Traugott (2008), which is attested even earlier than the one with *heap*.

How do the lexical head, partitive and quantifier construction relate? In the case of *lot(s)*, rather clear metonymic links can be detected between the meaning of the lexical head, partitive and quantifier construction, which comply with the kind of semantic generalisation and pragmatic enrichment typically attested in grammaticalisation processes. From ‘what falls to someone by lot’ it shifts to ‘a set of articles for sale / of the same kind’ and ‘a rather large quantity’. As we have seen, the partitive construction with *lot(s)* was collocationally already open to both animate and inanimate concrete nouns as well as more abstract nouns such as *lare* (‘teaching’) in (example (27)). As argued by Lorenz (2002) and Himmelmann (2004), for instance, expansion to more types of collocations can be considered an indication of the early stages of grammaticalisation. As a consequence, due to context-induced reinterpretation (cf. Heine, Claudi and Hünemeyer 1991: 65 ff.), we can observe how the scalar implicatures of *lot(s)* in the head noun and partitive construction are reinforced and come to be conventionalised in the quantifier construction. The lexical semantics of *lot* bleach in favour of the enrichment with grammatical meaning. In addition, we have seen that more abstract semantic features such as spatio-temporal contiguity are loosened, as in *There are lots of places we could go to* (example (38)). Because of the early collocational freedom in its partitive constructions, *lot(s)* seem a more likely candidate than *heap(s)* for the function of primary attractor model in the grammaticalisation of quantifier micro-constructions of other size nouns.

In the case of *heap(s)* the interrelations between the lexical head, partitive and quantifier construction are less straightforward. This raises the question of whether the earlier partitive construction with *heap* and the later quantifier construction with *heap(s)* are directly related. Unlike *lot(s)*, only the singular form *heap* seems to feature systematically in the partitive construction, where reference is to a group, typically of people. I argue that the non-correspondence between the partitive construction with singular *heap* and the quantifier construction in which *heap* and *heaps* can feature suggests that the quantifier construction with *heaps* is not necessarily a direct continuation of the partitive construction. In addition there is the non-continuity of the kinds of collocates in both construction types with *heap*. As we have seen, the partitive construction with *heap* has very specific collocational restrictions, mostly animate nouns, in contrast to the lexical head construction which prefers inanimate concrete nouns. This makes it hard to see

the partitive construction as being related to the lexical head construction, where one would expect collocational overlap of some sort.

Interestingly, the MED, which only reflects the Middle English period, lists the multitude sense of *heap* first, and examples of this meaning pre-date the lexical head meaning, viz. c1175 versus c1330. In the OED it is the other way around: the lexical constellation meaning of *heap* is illustrated with examples from c725 onwards, while the examples with the collective sense start around 971. In my data the literal constellation meaning is attested slightly earlier than the partitive construction.

If the quantifier construction with *heap(s)* developed from the partitive construction, where does the early partitive construction in which *heap* has head status stop, and where does the quantifier construction in which *heap(s) of* have modifier status start? The OED simply mentions that the multitude sense persisted in some way in the delexicalised quantifier construction that was illustrated by synchronic example (11) and diachronic examples such as (19) to (22). The most recent example of the now obsolete multitude sense is dated c1594 in the OED and the earliest of the “later colloquial use” is dated c1661. Did further loosening of collocational restrictions on NOUN2-collocates cause the collective sense of *heap* to bleach and size noun status to shift from head to modifier in a process of subjectification and invited inferencing? As mentioned earlier, my diachronic data do not allow the verifying of systematic changes in verb concord, thereby precluding syntactic corroboration of the status of the size noun expressions. The substitution test, with either ‘a collection/group of NOUN2’ for the partitive construction or ‘a quantity of NOUN2’ for the quantifier construction, is likewise tricky since the first, more lexical, replacement also has scalar implicatures which can make replacement judgments rather subjective.

Given the fact that the partitive construction is specific to *heap*, one may argue that singular *heap* and plural *heaps* have followed different pathways in the development of quantifier uses or were influenced by other constructional uses. It could be hypothesised that the quantifier micro-construction with *heap* is a more direct continuation of the partitive construction, whereas quantifier constructions with plural *heaps* arose predominantly in contexts that were ambiguous between a literal constellation reading and a quantifier one.

5. Conclusions and prospects for further research

On the basis of a constructional approach, Table 5 showed that *heap(s)* and *lot(s)* are diachronically attested with two kinds of constructions in which the size noun has syntactic head status: a lexical sense which is collocationally constraining,

and a partitive or collective sense which is more abstract and has quantity-related meaning. Partitive constructions with *heap* and *lot(s)* are attested from around 1350 and 1200, respectively. It thus seems that *heap* and *lot(s)* have developed much more on a par than assumed in previous studies such as Traugott (2008). Both developed micro-constructions of quantifier uses at about the same time, i.e. at the end of the eighteenth century, which contributed to the formation of a meso-construction model. As argued above, *lot(s) of*, which display collocational freedom early on in the partitive construction, may have been a primary attractor model in the development. It would only be on the basis of careful constructional analysis of synchronic and diachronic data that this chronology could be established.

In further research the diachronic case studies of *heap(s)* and *lot(s)* should be supplemented with case studies of other size nouns, such as *load(s)*, *bunch*, and *pile(s)*. These could yield further insights into the relative chronology of their respective developments into quantifiers and the potential analogical pull between them. Extensive diachronic corpus analysis might also shed more light on how the size noun construction as a meso-construction, instantiated by *load(s)/bunch/heap(s)/lot(s) of*, relates to semantically more schematic quantifiers such as *many/much*. This would involve looking at the influence of discourse schemata on the development of hyperbolic quantifier meaning, as well as differences between singular and plural forms of size nouns and an in-depth study of the collocational histories of size nouns.

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Notes

1. Brems (2003 and 2010) did not yet distinguish partitive constructions.
2. CWO stands for Collins Wordbanks*Online*, the synchronic corpus of 51,417,489 million words that was used in Brems (2003 and 2007). It contains contemporary British, North-American, Australian, New Zealand, South African, Irish and Indian English, both spoken and written, and formal as well as informal. Following CWO, the specific subcorpus is mentioned, which may provide more information about the region, level of formality and medium of the

example. The relevant subcorpora are as follows. Brbooks and usbooks refer to British and American (non-)fiction books; sunnow contains editions from the *British Sun* and *News of the World*. Times refers to the British newspapers the *Times* and *Sunday Times*. Brephem are British ephemera such as brochures and pamphlets; SA contains South African newspaper and (non-)fiction material. Usspok and ukspok refer to American and British spoken material, respectively. Oznews refers to Australian newspapers.

3. *Lot(s)* were not yet part of the data sets studied in Brems (2003 and 2010).
4. Abstract nouns describe concepts and pertain to “type space” instead of physical space (Langacker 1991:64).
5. No quantifier uses were attested for *bunches of*. *Pile of* and *piles of* have 3 and 2 quantifier uses, respectively. However, these are very much dependent on context, metonymy or wordplay. For instance, in *Mike Atherton has been warned he must score piles of runs for Lancashire to keep his England Test place* (CWO-sunnow), *piles of* as a quantifier is most probably a pun on the phrase *to pile on runs*, which is often featured in reports of cricket. The quantifier uses of *pile(s) of* will be left out of the present discussion.
6. Against Brems (2003 and 2010) and Traugott (2010), Francis and Yuasa (2008:53 footnote 10) do not consider substitutability of “size noun + *of*” by means of a monomorphemic quantifier as evidence of its reanalysed status within the binominal syntagm. Francis and Yuasa (2008) consider “size noun + *of*” as “a semantic constituent” only. Their multi-modular framework goes against the general tenets of a functional constructional approach.
7. *Whole* can also occur in the head noun construction with size nouns, where it means ‘as a whole’, as in *Internal haemorrhoids can bleed, blood with the bowel motion. They can also pass down through the anal sphincter where they protrude, feeling like a whole bunch of grapes* (CWO-oznews) (see Ghesquière 2010 on the historical development of *whole* and related expressions).
8. Note here that *lot(s)* in synchronic data mostly appear with different semantics in the lexical head noun construction, namely referring to someone’s destiny, rather than the original sense referring to objects used to settle disputes or make decisions.
9. *AV* is a computer program that combines tools for classifying data and performing statistical analyses on them. It was developed by Dirk Speelman at the University of Leuven. For more information see <http://wwwling.arts.kuleuven.ac.be/genling/abundant>.
10. *The Ormulum* was most probably written between 1150 and 1200 by a monk named Orm. It is known especially for its idiosyncratic orthographical system and for introducing several metrical innovations that would inspire future English poets. Together with *Ancrene Wisse* and *The Ayenbite of Inwyt* it is one of the crucial texts to attest to the transition from Old English to Middle English (see Parkes 1983; <http://www2.english.su.se/nlj/ormproj/ormulum.htm>).

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Appendix

Table A1. Quantified collocational profile of *heap of*

<i>Heap of</i> (106)	Head	Quantifier	Ambiguous
	#	#	#
Animate	1	6	1
Concrete/count	23	2	6
Concrete/non-count	24	1	6
Abstract/count	/	11	1
Abstract/non-count	/	16	8
Total #	48	36	22
Total %	45.3%	34%	20.7%

Table A2. Quantified collocational profile of *heaps of*

<i>Heaps of</i> (90)	Head	Quantifier	Ambiguous
	#	#	#
Animate	1	8	/
Concrete/count	11	8	1
Concrete/non-count	15	5	/
Abstract/count	/	14	/
Abstract/non-count	/	25	2
Total #	27	60	3
Total %	30%	66.7%	3.3%

Table A3. Quantified collocational profile of *pile of*

<i>Pile of</i> (250)	Head	Quantifier	Ambiguous
	#	#	#
Animate	6	1	/
Concrete/count	146	/	4
Concrete/non-count	82	1	/
Abstract/count	/	1	5
Abstract/non-count	/	/	4
Total #	234	3	13
Total %	93.6%	1.2%	5.2%

Table A4. Quantified collocational profile of *piles of*

<i>Piles of</i> (165)	Head	Quantifier	Ambiguous
	#	#	#
Animate	2	/	/
Concrete/count	77	/	5
Concrete/non-count	69	1	7
Abstract/count	/	1	2
Abstract/non-count	/	/	1
Total #	148	2	15
Total %	89.7%	1.2%	9.1%

Table A5. Quantified collocational profile of *load of*

<i>Load of</i> (250)	Head	Quantifier	Ambiguous
	#	#	#
Animate	6	34	1
Concrete/count	15	33	2
Concrete/non-count	32	20	/
Abstract/count	/	16	1
Abstract/non-count	2	84	4
Total #	55	187	8
Total %	22%	74.8%	3.2%

Table A6. Quantified collocational profile of *loads of*

<i>Loads of</i> (250)	Head	Quantifier	Ambiguous
	#	#	#
Animate	3	48	/
Concrete/count	4	50	1
Concrete/non-count	8	35	2
Abstract/count	/	51	/
Abstract/non-count	/	48	/
Total #	15	232	3
Total %	6%	92.8%	1.2%

Table A7. Quantified collocational profile of *bunch of*

<i>Bunch of</i> (250)	Head	Quantifier	Ambiguous
	#	#	#
Animate	/	169	/
Concrete/count	26	16	/
Concrete/non-count	3	6	/
Abstract/count	/	21	/
Abstract/non-count	/	9	/
Total #	29	221	0
Total %	11.6%	88.4%	0%

Table A8. Quantified collocational profile of *bunches of*

<i>Bunches of</i> (49)	Head	Quantifier	Ambiguous
	#	#	#
Animate	/	/	3
Concrete/count	38	/	/
Concrete/non-count	8	/	/
Abstract/count	/	/	/
Abstract/non-count	/	/	/
Total #	46	0	3
Total %	93.9%	0%	6.1%

Table A9. Quantified collocational profile of *lot of*

<i>Lot of</i> (250)	Head	Quantifier	Ambiguous
	#	#	#
Animate	/	72	/
Concrete/count	1	34	/
Concrete/non-count	1	82	/
Abstract/count	/	18	/
Abstract/non-count	/	42	/
Total #	2	248	0
Total %	0.8%	99.2%	0%

Table A10. Quantified collocational profile of *lots of*

<i>Lots of</i> (250)	Head	Quantifier	Ambiguous
	#	#	#
Animate	1	51	/
Concrete/count	/	96	/
Concrete/non-count	1	51	/
Abstract/count	/	30	/
Abstract/non-count	/	20	/
Total #	2	248	0
Total %	0.8%	99.2%	0%

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