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Lexicalization, polysemy and loanwords in ANGER: A comparison with non-affective domains in Middle English

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Abstracts

English Français

This paper compares the Middle English lexis of ANGER with that of nine non-affective domains. We first investigate lexicalization, polysemy, replacement and retention, and then focus on semantic overlap between French / Latin loanwords in Middle English and their etyma. Results show that ANGER is more heavily lexicalized than other domains and individual lexemes within it are more polysemous. Turnover of vocabulary appears to be higher, but it was not the case that incoming loanwords caused existing native terms to shift or fall from use in large numbers. ANGER has similar proportions of loanword senses innovated in Middle English and they are much more likely to be figurative.

Cette contribution compare le lexique moyen anglais du domaine sémantique de la COLÈRE avec les lexiques de neuf autres domaines non-affectifs. Notre recherche se concentre premièrement sur la richesse lexicale par sens, la polysémie, et la rétention et le remplacement des termes. Puis, on examine l'étendue du chevauchement entre les sens des emprunts français / latins dans le moyen anglais et ceux des étymons dans les langues sources. Nos résultats montrent que, comparés aux autres domaines, les concepts de la COLÈRE sont plus lexicalisés et que les lexèmes sont plus polysémiques. Le taux de renouvellement du vocabulaire semble plus élevé mais les emprunts entrants ne provoquent pas le glissement sémantique ou l'obsolescence des termes natifs existants en grande quantité. Les emprunts dans le domaine de la COLÈRE ont des proportions similaires de sens innovés en moyen anglais et ceux-ci ont plus tendance à être figuratifs.



Index terms

Mots-clés : moyen anglais, emprunt lexical, lexicalisation, polysémie, domaines sémantiques

Keywords: Middle English, lexical borrowing, lexicalization, polysemy, semantic domains

Full text

1. Introduction

- 1 This paper reexamines results from several studies predominantly involving the language of everyday occupational domains in medieval England, and compares them with the lexis of ANGER, understood to be a domain expressing an emotion. As noted by Pons-Sanz [2022], the expression of anger in the Middle English period has been the subject of a great deal of scholarship (e.g., Gevaert [2007]; Diller [2014]). Much of this is devoted to understanding medieval conceptualizations of emotions, especially since the term *emotion* itself is not recorded in English until the sixteenth or early seventeenth centuries.¹ The problem pervades the entire semantic field of terms relating to emotions, as Gevaert observes: “the danger of anachronism always lurks and methods must be found to verify if the conceptualizations assigned to expressions make sense historically speaking” [2007: 31]. In the absence of a generally accepted definition, particularly with reference to the historical context, Pons-Sanz elects to make use of the classification in the *Historical thesaurus of English (HTE)*, though she makes the caveat that this methodology risks imposing a modern typology on the medieval data, since the *HTE* classification was designed to reflect the entire diachrony of English (cf. Sylvester, Marcus & Ingham [2017]).
- 2 This paper examines questions associated with the lexicalization of the semantic domains in our dataset of Middle English lexis (our dataset is described below). In the literature on the vocabulary of emotion, there is some discussion of expressions for ANGER. There is some scholarship which discusses the reasons for new expressions in this field. Gevaerts [2007: 194] considers the possibility that stylistic requirements might have played a role, concluding that, while it is difficult to be sure about the demands of alliteration, *anger* was not introduced for reasons of rhyme. She is interested in tracing semantic differences between *wrath* and *ire*, and *anger* but finds that it is not possible to draw distinctions that hold across writers in her corpus (e.g., Chaucer and Langland) and cites Klæber’s observation that the use of near-synonyms close together has the effect of neutralizing semantic differences between them. In this context we may note Weinreich’s suggestion that affective terms tend to lose their expressive force, creating a constant need for synonyms, what he terms an “onomastic low-pressure area” [1968: 58]. This idea is supported by our findings which show that ANGER is the most heavily lexicalized – and the only affective – domain in the corpus.
- 3 As detailed below, the lexical items in our dataset are tagged for language of origin. Our data shows that loanwords from French and / or Latin form a large proportion of the lexis below the headword ANGER, in particular in the densely lexicalized semantic categories from *HTE* such as **Anger, To make angry, and Indignation or resentment**.² It is possible that the combination of the density of lexicalization expected in an affective category, and the predominance of loanwords, may indicate continued bilingualism in the Middle English period.
- 4 Examining the non-literal expressions of ANGER, Gevaert suggests that “first attestations of a certain conceptualization can be considered transparent and motivated” [2007: 31], and that this also applies to new expressions showing the same conceptualization as those which have been in use for some time, since the conceptualization would not give rise to new, similar expressions if it were opaque [2007: 32]. Gevaert [2007: 188] concludes that metaphorical expressions are not as widespread as is assumed in cognitive linguistic scholarship. Our data, too, showed little evidence of the kinds of semantic shift we would expect at a time of high levels of lexical borrowing. In this context, we note the multilingual context of late medieval England,

and Weinreich's suggestions [1968: 58-59] about the need felt by bilingual speakers to borrow new terms. The notion of subjectivity has been proposed as an explanation for the mechanisms of semantic change (Traugott & Dasher [2001]), but though it seemed likely that an element of subjectivity would be found in a domain expressing strong emotion, despite our finding some differences between the lexis of ANGER and that of the other domains studied, in many respects the developments in the affective lexis mirrored those of the vocabulary in the domains of everyday life in medieval England.

5 The paper first sets out the data and methodologies employed in the study (Section 2). In Section 3, we examine the density of lexicalization in the ANGER domain and compare it with the other domains. This section also examines levels of polysemy in ANGER compared with that of terms in the other domains. We thus compare relative numbers of lexical items and then the number of semantic categories in which the terms in each of the domains is found. Section 4 is concerned with long-term retention of lexis in the ANGER domain; specifically, we examine outcomes for the earliest attested term in a semantic category when it is joined by one, two or three (near-)synonyms. Outcomes for native terms are compared with those for loanwords. Finally, in Section 5 we examine a set of loanwords in order to investigate the range of senses in the source language(s) that is borrowed into Middle English; how far polysemy and semantic development of loanwords in Middle English are matched in the source language(s); and to what extent new senses develop in Middle English after a loanword has been borrowed.

2. Datasets and methodologies

6 The following analyses are based on two datasets, one is used to examine lexicalization, polysemy and long-term retention of vocabulary; the other is used to investigate sense sharing across borrowing and source languages. In all cases, lexis relating to ANGER is compared with other, non-affective, domains.

2.1. Dataset 1

7 The first dataset consists of 5818 terms attested in Middle English between ca. 1100 and 1500 collated from ten semantic domains: BUILDING, DOMESTIC ACTIVITIES, FARMING, FOOD PREPARATION, MANUFACTURE, TRADE, TRAVEL BY WATER,³ HUNTING, MEDICINE,⁴ and ANGER. This last domain was added for the current project because it seemed likely to provide more figurative language to study than the other nine domains.⁵

8 The vocabulary was classified into 2400 semantic categories and subcategories taken from *HTE*. These were arranged in a semantic hierarchy with the most general (hypernymic) terms at the top of each section, and the most technical (hyponymic) senses at the bottom, e.g., **Emotion** above **Sudden access of emotion** in ANGER; **Stone / rock** above **Stone as material for paving**; **Animals** above **Domestic Animals** in FARMING; and **Providing / receiving food** above **Supplying food / catering** in FOOD PREPARATION.⁶ Two examples of hierarchy sections are given below, showing semantic categories from ANGER and FOOD PREPARATION with co-hyponyms listed underneath:

9 (1)

02. The mind

02.04. Emotion

blod c. 1275-1450+ *Old English*

talent c. 1330-1450 *Latin; Old French*

affeccioun c. 1390-1450 *Latin;Old French*

feling(e) c. 1395-1450+ *Old English*

sentement a. 1425 *Latin;Old French*

affect a.1425-1450+ *Latin*

desir c. 1425-c1430 *Old French*

.An emotion

passioun a. 1250-1450+ *Latin;Old French*

issue c. 1350-1450+ *Old French*

meving(e) a. 1382-1450+ *Old French;Anglo-French*

spirit a. 1382-1450+ *Latin;Old French;Anglo-French*

mocioun c. 1390-1450+ *Latin;Old French*

affeccioun c. 1390-1450 *Latin;Old French*

feling(e)#1 a. 1425-1450 *Old English*

.Principle / power of an emotion

spirit a. 1387-1450+ *Latin;Old French;Anglo-French*

.Sudden access of emotion

acces(se) c. 1384 *Latin;Old French*

10 (2)

01. The world

01.07. Food and drink

01.07.01. Food

01.07.01.21. Providing / receiving food

liveneth a. 1225-1340. ?*Old Scandinavian*

sustenance c. 1300-1450+ *Old French;Anglo-French*

feding a. 1387- c. 1450 *Old English*

norishing(e) c. 1387-1450+ *Old French*

ap(p)areilling c. 1390 *Old French*

refreshing(e) 1418-1450+ *Anglo-French*

incibacion ?a. 1425 *Latin*

provendringe a. 1450 *Anglo-French*

norishment 1450+ *Old French*

.Supplying food / catering

vitailing 1425-1450+ *Old French;Anglo-French*

advictailing 1435-1443 *Old French*

vitaillement 1450+ *Old French*

.Supplier of food / caterer

achatour 1240-1450+ *Old French;Anglo-French*

catourer 1281-1450+ *Anglo-French*

catour 1364-1450+ *Anglo-French*

vitailer c. 1380-1450+ *Old French;Anglo-French*

puveour a. 1400-1450+ *Anglo-French;Old French*

- 11 The etymology and dates of attestation during the Middle English period were recorded for each lexical item. This allows the gathering together of various types of data for each semantic category: how many words are used to express a particular sense in Middle English, the monosemy or polysemy of individual terms within the corpus and whether they undergo semantic shift, and the proportions of native terms and loanwords overall and at specific levels of the hierarchy.⁷ A selection of these semantic categories containing two, three or four co-hyponyms recorded in use in Middle English are examined to compare long-term survival rates (see Section 4).

2.2. Dataset 2

- 12 The second dataset consists of a subset of 100 French and Latin loanwords selected from the 1759 borrowings from French and / or Latin in our corpus.⁸ Crucially, in these cases, all Middle English senses of the loanwords were recorded, regardless of the original semantic domain.⁹ The criteria used for selection mean that *hapax legomena* and highly polysemous borrowings are not included in this dataset. This ensures, first, that there is sufficient evidence of each borrowing's use in Middle English; and, secondly, that semantic overlap with the source languages for polysemous loanwords could be reliably examined and quantified. With these two requirements in mind, it was decided that:

- Each loanword must have between 1 and 8 senses recorded in Middle English-matrix citations before ca. 1450;
- At least one sense must be recorded in at least three Middle English-matrix citations;
- Remaining senses must be recorded in at least one Middle English-matrix citation.¹⁰

- 13 These factors meant that it was not possible to ensure an even breakdown of ten loanwords from each of the ten original domains; however, all domains are represented in the loanword subset. Similarly, the distribution of source languages does not exactly mirror that of the main corpus, but the basic proportions are the same with the majority of etyma being tagged as French (73%), followed by French and / or Latin (21%), and then Latin (6%) as shown in Table 1, below.¹¹

Table 1. Original domains and source language(s) of the 100-loanword subset

Original semantic domain	No. of senses of loanword in ME		Source language(s) of loanword			Total no. loanwords	Examples
	Monosemes	Polysemes	French	French and / or Latin	Latin		

ANGER	1	12	7	6	0	13	<i>irour</i> <i>frounen</i>
BUILDING	2	6	6	2	0	8	<i>carpentrie</i> <i>founden</i>
DOMESTIC ACTIVITIES	2	5	5	1	1	7	<i>fildor</i> <i>beverage</i>
FARMING	4	7	9	2	0	11	<i>cracche</i> <i>jument</i>
FOOD PREPARATION	1	3	4	0	0	4	<i>endoren</i> <i>viaund(e)</i>
HUNTING	1	6	6	1	0	7	<i>bugle</i> <i>les(se)</i>
MANUFACTURE	1	8	8	0	1	9	<i>cade</i> <i>foil</i>
MEDICINE	2	11	5	5	3	13	<i>opium</i> <i>phisicien</i>
TRADE	1	9	7	2	1	10	<i>aquitaunce</i> <i>eschaunge</i>
TRAVEL BY WATER	2	4	6	0	0	6	<i>barge</i> <i>cable</i>
2+ of the above domains¹²	2	10	10	2	0	12	<i>pelur(e)</i> <i>furnais(e)</i>
Total	19	81	73	21	6	100	

14 Once the 100 loanwords had been selected, senses in French / Latin recorded before ca. 1450 were also collated using the relevant historical dictionaries.¹³ Notes on attestation and obsolescence dates for each sense, text type and figurative use were also documented. To allow analysis of polysemic overlap, a “sense summary” was created for each loanword which maps the senses in all the languages onto a common framework using the semantic categories of the *HTE*. This allows us to identify which senses are borrowed from French / Latin, and which have developed independently in Middle English following the adoption of the loanword. Two examples of these summaries are given below for the loanwords *peutre* (from MANUFACTURE) and *disdein(e)* (from ANGER):

15 (3) Loanword sense summary for *peutre*

MED [s.v. <i>peutre</i>] < OF <i>peautre</i> , <i>peutre</i> , <i>peaultre</i> & ML <i>peutrum</i> , <i>peautrum</i> , <i>peltrum</i> .		OED3 [s.v. <i>pewter</i>] < AF <i>peutre</i> and MF <i>peautre</i>			
HTE senses:	ME 1348- 1450+	BML c. 1227- 1450+	AF c. 1292- 1416	CF c. 1195- 1450+	
Sense 1: Pewter (< Alloy)	X	X	X	X	

Sense 2: Alloy of gold and silver [electrum] (< Alloy of precious metals)	X			
Sense 3: Zinc (< Base metal)		X		
Number of shared senses between ME and source language(s):	1 of 3; One of Some			
Native senses found only in ME:	1 = Alloy of gold and silver [electrum]			
Figurative language:	None			

16 In the first example, the French loanword *peutre* is polysemous in Middle English and has two senses recorded in Middle English-matrix texts by 1450. The first sense ('pewter, an alloy of tin and lead') is borrowed from French and is recorded in Middle English, Anglo-French (AF), Continental French (CF) and British Medieval Latin (BML). However, the second ('alloy of gold and silver, also known as *electrum*') is only found in Middle English and so it is categorized as "native".¹⁴ A third sense of the loanword ('zinc') is only recorded in British Medieval Latin.¹⁵ Of the three senses, only one is shared between Middle English and the donor language – hence this loanword is tagged "One of Some". The full typology for categorizing semantic overlap is given in Section 4, below.

17 (4) Loanword sense summary for *disdein(e)*

MED [s.v. <i>disdein(e)</i> < OF <i>desdeigne</i>	OED2 [s.v. <i>disdain</i>] < OF <i>desdeign</i> , <i>-daign</i> , <i>-daing</i> , <i>-dain</i> , AF <i>dedeigne</i>			
HTE senses:	ME c. 1300-1450+	BML s. xii-s. xv	AF s. xiiex-s. xivin	CF c. 1170-1450+
Sense 1: Contempt (< Attention and judgement)	X	X	X	X
Sense 2: Action of expressing contempt (< Contempt)	X			
Sense 3: Object of contempt (< Condition of being held in disesteem / contempt)	X			
Sense 4: Indignation or resentment (< Anger)	X			X
Sense 5: Inflammation (< A disease)	X			
Sense 6: Loathing or detestation (< Hatred)	X		X	
Number of shared senses between ME and source language(s):	3 of 6; Some			
Native senses found only in ME:	3 = Action of expressing contempt; Object of contempt; Inflammation			
Figurative language:	Metonymy: Action of expressing contempt; Object of contempt			

Metaphor: Inflammation ('angriness / irritation of wound')
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18 In the second example, the French loanword *disdein(e)* is also polysemous and is recorded in a total of six senses in Middle English by 1450. There are three senses which are shared between the borrowing and donor languages out of a total of six: the earliest sense, 'contempt' (which is also recorded in British Medieval Latin), followed by 'indignation or resentment', and 'loathing or detestation'. The loanword is therefore categorized as "Some" for semantic overlap. Three further senses appear to have developed independently in Middle English following the borrowing of the loanword and they all involve figurative language: the metonymic extensions 'action of expressing contempt' and 'object of contempt', and the metaphorical 'inflammation', used to describe the anger or irritation of a wound.¹⁶

3. Lexicalization and polysemy

3.1. Lexicalization

19 As noted above, the hierarchy corpus (i.e. Dataset 1) totals 5818 words, arranged under 2400 semantic categories. Of these, 542 words arranged under 93 sense categories belong to the domain of ANGER. When compared to the other domains, it is immediately noticeable that ANGER is the most heavily lexicalized domain in the corpus: the average number of co-hyponyms per semantic category is 5.8, compared to 2.4 for the corpus. This contrasts sharply with the other nine domains which all have very similar levels of lexicalization, as shown in Table 2.

Table 2. Average number of lexical items per semantic category across the ten domains

Domain	Lexical items	Semantic category	Average lexical items per sense
ANGER	542	93	5.8
BUILDING	673	309	2.2
DOMESTIC ACTIVITIES	395	172	2.3
FARMING	929	395	2.4
FOOD PREPARATION	342	144	2.4
HUNTING	481	243	2.0
MANUFACTURE	634	331	1.9
MEDICINE	826	300	2.8
TRADE	535	234	2.3
TRAVEL BY WATER	461	179	2.6
Corpus	5818	2400	2.4

20 When we look at the distribution of number of lexical items per sense in more detail, we see that ANGER is similar to the main corpus in that, in both cases, roughly a third of categories have between two and four words each (34% of ANGER compared to 37% overall). However, the domain has significantly fewer single-item senses (31% of ANGER

compared to 52% overall) and more senses with five or more words per sense (34% of ANGER compared to 11% overall), as shown in Table 3.

Table 3. Distribution of number of words per sense, corpus vs. ANGER

Number of words per sense	Corpus No.	%	ANGER No.	%
1	1247	52%	29	31%
2 to 4	886	37%	32	34%
More than 5	267	11%	32	34%
5 to 10	217	9%	16	17%
11 to 20	40	2%	11	12%
More than 20	10	< 0.5%	5	5%
Total	2400	100%	93	100%

21 Only a tiny majority of semantic categories (less than 0.5%) in the project hierarchy have more than twenty co-hyponyms. However, five out of these ten “super-lexicalized” senses belong to the domain of ANGER: **Anger**; **Furious anger**; **To make angry**; **Indignation or resentment** and **To be / become furious / rage**. The remaining five domains are BUILDING (which contributes three highly lexicalized semantic categories), MEDICINE, and DOMESTIC ACTIVITIES. Table 4a sets out this information together with the languages of origin of the co-hyponyms.

Table 4a. Ten most lexicalized semantic categories in the dataset and languages of origin of co-hyponyms

Domain and semantic category	No. of words	Old English	Old Norse	French	French and / or Latin	Latin	Other ¹⁷
ANGER Anger (n.)	47	19	6	14	6	0	2
BUILDING To build and construct (v.)	41	23	4	6	3	1	4
MEDICINE To heal / cure (v.)	40	19	1	8	9	3	0
ANGER Furious anger (n.)	38	21	5	6	5	0	1
DOMESTIC ACTIVITIES Clothing (n.)	32	9	1	20	2	0	0
ANGER To make angry (v.)	31	16	2	8	4	0	1
BUILDING Wooden beam or timber (n.)	27	14	1	5	2	1	4
ANGER	25	5	2	12	4	0	2

Indignation or resentment (n.)							
BUILDING Wooden board or plank (n.)	23	11	1	2	2	0	7
ANGER To be / become furious / rage (v.)	21	12	1	6	0	0	2

22 It is also important to note that all these super-lexicalized senses are found at the top two hypernymic levels of the relevant sections of the hierarchy. This is to be expected as analysis of the wider corpus has shown a clear inverse correlation between the number of lexical items per semantic category and specificity of sense / technicality (Sylvester, Tiddeman & Ingham [2020: 20-22]).

23 When we examine the distribution of native and non-native terms, it can be seen that loanwords form a sizeable proportion of the lexis for these five highly lexicalized semantic categories in **ANGER**. Twenty out of forty-seven co-hyponyms found in the category **Anger** are borrowings from French and / or Latin (e.g., *felonie*, *folie*, *impacience*, *ire*, *irour*, *jelouste*, *spit(e)*, *offense*), as are twelve out of thirty-one in **To make angry** (e.g., *achaufen*, *encensen*, *enticen*, *exciten*, *greven*, *meven*, *noien*, *provoken*), and sixteen out of twenty-five in **Indignation or resentment** (e.g., *despit*, *disdeine(e)*, *displesir*, *grevauunce*, *grucched*, *indignacioun*, *maugre*, *rancour*). Indeed, in this last example, French-origin terms outnumber native ones (twelve compared to five) which occurs for only one other semantic category: this is **Clothing**, where twenty out of a total of thirty-two co-hyponyms are French loanwords (e.g., *amiture*, *ap(p)areil*, *atir*, *arrai*, *coverture*, *habit*, *raiment*, *vestment*) compared to only nine native terms. This category (from DOMESTIC ACTIVITIES) is one where scholars would traditionally expect to find a high proportion of (Anglo)-French borrowings but, as Ponz-Sanz [2022: 366-367] points out, the field of EMOTION contains a surprisingly substantial amount of French-derived terms, and the ANGER subfield, in particular, “an interesting amalgamation of native, French- and Norse-derived words”. Terms classed as Old Norse in our corpus,¹⁸ which appear under these vocabulary-rich senses in Table 4a, include *anger*, *angren*, *brathe eggen*, *greme*, *ournen thro*, and *sit(e)*.

24 Table 4b shows the percentages of categories for the super-lexicalized senses when they are condensed into their four domains of origin. Those located within the subfield of ANGER (28.4%) come second after DOMESTIC ACTIVITIES (62.5%) in proportions of French borrowings, but ahead of MEDICINE (20.0%) and BUILDING (17.8%). Whilst this provides only a snapshot of the domains in question (and two of the domains are represented by a single semantic category), it is worth noting that these proportions are much closer to each other when we look at French borrowings across all semantic categories in these domains: ANGER (19.2%); DOMESTIC ACTIVITIES (21.0%); MEDICINE (18.6%); BUILDING (17.5%).¹⁹ This suggests that, while the super-lexicalized senses in MEDICINE and BUILDING are representative of these wider individual domains in terms of French loanwords, the five semantic categories in ANGER (**Anger**; **Furious anger**; **To make angry**; **Indignation or resentment** and **To be / become furious / rage**) and one from DOMESTIC ACTIVITIES (i.e., **Clothing**) have especially high percentages of French terms amongst the numerous co-hyponyms attested in the late medieval period.

Table 4b. Ten most lexicalized semantic categories condensed by domain and languages of origin of co-hyponyms

Domain	Total no. Of words	Old English	Old Norse	French	French and / or Latin	Latin	Other
	No.	No.	No.	No.	No.	No.	No.

ANGER (5 semantic categories)	162	73	16	46	19	0	7
BUILDING (3 semantic categories)	91	48	6	13	7	2	15
DOMESTIC ACTIVITIES (1 semantic category)	32	9	1	20	2	0	0
MEDICINE (1 semantic category)	40	19	1	8	9	3	0
	%	%	&	%	%	%	%
ANGER (5 semantic categories)	100%	45.1%	9.9%	28.4%	11.7%	0.0%	4.3%
BUILDING (3 semantic categories)	100%	52.7%	8.2%	17.8%	9.6%	2.7%	20.5%
DOMESTIC ACTIVITIES (1 semantic category)	100%	28.1%	3.1%	62.5%	6.3%	0%	0%
MEDICINE (1 semantic category)	100%	47.5%	2.5%	20.0%	22.5%	7.5%	0%

3.2. Polysemy

25 We now turn to senses per word in Dataset 1, rather than words per semantic category. It was found that individual terms in ANGER are also more likely to be polysemous when compared to those in the corpus as a whole. Table 5 shows these results; note that this analysis was restricted to senses recorded within the ten semantic domains and does not include all senses recorded for each word in the Middle English period (as opposed to the loanword study which follows in Section 4.).

Table 5. Number of times each word appears under difference semantic categories within the corpus and within ANGER

Occurrence(s) of word in dataset	Corpus			ANGER		
	No. of words	Total no. of words	% of total	No. of words	Total no. of words	% of total
1 time	3649	3649	62.7%	269	269	49.6%
2 times	630	1260	21.7%	72	144	26.6%
3 times	158	474	8.1%	18	54	10.0%
4 times	66	264	4.5%	10	40	7.4%

5 times	25	125	2.1%	4	20	3.7%
6 times	4	24	0.4%	0	0	0%
7 times	2	14	0.2%	1	7	1.3%
8 times	1	8	0.1%	1	8	1.5%
Total	4535	5818	100%	375	542	100%

26 63% of words in the corpus appear only once in a single semantic category, compared to 50% of words in ANGER. This means that 37% of words in corpus are polysemous (i.e., repeated in 2 to 8 additional semantic categories in the dataset), compared to 50% for ANGER. It can also be seen that most words occur between one and five times in the dataset; with only seven out of 4535 individual words (less than 1%) occurring between six to eight times.

27 These words are given in Table 6. ANGER includes the most polysemous native word in the dataset, as well as the most polysemous non-native word. These are *wratthe*, which is found in eight semantic categories (**Anger, Act done in anger, Fit(s) / outbursts of anger, Furious anger, Furious anger personified, Fury of the deity, Instance / fit of furious anger, Act done in indignation**), and the French borrowing, *greven*, which is found in seven semantic categories (**Be angry, Become angry, Be angry at / with, Make angry, Be / become furious / rage, Infuriate, Excite to indignation / resentment**). Note that this is the only loanword amongst these seven highly polysemous words, the other six are all of Old English-origin: *iren*, *ston*, *beten*, *washen* and *stagge*.

Table 6. Most polysemous words in the dataset

Word	Occurrences of word in dataset	Domain(s)
<i>wratthe</i> (n.)	8	ANGER
<i>greven</i> (v.)	7	ANGER
<i>iren</i> (n.)	7	FARMING, FOOD PREPARATION, MANUFACTURE, MEDICINE
<i>ston</i> (n.)	6	BUILDING, MANUFACTURE
<i>beten</i> (v.)	6	DOMESTIC ACTIVITIES, HUNTING, MANUFACTURE, MEDICINE
<i>washen</i> (v.)	6	DOMESTIC ACTIVITIES, FOOD PREPARATION, MANUFACTURE, MEDICINE
<i>stagge</i> (n.)	6	FARMING

28 Therefore, semantic categories in ANGER are more likely have numerous co-hyponyms when compared to the corpus average, but individual words in this domain are also more likely to be polysemous and appear within several semantic categories.

4. Long-term retention of lexis

29 The next set of results investigates the long-term outcomes for a selection of lexemes in ANGER recorded in Middle English to see if the widespread influx of (mainly) French borrowings prompted a large-scale replacement of existing terms. The investigation is

an extension of an earlier study in which 1606 words from nine domains, divided into 453 2-item senses, 100 3-item senses, and 100 4-item senses (labelled as lexical pairs, trios and quads) are analysed (Sylvester, Tiddeman & Ingham [2022a]). That study found that, while replacement did occur when new terms entered into a semantic space, it was rarer than expected and certainly did not represent the accepted view of extensive relexification of English. The present paper examines the pairs, trios and quads relevant to ANGER which have since been added to Dataset 1, and compares outcomes with the main results of the nine-domain study.

30 There are thirty-two semantic categories in ANGER which have two, three or four co-hyponyms attested before 1500. This accounts for a third (34%) of the ninety-three semantic categories across the domain, almost the same total proportion of lexical pairs, trios and quads as found across the nine-domain corpus (a total 839 out of 2307 categories, i.e., 36%). Of these thirty-two semantic categories, one (**Other types of anger**) was excluded because the terms involved were co-hyponyms rather than synonyms, and a further nine were excluded because there was less than 25 years between the attestation of Term 1 and Term 2.²⁰ This was to mitigate problems inherent in the use of dictionary citations as the basis for deciding whether one of two terms replaces the other (cf. Sylvester, Tiddeman & Ingham [2022a: 254]). The remaining data from ANGER consists of twenty-two semantic categories (eight pairs, ten trios and four quads) and a total of sixty-two words. This is a small sample compared to the nine-domain corpus but overall, it still allows us to obtain a general idea of Term 1 retention in the domain.

31 The following typology (a condensed version of the one devised in Sylvester, Tiddeman & Ingham [2022a]) was used to categorize long-term semantic outcomes with the focus being on the earliest attested term (Term 1) in the group of two, three or four co-hyponyms. Examples of outcomes in each case are given from ANGER and from a selection of the other nine domains:

Type 1: Replacement

32 Term 1 drops out of use in a particular sense (relevant to our domains) before the Present-Day English period (PDE) ²¹following the arrival of incoming terms (Terms 2-4) during the Middle English period.²² At least one of Terms 2-4 remains in use until Present-Day English.

Pairs	<p>ANGER: Action of raging <i>graming</i> (a. 1225) is replaced by <i>raging</i> (ca. 1300–PDE)</p> <p>MEDICINE: To make small incisions <i>garsen</i> (a. 1398–16th c.) is replaced by <i>scarifien</i> (?a. 1425–PDE)</p>
Trios	<p>ANGER: One who / that which irritates <i>flie</i> (c. 1230–17th cent.) is replaced by <i>prik(e)</i> (ca. 1386–PDE) and <i>terr(er)e</i> (a. 1425–1440) also falls out of use.</p> <p>FOOD PREPARATION: Art of cooking <i>curie</i> (a. 1387–16th cent.) is replaced by <i>cokerie</i> (a. 1393–PDE) and <i>kichen(e)</i> (c. 1400) also falls out of use</p>
Quads	<p>ANGER: To speak angrily <i>speken with onde</i> (a. 1275) is replaced by <i>ragen</i> (a. 1499–PDE) and <i>blusteren</i> (c. 1422–PDE) and <i>speken with passioun</i> (ca. 1454) also falls out of use.</p> <p>FARMING: Young pig <i>faren</i> (OE–14th cent.) is replaced by <i>pigge</i> (a. 1250–PDE), <i>grice</i> (ca. 1230–PDE) and <i>hogling</i> (1377–PDE)</p>

Type 2: Failed replacement / retention

- 33 Term 1 is joined by incoming terms (Terms 2-4) in a particular sense during the Middle English period, all or some of which then drop out of use before the Present-Day English period.

Pairs	<p>ANGER: Angry speech</p> <p><i>misword</i> (ca. 1225–PDE) is not replaced by <i>crabbednes(se)</i> (ca. 1450)</p> <p>MANUFACTURE: Glass / crystal vessel</p> <p><i>glas</i> (ca. 1230–PDE) is not replaced by <i>vitre</i> (ca. 1450–16th cent.)</p>
Trios	<p>ANGER: Heat of anger</p> <p><i>fir</i> (ca. 1340–PDE) is not replaced by <i>swelme</i> (ca. 1400–1450) or by <i>ferventnes(se)</i> (ca. 1450)</p> <p>DOMESTIC ACTIVITIES: Cider</p> <p><i>sider</i> (ca. 1350–PDE) is not replaced by <i>pommade</i> (ca. 1400) or by <i>pomis</i> (ca. 1450)</p>
Quads	<p>ANGER: To frown / scowl at</p> <p><i>louren</i> (ca. 1300–PDE) remains in use and is joined by <i>gloumen on</i> (a. 1425–PDE) but <i>bilouren</i> (ca. 1390) and <i>scoulen on</i> (ca. 1451–16th cent.) fall from use</p> <p>HUNTING: Bird-lime</p> <p><i>lim</i> (OE–PDE) remains in use and is joined by <i>visc</i> (?a. 1425–PDE) and <i>brid-lim</i> (a. 1425–PDE) but <i>gleu</i> (ca. 1400–18th cent.) falls out of use</p>

Type 3: Long-term synonymy

- 34 Term 1 is joined by incoming terms (Terms 2-4) in a particular sense during the Middle English period. All terms go on to exist as (near) synonyms until the Present-Day English period.

Pairs	<p>ANGER: To make sour / bitter</p> <p><i>bitt(e)ren</i> (ca. 1225–PDE) remains in use alongside <i>souren</i> (a. 1393–PDE)</p> <p>MANUFACTURE: Wire-maker / worker</p> <p><i>wir-drawer(e)</i> (1368–PDE) remains in use alongside <i>wir-smith</i> (1438–PDE)</p>
Trios	<p>ANGER: No instances of this outcome in the sample</p> <p>FARMING: Plough</p> <p><i>sulou</i> (OE–PDE) remains in use alongside <i>plough</i> (ca. 1175–PDE) and <i>sul</i> (a. 1225–PDE)</p>
Quads	<p>ANGER: No instances of this outcome in the sample</p> <p>TRADE: Group / body of merchants</p> <p><i>gild(e)</i> (OE–PDE) remains in use alongside <i>hanse</i> (a. 1135–PDE), <i>compaignie</i> (1389–PDE) and <i>livere</i> (a. 1422–PDE)</p>

Type 4: Semantic shift

- 35 Term 1 is joined by incoming terms (Terms 2-4) in a particular sense during the Middle English period. One or all of the terms then undergoes semantic change through narrowing, broadening or metonymy prior to 1500.

Pairs	<p>ANGER: Grudge</p> <p><i>envie</i> (ca. 1300–15th cent.) is joined by <i>querele</i> (1340–PDE); <i>envie</i> undergoes metonymic shift to mean ‘an instance of this feeling’ (a. 1393)</p> <p>DOMESTIC ACTIVITIES: Brush / broom</p>
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	<i>besom</i> (ca. 1000–?19th cent.) is joined by <i>brom</i> (1346–PDE); <i>besom</i> narrows to mean 'broom made of specific material, e.g., the plants, broom or birch' (ca. 1400–19th cent.)
Trios	ANGER: No instances of this outcome in the sample BUILDING: Cement / mortar <i>lim</i> (OE–PDE) is joined by <i>morter</i> (a. 1300–PDE) and <i>ciment</i> (ca. 1330–PDE); <i>morter</i> broadens to mean 'any substance that resembles or serves a similar purpose to mortar esp. plaster' (1440–PDE)
Quads	ANGER: No instances of this outcome in the sample FARMING: Domestic fowl collectively <i>foul</i> (1131–PDE) is joined by <i>pullain</i> (1329–19th cent.), <i>pultrie</i> (1372–PDE) and <i>polaille</i> (ca. 1400–17th cent.); <i>pultrie</i> undergoes metonymic shift to mean 'place where domestic fowl are sold' (1423–PDE, now exists in place names only)

Type 5: Hapaxes

36 All terms are hapaxes in a particular sense, attested once or in a single text during the Middle English period.

Pairs	ANGER: No instances of this outcome in the sample MEDICINE: Sharp / pointed instrument <i>pointel</i> (?a. 1425) and <i>radie</i> (?a. 1425)
Trios	No instances of this outcome in the sample
Quads	No instances of this outcome in the sample

37 Tables 7a and 7b show the distribution of outcome type across the 2-item, 3-item and 4-item semantic categories in the nine-domain corpus, and across ANGER.

Table 7a. Number and percentage of semantic outcomes across nine-domain corpus

Outcome:	Type 1	Type 2	Type 3	Type 4	Type 5	Total
Pairs	93	193	127	22	18	453
Trios	30	59	7	4	0	100
Quads	32	53	10	5	0	100
Total	155	305	144	31	18	653
	24%	47%	22%	5%	3%	100%

Table 7b. Number and percentage of semantic outcomes across ANGER

Outcome:	Type 1	Type 2	Type 3	Type 4	Type 5	Total
Pairs	1	5	1	1	0	8
Trios	3	7	0	0	0	10
Quads	2	2	0	0	0	4
Total	6	14	1	1	0	22
	27%	64%	4.5%	4.5%	0%	100%

38 A key result is that, as in our previous study, Type 2 (Term 1 remains in use and is not replaced upon the arrival of incoming terms into the semantic space) is the most

common scenario. However, the proportion of outcomes categorized as Type 2 is considerably higher in ANGER than it is for the nine-domain corpus: 64% Type 2 outcomes compared to 47%. Type 1 outcomes (Term 1 is replaced by one or more incoming terms) is roughly the same: 24% for the 9-domain corpus and 27% for ANGER. Similarly, outcomes involving narrowing, broadening and metonymy (Type 4) are rare in both sets of data, accounting for only 5% in both cases.²³ Finally, Type 3 outcomes (where all terms remain in use as synonyms) are much less prevalent in ANGER making up only 5% of outcomes, as opposed to 22% for the nine-domain corpus. This indicates higher levels of redundancy of incoming terms in ANGER as suggested by Weinreich [1968: 58].

39 Next, only the three main outcomes are considered, Types 1, 2 and 3, which account for 93% of results in the nine-domain corpus and 96% of those in ANGER. These results are given in Tables 8a and 8b and are divided into two subgroups based on whether Term 1 in each pair, trio or quad is native or a loanword. For example, in the lexical trio *quaken / resen / tremblen* ('to shake with anger'), Term 1 is native (and in this case, Terms 2 and 3 are loanwords) whereas in *gref / displeasaunce / displesir* ('cause of indignation'), Term 1 is a French borrowing (as are Terms 2 and 3).²⁴

Table 8a. Main outcomes across nine-domain corpus based on language of origin of Term 1

Outcome	Type 1	Type 2	Type 3	Total
Term 1 Native	82 23% [Native term replaced by loanword = 56]	182 52%	87 25%	351 100%
Term 1 Loanword	73 29%	123 49%	57 23%	253 100%
Total	155 26%	305 50%	144 24%	604 100%

Table 8b. Main outcomes across ANGER based on language of origin of Term 1

Outcome	Type 1	Type 2	Type 3	Total
Term 1 Native	5 33% [Native term replaced by loanword = 3]	9 60%	1 7%	15 100%
Term 1 Loanword	1 17%	5 83%	0 0%	6 100%
Total	6 28%	14 67%	1 5%	21 100%

40 Once again, the main results from the nine-domain study are replicated in the domain of ANGER. The latter sample is small compared to the former, as we have noted, but similar overall patterns can be discerned. In both datasets, Type 2 (failed replacement) is the most common outcome, regardless of whether the existing term (Term 1) is native or non-native. It can also be seen in both cases that borrowed Term 1s are more likely to be replaced by incomers (Type 1 outcome) than native Term 1s: the replacement rates for existing terms of Old English origin is 23% compared to 29% for existing terms which are loanwords in the nine-domain corpus, and 33% compared to 17% in ANGER. These figures suggest that the key findings of our previous study are replicated in an affective domain: rather than a widespread ousting of native terms by newly arrived loanwords in the Middle English period, such replacement is relatively rare. Out of a total 351 cases in the larger dataset where Term 1 is native, the latter is

eventually replaced by (an) incoming loanword(s) in only fifty-six cases (16%): e.g., native *breden* is replaced by borrowed *frien* ('to fry'); out of the fifteen instances in ANGER where Term 1 is native, replacement by loanword(s) occurred in three cases (20%): e.g., native *speken with onde* is replaced by *ragen* and *blusteren* ('to speak angrily').

5. Loanwords and sense sharing

41 The final section of analysis examines 100 French / Latin loanwords in all their senses (i.e. Dataset 2) to investigate whether there are any differences in the rates of sense innovation in Middle English between loanwords selected from the domain of ANGER (such as *disdein(e)*, *feruour*, *frounen*, *irour*, *impacience*, *ire*, *maltalent*, *rancour*) and those from the other nine non-affective domains (such as *cisours*, *endoren*, *gleu*, *keie*, *retail(e)*, *restoracioun*, *sicamour(e)*, *phisik(e)*).

42 As noted above, the 100 loanwords include nineteen monosemes and eighty-one polysemes recorded in Middle English-matrix sources by 1450. Polysemes range from 2-sense to 8-sense loanwords recorded in 1808 citations, with a total of 327 senses overall in the dataset. ANGER accounts for one monosemic loanword, twelve polysemic loanwords, totalling 384 citations and fifty-three senses, as shown in Table 9.²⁵ It should also be noted that the loanwords selected are not 'lexical rarities' and seventy-four loanwords from of the non-affective corpus (74%) and ten from ANGER (77%) are still attested in Present-Day English in at least one sense.

Table 9. Number of words, senses and citations in the 100-loanword corpus and in ANGER

	Corpus			ANGER		
	No. of words	No. of senses	No. of citations	No. of words	No. of senses	No. of citations
1 sense	19	19	97	1	1	3
2 senses	22	44	291	4	8	55
3 senses	15	45	247	0	0	0
4 senses	17	68	363	2	8	72
5 senses	18	90	419	3	15	79
6 senses	4	24	123	1	6	55
7 senses	3	21	131	1	7	53
8 senses	2	16	137	1	8	67
Total	100	327	1808	13	53	384

43 As detailed in the Section 2.2., Dataset 2 was created to trace the semantic development of loanwords in Middle English and to compare their meanings with those in French and Latin. Smaller studies by Durkin & Allan [2016], Durkin [2018] and Ingham [2021 and this volume] have found that cases of polysemy are nearly always mirrored between English and the source language. Our 100-loanword analysis

provided similar results. The loanwords relating to ANGER pattern similarly, as can be seen in Table 10. In the eighty-one cases where the word is a polyseme in Middle English, the word is also a polyseme in French / Latin in seventy cases, so there is a match rate of 96%. Similarly, all twelve polysemic loanwords in ANGER are also polysemes in the source language(s).

Table 10. Number of Middle English loanwords which match source language(s) in terms of polysemy

Loanword is:	Corpus	ANGER
Monosemous in source language(s) and in ME	10	0
Polysemous in source language(s) and in ME	78	12
Monosemous in source language(s) and polysemous in ME	3	0
Polysemous in source language(s) and monosemous in ME	9	1
Total	100	13

44 Next, we move beyond a binary monosemous / polysemous comparison and investigate the extent of semantic overlap between Middle English and the donor languages. This was achieved using the sense summaries compiled for each loanword (see examples in the Methodology section) which record whether individual senses were present in Middle English, French and Latin. The following categories were then devised to label sense-sharing scenarios:

- *One of one*: the loanword has only one recorded sense and it is shared between Middle English and the source language(s): e.g., *keie* has one sense ('wharf / quay') recorded in French, Latin and Middle English.
- *One of some*: the word has one sense shared between Middle English and source language(s), and the total number of recorded senses is more than one: e.g., *irour* has one sense ('anger') shared between French and Middle English but two additional senses ('hatred' and 'distress') recorded only in French.
- *Some*: the word has two or more senses shared between Middle English and the source languages(s): e.g., *rosari(e)* has four senses shared between Latin and ME ('rose-garden'; 'place of supreme happiness'; 'encyclopaedic work'; and 'specific false coin') but an additional sense ('pattern of flowers') recorded only in Latin.
- *All*: Middle English shares all the senses found in the source language(s): e.g., *sirup* has two senses ('syrup or linctus [medicinal]' and 'syrup [culinary]'), both recorded in French, Latin and Middle English.
- *None*: None of the senses found in the source languages(s) are found in Middle English (i.e., Middle English only has recorded senses of the word which are unique): e.g., *disjoint(e)* has two senses ('predicament or straits' and 'great manifestation of feeling') which are recorded in Middle English only. The original sense ('disjunction, disunion or disconnection') is found in French / Latin but is not recorded in Middle English.²⁶

45 Once again, loanwords in ANGER exhibit the same characteristics as those found across the other domains. As results in Table 11 show, complete semantic overlap is rare in the corpus (only ten out of eighty-one Middle English polysemes in the corpus share all their senses with the source languages, i.e., 12%), and non-existent in ANGER at 0%.

Table 11. No. of semantic overlap scenarios in the corpus and in ANGER

Semantic overlap	Corpus	ANGER
All	10	0

Some	62	10
One of one	7	0
One of some	19	2
None	2	1
Total	100	13

46 When senses do not match up (which occurs in the majority of cases), it is either because the loanword has senses in the donor languages which are not borrowed into Middle English, or because new native senses develop independently in Middle English following the adoption of the loanword into the language.

47 The final section of analysis considers homegrown loanword senses: e.g., *disdein(e)* ('action of expressing contempt'); *disjoint(e)* ('great manifestation of feeling'); *gleu* ('bitumen / pitch'), *gruel* ('poultice'); *pipin* ('type of apple'); *quirre* ('bag / collection of game'); *sclice* ('surgical probe'); *turnour* ('basket-maker'). It was found that the percentage of senses unique to Middle English (i.e., not attested in French and / or Latin) is nearly the same when ANGER was compared to the 100-loanword corpus: i.e., roughly one in five senses recorded in Middle English for a loanword is categorized as native. This accounts for seventy-one out of 327 senses (22%) of senses for the corpus and ten out of 53 (19%) for ANGER.

48 However, as Table 12 shows, 100% of native senses in ANGER are either metaphors or metonyms, compared to 60% for the corpus, with the metaphor rate being particularly high at 70%),²⁷ compared to just 30% for the corpus. Examples of native metaphors from ANGER in the dataset include *fevour* ('inflammation' < 'furious anger'), *frounen* ('to present a gloomy aspect [of inanimate object]' < 'to frown'), *noli me tangere* ('ill-tempered person' < 'eruptive disease'); and *raumpen* ('to be / become furious' < 'to rise up on the hind legs'). Examples of native metaphorical senses from other non-affective domains include *caudel* ('sloppy food' < 'caudle'); *dauben* ('to soil' < 'to plaster'); *meselri(e)* ('sin of gluttony' < 'leprosy'); and *somer* ('bearer / porter' < 'packhorse').

Table 12. Number and percentage of native / shared senses which are metaphorical and metonymic

	Corpus	ANGER
Total no. of loanword senses in ME	327	53
No. of native ME senses	71	10
% of total senses in ME	22%	19%
No. of native metaphors	21	7
% of all native senses	30%	70%
No. of native metonyms	21	3
% of all native senses	30%	30%
No. of other native senses	29	0
% of all native senses	40%	0%
No. of ME senses shared with French / Latin	256	43
% of total senses in ME	78%	81%
No. of shared metaphors	38	8

% of all shared senses	15%	19%
No. of shared metonyms	33	4
% of all shared senses	13%	9%
No. of other shared senses	185	31
% of all shared senses	72%	72%

49 Crucially, when the levels of shared metaphor (i.e., those which are also recorded in French / Latin) are compared,²⁸ it can be seen that figures for the corpus and for ANGER are much closer together at 15% and 19%, respectively. Therefore, whilst metaphors are more common amongst native senses than amongst shared ones in both the corpus and in ANGER, the domain of ANGER has a notably higher proportion of metaphors amongst those senses which have developed independently in Middle English. ANGER was included in the current project in the hope that it would provide more figurative language to analyse than the non-affective domains. These figures from a sample of ANGER loanwords suggest that this is indeed the case but that metaphors are proportionally more prevalent amongst homegrown senses than among those borrowed from French / Latin.

6. Summary of main results

50 Various analyses have been carried out to compare the domain of ANGER to a larger corpus including nine non-affective domains. Results showed that ANGER is more heavily lexicalized: the average number of lexemes per sense is 5.8 (compared to 2.4 for the corpus) and only 31% of semantic categories are single-item (compared to 52% for the corpus). Five of the most heavily lexicalized categories (i.e. those with twenty or more co-hyponyms) in the dataset belong to this domain. Co-hyponyms in these super-lexicalized categories from ANGER contained particularly high proportions of French borrowings (28.4%), whereas the overall percentage of French-origin loanwords across the domain (19.2%) was very similar to that found across DOMESTIC ACTIVITIES, MEDICINE and BUILDING. Individual lexemes in ANGER are more polysemous, with 50% occurring under more than one semantic category (compared to 37% for the corpus), and two out of the seven most polysemous words in the dataset belonging to this domain.

51 In terms of long-term retention of existing lexis, outcomes for ANGER appear similar to those for the non-affective domains. An examination of two-, three- and four-item senses found that the earliest recorded term (Term 1) tends to remain in use following the arrival of new vocabulary in the Middle English period, with only 27% being ultimately replaced by Present-Day English (compared to 24% for the corpus). In all cases, Type 2 (where incoming terms fail to replace Term 1) was the most common outcome (64% for ANGER and 47% for the corpus), regardless of whether Term 1 was of native or non-native origin. Cases where a native term were replaced by a loanword were relatively rare in both ANGER (20%) and the non-affective domains (16%). However, outcomes where all terms in the semantic category remain in use until Present-Day English (i.e. long-term synonymy) were comparatively very low in ANGER and accounted for only 5% of cases (compared to 22% for the corpus).

52 Finally, French / Latin loanwords in ANGER were found to exhibit similar trends to the other domains in terms of sense sharing with their source language(s). Polysemy in the borrowing and donor languages was nearly always mirrored but complete semantic overlap (where all senses in all languages matched up) was rare in the corpus (12%), and non-existent in ANGER. All domains had roughly the same proportion (around one in five) of native loanword senses, i.e. senses which developed independently in Middle English and were not recorded in French / Latin. Notably, the metaphor rate amongst

these homegrown senses in ANGER was particularly high at 70% (compared to 30% for the corpus).

7. Conclusion

53 The investigations in this paper were undertaken in order to discover if the semantic and lexical development of an affective domain, ANGER, differed from the kinds of developments seen in domains of everyday life, and of an elite and a professional occupation. We were also interested in any differences between the affective and non-affective domains in connection with the impact of the influx of French word borrowing that occurred in the later medieval period.

54 Weinreich [1968: 59] observes that comparison by a population of bilingual speakers between their language and one with which they are in contact may lead to the feeling that some of their semantic fields are insufficiently differentiated prompting them to borrow near-synonymous terms. This also fits in with our finding that individual loanwords in ANGER are more likely to be polysemous and to appear within several semantic categories within the domain. Note, however, that the polysemy found in loanwords in ANGER is mirrored by polysemy in the source languages (French and / or Latin), though complete semantic overlap is rare, pointing to the development of new senses in Middle English. Our results with regard to density of lexicalization support Weinreich's [1968: 58] suggestion that the vocabulary of affective domains is perceived by speakers as being in constant need of renewal. The differing results with regard to the amount of loanwords in the ANGER domain also appear to give us a clue about the continued presence of speakers familiar with French in the Middle English period.

55 In other respects, our results in relation to the vocabulary in ANGER mirror those found for the other semantic domains studied. While this seems to be a purely negative finding, it is important in the context of generally accepted ideas about the affective lexicon. We need to have a clear sense about what is particular about the emotional lexicon and what about it is true of the development of the vocabulary of English in a time of a trilingual textual culture. Our findings support those of Gevaert [2007], who found very little evidence of semantic shift through metaphorization in her corpus. Our results indicate that, despite the influx of French, vanishingly few of the native terms underwent semantic shift, in particular narrowing and broadening, in the Middle English period, even in domains such as ANGER, which have more loanwords than the average for the corpus. It is also the case that these borrowings did not oust the native terms within the Middle English period, again, even under the pressure of a greater amount of borrowing seen in the affective domain.

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Notes

1 The *Oxford English dictionary (OED)* suggests 1602 for the first attestation of *emotion* in the sense 'Originally: an agitation of mind; an excited mental state. Subsequently: any strong mental or instinctive feeling, as pleasure, grief, hope, fear, etc., deriving esp. from one's circumstances, mood, or relationship with others' and 1603 in the sense as a mass noun: strong feelings, passion;

(more generally) instinctive feeling as distinguished from reasoning or knowledge' (*OED* [s.v. *emotion*, n., senses 3.a and 3.b]). Tissari [2017] proposes Montaigne's *Essays*, published in 1580, as the first use of the term in the modern sense, supplanting the earlier *passions*.

2 *HTE* category headings are in bold throughout.

3 Collected for the *Bilingual thesaurus of everyday life in medieval England* project. We are grateful to the Leverhulme Trust for funding this project from 2013 to 2016.

4 Collected for the *Technical language and semantic shift in late medieval English* project. We would like to thank the Leverhulme Trust for funding this project from 2017 to 2020. We would also like to thank Dr Harry Parkin, Research Fellow on the project, for his work on assembling the hierarchy.

5 We are grateful to the Leverhulme Trust for funding for our current project, *Semantics of word borrowing in late medieval English*.

6 Note that only strictly domain-specific lexis was collected for the *Bilingual thesaurus* project (see Sylvester, Marcus & Ingham [2017]; Sylvester & Marcus [2017]); the contiguous, more general terms were added for subsequent projects.

7 This paper does not discuss the distribution of native and non-native words in the corpus across the hyponymic and hypernymic levels of the semantic hierarchy. For an examination of this topic, see Sylvester, Tiddeman & Ingham [2020].

8 Their classification as loanwords is based on the etymologies given in the *Middle English dictionary* (*MED*). Terms are tagged as "Continental French / Anglo-French", "Latin" and "Continental / Anglo-French and / or Latin" in the project corpus. Note that 1637 of the 1759 loanwords are first recorded in use in Middle English before ca. 1450.

9 For example, the French loanword *croupe* which was originally included in FARMING under **Body parts of a horse** and **Tail harness / crupper** is also now recorded in the senses of **Buttocks** and **Cut of meat**; the French loanword *meu(e)* which was originally included in FARMING as **Chicken coop** and in HUNTING under **Cage [for hawks]** is also now included in the sense of **Prison / place of confinement** and **A secret / hiding place**.

10 It is not unusual to find entries in *MED* which consist mainly or entirely of citations from sources where the matrix language is Anglo-French or British Medieval Latin: e.g., *MED* [s.vv. *chaloner*, *clivie*, *rone*, *rush*, *saucer*, *timon*, *torel* and *vertwel*].

11 Out of 1637 individual loanwords in the main corpus attested in Middle English by 1450, 57% are tagged as "French", 26% as "French and / or Latin" and 17% as "Latin". It is important to note, however, that whilst etyma categories in the main hierarchy are based on the *MED* language tags (which can be very general), source languages for the 100 loanwords were updated in some cases where a more accurate etymology was available through the ongoing revision of *OED*. For example, *affecioun*, *melancoli(e)* and *peutre* are tagged as "Old French; Latin" in *MED* but are now classified as borrowings from French by *OED*: see *MED* [s.vv. *affecioun*, *melancoli(e)* and *peutre*] and *OED* [s.vv. *affection*, *melancholy* and *pewter*].

12 Domain combinations included eleven instances of two domains and one of three. All domains apart from ANGER appeared in a combination, i.e., none of the loanwords in ANGER also appeared in another of the original nine domains in the dataset.

13 For Anglo-French: *Anglo-Norman dictionary* (*AND*); for Continental French: *Französisches etymologisches Wörterbuch*, *Dictionnaire étymologique de l'ancien français* (*DEAF*), *Dictionnaire du Moyen Français* (*DMF*), *Godefroy's Dictionnaire de l'ancienne langue française et de tous ses dialectes du IX^e au XV^e siècles*, *Trésor de la langue française*; for British Medieval Latin: *Dictionary of medieval Latin from British sources* (*DMLBS*).

14 *Peutre* is only used in this second sense as a gloss to Latin *electrum* in three glossaries: *Medulla Grammaticae*, *Nominale in Royal 17.C.17* and *Promptorium Parvulorum*. As *OED* [s.v. *pewter*] notes, the sense of 'electrum' is probably based on an initial misunderstanding which was then repeated throughout several Latin vocabularies from before 1425 to 1552. Further studies as part of the current project aim to provide a finer grained analysis of native and shared loanword senses and their longevity based on the text types in which they are recorded.

15 There is one citation of this sense from ca. 1227 (*DMLBS* [s.v. *peltrum*]). As with so many French-origin terms in British Medieval Latin-matrix texts, it is impossible to discern if the lexeme represents a French loanword or an early example of a Middle English word which has been previously borrowed from (Anglo-)French (cf. Trotter [2013]). This is another reason we have chosen to focus solely on Middle-English matrix texts as evidence for loanword use in the current project.

16 The metaphor is a sense hapax and is only recorded once ca. 1400. The metonymic senses are longer lived and are recorded until 1635 and 1590, respectively (*OED* [s.v. *disdain*]).

17 The "Other" category here includes loans from Middle Dutch, mixed etymology compound nouns, and words of uncertain origin.

18 The "Old Norse" category includes terms whose etyma have the following *MED* language tags: "Old Danish", "Norse", "Old Norse", "Old Swedish", "Norwegian" and "Old Icelandic".

19 Figures for the total numbers of French-origin loanwords across all semantic categories in these domains are as follows: ANGER (104 of 542); DOMESTIC ACTIVITIES (83 of 395); MEDICINE (154 of 826); BUILDING (118 of 673). In addition, note that figures in Table 4b showing that the five senses from ANGER have the highest proportion of Old Norse loans (9.9%) amongst the ten most lexicalized senses is mirrored by those for the corpus as a whole, where ANGER has a percentage of 7.2% Old Norse borrowings (39 of 552) compared to a corpus average of 3.0% (172 of 5818). Furthermore, figures showing that the sense **To heal / cure** from MEDICINE has the highest proportion of French and / or Latin loanwords (22.5%) in Table 4b are also representative of the wider dataset: MEDICINE overall has a percentage of 24.7% French and / or Latin borrowings (204 of 826) compared to corpus average of just 10.3% (598 of 5818).

20 For example, for the category **Be / become irritated**, Term 1 (*angren*, *a.* 1400) and Term 2 (*chaufen*, *ca.* 1440) are not first recorded very close together chronologically. For the category **One who / that which causes anger**, it is impossible to designate a Term 1 and a Term 2 as both words (*wratther* and *terror(e)*) are first recorded in sources dated from *a.* 1425.

21 A word is defined as occurring in Present-Day English, if it is attested in the nineteenth century or later, unless an *OED* entry with a final citation in the 1800s states that a word is obsolete, e.g., *diatesseroun* ('medicine of mixed ingredients') or *tapicer* ('one who weaves tapestries').

22 The Middle English period is defined here as 1100-1500.

23 This result mirrors findings from the *Technical language and semantic shift in Middle English* project (2017-2020), which found only eighty-one examples of narrowing and broadening amongst 1442 words in the domains of FARMING and TRADE, a rate of 5.6%; see Sylvester, Tiddeman & Ingham [2022b].

24 As the sample size for ANGER is small (22 categories), it was not productive to break the data into numerous subsets based on the language of origin of Terms 2-4. For a detailed analysis of the pairs, trios and quads in the nine-domain corpus based on whether co-hyponyms are "All Native", "All Non-native", "Mixed (with Term 1 being native)", or "Mixed (with Term 1 being a loanword)", as well as a breakdown of outcomes per individual domain; see Sylvester, Tiddeman & Ingham [2022a].

25 Note that the average number of Middle English-matrix citations per sense is higher for ANGER (7.2) than for the corpus as a whole (5.5). This may be linked to the text types cited for ANGER lexis; we hope to investigate this further in a future study.

26 This is probably due to a gap in the lexicographical record. According to the current *OED* entry [s.v. *disjoint*], the loanword became obsolete in all senses in the sixteenth century.

27 It is important to reiterate that the figures in the ANGER sample are low and that 70% in this instance equates to seven out of ten senses.

28 Examples of shared metaphor from ANGER are *ire* ('heat' < 'anger') and *malencoli(e)* ('emotions of melancholia personified' < 'melancholia'), which are also recorded in French (cf. *AND* [s.v. *ire*]; *DMF* [s.v. *mélancolie*]). Examples of shared metaphor from the other nine domains are *gardin* ('mind, soul, spirit, heart' < 'garden') and *phisicien* ('one who or that which amends' < 'physician'), which are also recorded in French (cf. *DMF* [s.vv. *jardin* and *physician*]; *DEAF* [s.v. *fiscien*]).

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