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Noun Phrase Modification in Middle English Culinary and Medical Recipes

Abstract

Although noun phrase modification and its evolution in early English writings have been the subject of many scholarly discussions, none of them has compared the use of noun phrases in the same text-type (= recipes) directed at different audiences. Thus, the present paper investigates the use of noun phrase modifiers in Middle English culinary and medical recipes. The study explores possible conditioning factors which may have influenced the use of pre- and post-modifiers in the two types of instructions written in the 14th and 15th centuries. Among others, the following questions will be considered: (i) which modification patterns prevailed in the examined material? (ii) was there any link between the type of the instruction and the choice of modifiers? (iii) did the modification patterns change over time? The corpus for the analysis consists of almost 2,300 recipes, which encompasses culinary and medical samples of approximately equal length.

Keywords: culinary, medical, recipe, noun phrase, pre-modification, post-modification.

1. Introduction

Noun phrase modification and its historical development in English writings have been investigated by a number of scholars. Among the available studies, we find analyses dealing with:

- (i) the position of adjective modifiers within noun phrases. For instance, Raumolin-Brunberg (1994) and Fischer (2000, 2001, 2004, 2006) concentrate on the changing position of attributive adjectives in Old and Middle English texts, whereas Moskowich (2002, 2009), Moskowich and Crespo (2002), Tyrkkö (2014), or Sylwanowicz (2016) discuss the use of adjectives in noun phrases found in early English scientific writings.
- (ii) the frequency of noun pre- and post-modification, especially the evolution of the preferences concerning their structural variants, i.e. the use of adjectives or nouns as pre-modifiers, and

clauses or prepositional phrases as post-modifiers (see for instance, Norri 1989, Raumolin-Brunberg 1991, Biber and Clark 2002, Biber et al. 2011).

Although there have been several studies discussing noun phrase modification in early English medical recipes, there is no comparative study that would focus on complex noun phrases in the historical culinary and medical material. Therefore, the main aim of this paper is to examine and compare the use and distribution of noun pre- and post-modifiers in Middle English culinary and medical recipe collections. The study covers the period from the 14th century, when the first English culinary recipes were written down, until the end of the medieval period, that is the end of the 15th century.

2. Pre- and post-modification of noun phrases

Following Biber, Grieve and Iberri-Shea (2009), the way in which nouns are modified reflects, among others, historical developments in terms of the readership or the purpose of a written text. In English, nouns are either pre- or post-modified. Among the former structures phrasal modifiers dominate, in the case of the latter - there is the choice between phrasal and clausal modifiers. The authors list the following (phrasal) pre-modifiers:

- (i) attributive adjectives, e.g. *a good book*;
- (ii) participial adjectives, e.g. *an interesting book*;
- (iii) nouns, e.g. *the police car*.

Among the major post-modifiers, Biber, Grieve and Iberri-Shea (2009) enumerate:

- (a) clausal post-modifiers:
 - (i) relative clauses, e.g. *the letter which I received*;
 - (ii) *ing*-clauses, e.g. *the girl sitting next to you*;
 - (iii) *ed*-clauses, e.g. *the letter posted yesterday*;
 - (iv) *to*-clauses, e.g. *the person to contact*;
- (b) phrasal post-modifiers:
 - (i) appositive noun phrases, e.g. *the secretary, Mrs Jones*;
 - (ii) prepositional phrases, e.g. *reward for his deeds*.

Quirk et al. (1985: 1238-1239) add complementation (e.g. *a bigger house than that*) to the above list of noun post-modifiers.

Following Biber and Clark's (2002) diachronic investigation of the modifying patterns in English (among others in medical prose), it has become clear that attributive adjectives and nominal pre-modification were gaining popularity; and "nouns are as productive as attributive adjectives" (2002: 62). The former structures were more frequently used - in medical texts - with common than proper nouns, unlike in the case of other registers. Among the post-modification patterns, Biber and Clark report prepositional phrases to have become dominant in the eighteenth century, outnumbering clausal modifiers (2002: 61), the leading prepositional phrase being the *of*-phrase. This construction, according to Fries (1940), being much more common than structures with other prepositions, gained ground already by 1300, when it increased to about 85% (cf. also the studies by Yngve 1975, Raumolin-Brunberg 1991 or Kreyer 2003).

As a follow-up to the above-mentioned research (Biber and Clark 2002), Biber, Gray, Honkapohja and Pahta (2011) undertake the task of analysing post-modifying prepositional phrases in medieval medical writings (1375-1500), and juxtapose their results with later (1500-1700) medical data. The authors demonstrate that the prepositions *in* and *on* as noun modifiers, although rare throughout the analysed centuries, were well established already in the Middle English period. They discovered, however, that both prepositions used in post-modifying phrases changed their meanings. *In*-phrases shifted from the medieval concrete/locative meaning to a more abstract one; as an extension to the locative meaning, Biber et al. (2011) propose time expressions and generic reference, both found already in the medieval material. The abstract meaning of *on*-phrases surfaced only in the sixteenth century, prior to which they expressed physical location. The changes in the use of the prepositional phrases in medical texts are viewed by the authors as reinforced by the role of Latin in medical texts. Latin served as a source of numerous medieval medical phrases, often introduced by the preposition *in*. In the later period, instead of fixed Latin expressions, medical knowledge “started to become the object of description, resulting in medical communication characterised by greater use of nominalisations and, accompanying this, greater use of ‘abstract’ meanings for *in/on* PPs as noun modifiers.” (Biber et al. 2011: 211).

The above and other studies, such as Gómez (2009) and Jucker (1992), have also revealed that the use of pre- and post-modifiers in noun phrases is often conditioned by their function. For instance, post-modifiers are semantically more explicit and informative, whereas pre-modifiers lack explicitness and there is often danger of misunderstanding (Quirk et al. 1985: 1242). Hence, the choice of a noun-modifier is usually context-sensitive and depends on the communicative goals of the message, whether spoken or written (Gómez 2009: 32).

3. Corpus and methodology

The texts analysed in this study can be grouped into two categories: (i) culinary and (ii) medical. The former consist of recipes found in a variety of cooking collections from the 14th and 15th centuries, selected and gathered by Bator (2014). This corpus has been downsized to recipes which survived in full, excluding fragmentary texts. Altogether, 915 recipes were selected, which amount to a volume of almost eighty thousand-word-long sample.

The latter part of the corpus consists of medical texts, selected from two sections of the Middle English Medical Texts corpus (MEMT). The first section, the *Appendix*, includes recipes from the 14th century, whereas the second section, *Remedies and materia medica*, includes recipes dating back to the 15th century. The overall number of medical recipes used for the present study comes to 1,348, which results in a collection of over seventy five thousand words.

The corpus has been selected in such a way as to represent a similar length¹ of the two samples (culinary and medical). Such an approach results in a different number of recipes, not only in terms of the two text categories but also with respect to the distribution of the instructions in particular centuries, see Table 1. The relatively small number of recipes taken from 14th-century collections has been triggered by the unavailability of culinary instructions dated to that time. In order to make the comparison between data from the two centuries reliable, the results for the respective centuries will be given as percentage values.

¹ Based on an automatic .docx count.

		14 th c.	15 th c.	TOTAL
culinary recipes	no. of recipes	268	647	915
	length	16,218	63,531	79,749
medical recipes	no. of recipes	299	1,049	1,348
	length	12,189	63,719	75,908

Table 1. The size of the corpus

Due to the fact that neither the culinary nor the medical sub-corpus has been tagged to allow for an automatic part of speech search, they had to be examined manually in order to extract all noun phrases. Then the results were categorised into three major groups:

- (i) noun phrases with pre-modifiers,
- (ii) noun phrases with post-modifiers, and
- (iii) noun phrases with both pre- and post-modifiers.

Next, specific structural variants of each type of modification were assigned, and their frequencies were established. Only indisputable phrases were taken into account; therefore if separated by punctuation marks, as in the examples under (1), they were not taken into consideration. Similarly, combinations which are possible compounds were excluded, even though they might have taken different spelling forms, as in (2).

- (1) Take hennys or porke, rostyd & chopyd; (...) sesyn hit up with venyger & pouderes & a lytyll sygure, steynynd with alekenet. (*Ordinance of Potage*)
 [Take hens or pork, roasted and chopped (...) and season it up with vinegar and powders & a little sugar, dyed with alkanet]²
 of clowis, ii unce; of notemugges, ii unce & a half (*Gode Kokery*)
 [of cloves, 2 ounce; of nutmegs, 2 ounce & a half]
- (2) rost yryn / rost yron vs. roastiron [roast iron]
 payn de mayn vs. payndemayn [pain de main]
 gyngyuer bred vs. gyngebred [ginger bread]

In what follows, the results will be discussed separately for each of the three structural groups ((i) - (iii)) with reference to both types of recipes. One part of the recipes was excluded from the analysis, that is the headings. Even though they consist mostly of noun phrases, we have not taken them into account due to the specificity of this particular recipe component. Additionally, noun phrases included in the headings are often repeated in what follows the heading (= the procedure), which would multiply some of the structures and thus distort the findings. For a discussion of the possible heading structures, both in culinary and medical recipes, see Bator and Sylwanowicz (2017, 2018).

2 Throughout the article, translation of the medieval examples will be given in square brackets. All the translations are ours.

4. Hypotheses

Based on the available publications, a number of hypotheses were drawn, with reference to the material which is of interest in the present investigation:

- (a) Contrary to contemporary texts, and Biber et al.'s (1999) conclusions,³ pre- and post-modification in medieval texts were not equally common. It is assumed that not only was the number of pre-modified phrases more frequent in the analysed (culinary and medical) material, but the ratio of each type of modification was different with respect to the type of instruction.
- (b) The two types of instructions will differ in terms of the choice of the modifying element (adjective, noun, clause or preposition). For instance, culinary recipes make no (or hardly any) use of clausal modification, unlike medical texts.
- (c) Following Biber, Grieve and Iberri-Shea's (2009) remark that noun-phrase modification evolved together with the changes in specialisation of particular registers, and bearing in mind that recipes changed over time from short memory-aids for professional cooks to longer and more detailed instructions aimed at lay audience, it is assumed that certain differences in the choice of modifiers may be observed between the 14th- and 15th-century culinary instructions.⁴
- (d) The rise in frequencies of attributive adjectives and noun + noun pre-modifying structures might have started earlier than Biber and Clark (2002) indicated (that is the 17th and 20th centuries, respectively). And this might have applied to culinary texts as well.
- (e) Similarly, the tendency to use nominal pre-modifiers with common nouns, rather than proper ones, might also have started earlier than indicated by Biber and Clark (2002).

5. Results

Figure 1 presents the total ratio of the three possible modifying structures, that is pre-modification, post-modification, and both pre- and post-modification in the 14th- and 15th-century culinary and medical recipes respectively. A brief look at the graphics shows that, with respect to the culinary material, post-modification dominates in the earlier period, that is in the 14th century (59%); towards the end of the medieval period pre-modification grows in number and comes to fifty per cent of the modifying structures. Additionally, the use of a combination of both types of NP modification increases in the 15th century (9%). In the medical material, in contrast, there is no significant change in the use of pre- and post-modification patterns between the two analysed centuries, both being fairly well represented (ca.

3 They compared various Present-Day-English registers and deduced that (a) "premodifiers and postmodifiers have a similar distribution across registers." (Biber et al. 1999: 579), and (b) "[i]n all registers, noun phrases with premodifiers are somewhat more common than those with postmodifiers." (1999: 578), illustrating it with the ratio 25:20:12 per cent of pre- to post- to both types of modifiers, as in the case of academic prose.

4 Sixteenth century culinary recipes are said to have been directed at lay readers whose aim was to learn how to prepare particular dishes.

41% and 55% respectively). This might be partly explained by the need of precision in naming sicknesses or medical preparations. Middle English lacked fixed medical nomenclature and the same ailment, medicament or ingredient could be referred to by a number of variant forms. For instance, a rose oil - a very popular substance used in the preparation of curative mixtures - is recorded with at least ten variant forms: *oil deroses*, *oil of rose(s)*, *oil of roset*, *oil rosarum*, *oil rosat*, *oile rose*, *oil roset*, *oleum rosaceum*, *oleum rosarum*, *oleum roses* (Sylwanowicz 2018: 137). In addition, most labels for medicaments relied on the use of general terms (for instance, *medicine*, *remedy*) or terms denoting dosage forms (for instance, *drink*, *ointment*, *plaster*, *syrup*, etc.), which resulted in the use of pre- and post-modifiers which made the terms semantically more explicit (for instance, *knitting medicine*, *opening medicine*, *plaster constrictive*, *ointment for sore eyes*, *medicine that breaks the stone*, etc.). This diminished the degree of possible ambiguity and assured precision which was necessary in the medical treatment.

In the following sections the particular modifying structures will be discussed in more detail.

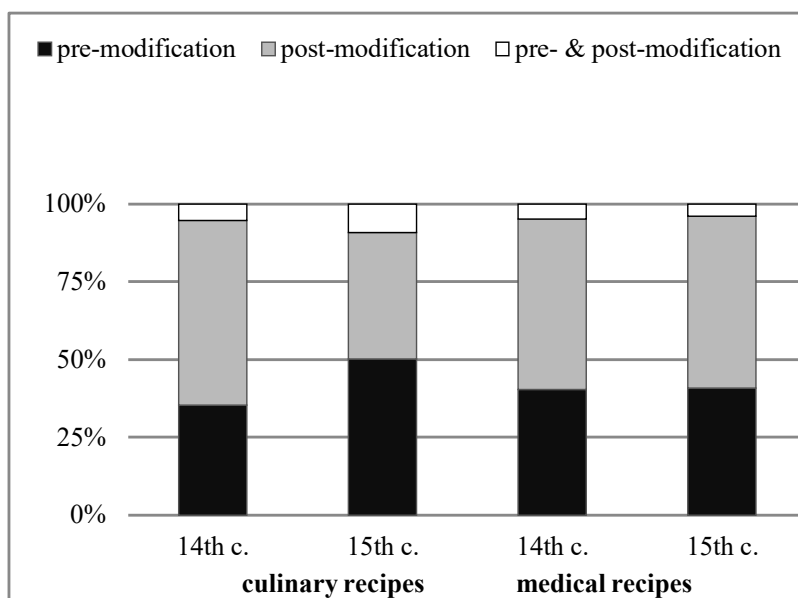


Figure 1. The occurrence of particular modifying structures in the two sub-corpora in the analysed period

5.1. NP pre-modification

Pre-modifying structures were in a minority in the 14th-century culinary material, representing over 35% of all the structures found in the 14th-century cooking recipes. However, they increased in number a century later reaching over 50% of all the 15th-century structures selected from the culinary sub-corpus. The medical material, in contrast, presents a fairly identical picture for both centuries, with approximately 41% of pre-modifying phrases out of all the structures found in the respective centuries. Table 2 presents the exact number of pre-modifying structures found in the two sub-corpora.

	14 th c.	15 th c.	TOTAL
culinary recipes	622 (35.4%)	1,661 (50.1%)	2,283
medical recipes	192 (40.3%)	1,244 (41.1%)	1,436

Table 2. Pre-modification in the analysed recipes (no. of tokens)

Pre-modification was represented in the corpus by the following structures:

- $adj_1 + N$ (where adj_1 refers to attributive adjectives)
- $adj_2 + N$ (where adj_2 refers to participial adjectives)
- $N + N_1$ (where N_1 is the head)

Although the use of pre-modification increases in the 15th-century culinary material, the ratio of the three possible pre-modifying structures is approximately identical when comparing recipes from the two analysed centuries, see Figure 2. Noun phrases pre-modified by an attributive adjective are the most frequent (representing 69% and 72% in the respective centuries). Among these, qualifying adjectives (*fair, fresh, good, white, sweet, cold, small*) are the most common, see examples under (3). These phrases are usually short, consisting of a single adjective followed by a noun. Sporadically, the noun may be pre-modified by two or three adjectives or an adjective and another noun, as in (4).

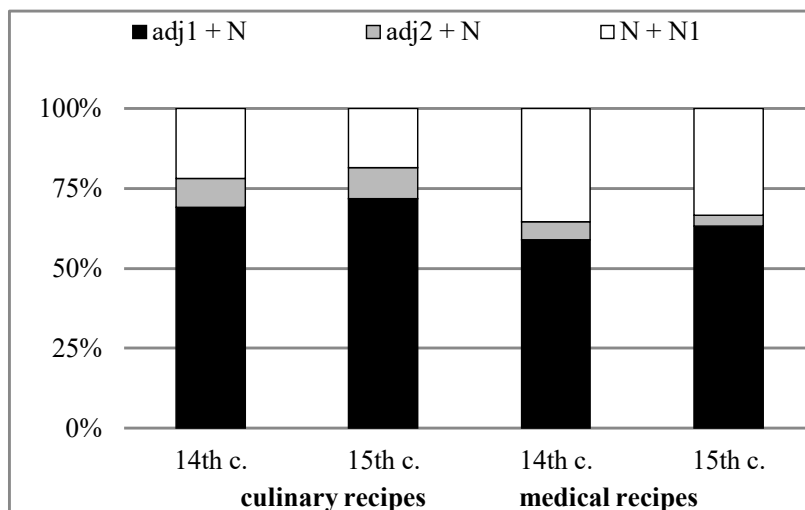


Figure 2. The occurrence of particular pre-modifying structures

- (3) grene pesyn [green peas]
 whyte brede [white bread]
 blak suger and colde water [black sugar and cold water]
 clene broth & rede wyne [clean broth & red wine]
- (4) god wyte grees [good white grease]
 fayre newe pynys [fair new pine-nuts]
 fair litel marbill stone [fair little marble stone]

fyne suger plate [fine sugar plate]

Pre-modification by participial adjectives is relatively rare in the medieval culinary material (with 9% and 10% in the 14th and 15th centuries respectively). Most of these phrases involve past participial adjectives and refer to ingredients which were processed in some way, as in (5). There are a few occurrences of present participial adjectives, especially in phrases such as: *a boiling potte* [a boiling pot], *boilyng crem* [boiling cream], *parboylingge broþe* [parboiling broth].

- (5) blanched almaundes [blanched almonds]
groundon benes [ground beans]
mycyd onyons [minced onions]
boylid porke [boiled pork]
clarefied buttur [clarified butter]

Nominal phrases which consist of two nouns constitute 22% and 18% in the analysed periods, respectively. They refer mostly to ingredients used in the kitchen, some of which were very common - which influenced the number of occurrences of these phrases, for instance, *almaunde mylke* [almond milk], *cowe mylke* [cow milk], *powdour ginger* [powder ginger], *pouder peper* [powder pepper], *þe schepis maw* [the sheep's maw], *swynes feet* [swine's feet], *capoun broþe* [capon broth]; but also *fisch days / lenten tyme* [fish days / lent time] and *flesshe day / flesch tyme* [flesh day / flesh time].⁵

As regards the medical material, the general distribution of particular pre-modifying structures is comparable to that found in the culinary recipes (see Figure 2 above). The examples with attributive adjectives are prevalent (59% and 63% in the 14th and 15th centuries respectively); they include mostly phrases with qualifying adjectives. Their role in the examined material is twofold: (i) to describe the features of the noun referents, being mostly names of ingredients, utensils or ailments (see examples under (6)), and (ii) to put emphasis on the quality of the noun referents, here end products/medicaments (see examples under (7)). These evaluative phrases are more common in the 15th century recipes, and their role was to convince the reader that the described remedies were effective (cf. Wear 2000: 85). As in the culinary material, examples with more than one adjective were also recorded (see (8)).

- (6) hot ale [hot ale] clene vessel [clean vessel] olde woundys [old wounds]
fat bakoun [fat bacon] new pot [new pot] seke eyes [sick eyes]
- (7) highe medecyne [fine medicine]
precious watere [precious water]
soveryn medecyn [excellent medicine]
principal medecyn [main medicine]
speciall plaister [special plaster]
profytable letuarie [helpful potion]
- (8) clene swete water [clean sweet water]
goode fatte fygis [good fat figs]
new fresche violet [new fresh violet]

5 These combinations could also be regarded as compounds. However, as noted, for instance by Sauer (1992), in Middle English there is no clear-cut distinction between compounds and phrases.

goode olde weyn [good old wine]

In addition, there are instances of nouns pre-modified by qualifying adjectives that serve as classifying pre-modifiers. These prevail in the phrases denoting types of medicinal preparations that were identified by their colour (*blak/grene entret* [black/green plaster or salve], *blak/grene/rede/whyte oyntment* [black/green/red/white ointment], *rede salve* [red salve]), or by what humours they eliminated (*hot, cold, dry* or *moist*), for instance, *cold/hot oyntment* [cold/hot ointment], *cold plaster* [cold plaster]. Their function was to make a clear distinction between the referents of the noun (cf. also Sylwanowicz 2016).

Participial adjectives as pre-modifiers are as infrequent as in the culinary material (with 6% and 3% respectively). However, contrary to the culinary context, the distribution of present and past participial adjectives in the medical recipes is fairly equal. In addition, most participial pre-modifiers are found in phrases describing medical conditions, as in (9).

- | | |
|---------------------------------|--|
| (9) wepende eyne [weeping eyes] | fallynge evele ['falling evil' / epilepsy] |
| broken ribbis [broken ribs] | stynkyng brethe [stinking breath] |
| brokyn hedys [broken heads] | rotyng gomys [rotten gums] |
| wounded man [wounded man] | akyng place [aching place] |

Nominal modification of nouns is fairly well represented in the medical recipes (with 35% and 33% in the 14th and 15th centuries, respectively). Similarly to the culinary context, these phrases refer mostly to ingredients used in the preparation of the curative mixture. Within this group we have identified numerous examples of genitival pre-modifiers (for instance, *womans mylke* [woman's milk], *bores grese* [boar's grease], *shepis talow* [sheep's tallow/grease], *hares blod* [hare's blood], *swines grese* [swine's grease], *cattes clawes* [cat's claws]). There are also sporadic references to some ailments, mostly head or tooth aches, and a repeated phrase *goddis grace* [God's grace] that is usually found in the final part of the recipe, as in (10).

- (10) ...and þou schalt ben hole be goddis grace. (MEMT, John of Burgundy, *Practica Phisicalia*)
 [and you shall be healed by God's grace]
- ... and by goddis grace he shall staunch. (MEMT, *Leechbook 1*)
 [and by God's grace he shall stop bleeding]

5.2. NP post-modification

Post-modification is represented in the analysed corpus by a larger range of structures than in the case of pre-modification:

- N + adj₁ (where adj₁ refers to attributive adjectives)
- N + adj₂ (where adj₂ refers to participial adjectives)
- N₁ + N (where N₁ is the head)
- N + PP (where PP refers to any prepositional phrase)
- N + clause

For the exact ratio of the particular structures see Figure 3 below.

	14 th c.	15 th c.	TOTAL
culinary recipes	1,044 (59.4%)	1,347 (40.6%)	2,391
medical recipes	261 (55%)	1,689 (55.8%)	1,950

Table 3. Post-modification in the analysed recipes (no. of tokens)

Post-modifying structures decreased in frequency in the 15th-century culinary sub-corpus (see Table 3). Most of the nouns are followed by prepositional phrases (with 62% and 82% in the respective centuries), especially the *of*-phrase (see examples under (11)). The *of*-phrases are often more complex than the other ones, comprising a number of modifiers, as in (12). The popularity of some ingredients, such as *flour of ryse* [flour of rice], *mylk of almaundys* [milk of almonds], *poudere of gyngere* [powder of ginger], *raisouns of coraunce* [raisins of Corinth], among others, contributed to the high number of this particular modifying structure. For instance, various powders constitute 14.4% and 23.6% of all the *of*-phrases in the 14th- and 15th-century culinary sub-corpus, respectively; *yolks of eggs* amount to 6.3% and 9.7% of these phrases in the respective centuries. Some of the nouns may be followed by prepositional phrases introduced by foreign elements, as in *charge de quyns* [preserve of quinces], *foille de pastee* [foil of paste], *garette de moutoun* [ham of mutton], *greyn de parys* [grains of Paris], *oyle de olyue* [oil of olive]. These are found only in the 14th-century culinary material, and result from the French influence on culinary recipes.

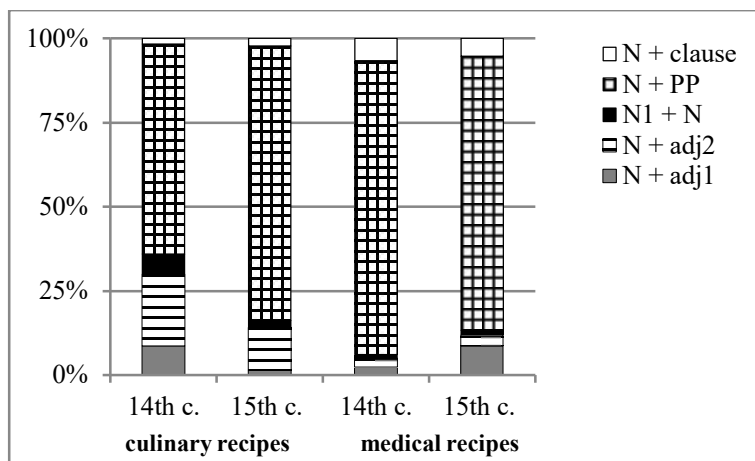


Figure 3. The occurrence of particular post-modifying structures

- (11) aneys in confyt [anise in comfit]
 broth of samon [broth of salmon]
 the colour of the safron [the colour of the saffron]
 the egge of a knyf [the edge of a knife]
 creme of almaundes [cream of almonds]
 flour of canel [flour of cinnamon]

- (12) a lyour of paryngys of crustys of whyte bredde drawyn with wyn
 [a thickening of crusts of white bread mixed with wine]⁶
 past of paryd floure knodyn with milke of almondys
 [paste of prepared flour knead with milk of almonds]
 a porcyon of clene larde of fat of bacon well sodyn
 [a portion of clean lard of fat of bacon well sodden]
- (13) mary dysed, & datys mynsyd [rosemary diced, & dates minced]
 eyron sodyn harde [eggs sodden hard]
 sygure claryfyd or hony claryfyd [sugar clarified or honey clarified]
 chickenys choppyd [chickens chopped]
 almaundes blaunched [almonds blanched]

The second most frequently represented post-modifying structure found in the culinary sub-corpus is a noun phrase followed by a participial adjective (N + adj₂), with 21% and 13% in the two centuries, respectively. All of the adjectives take the form of past participles and refer to preprocessed ingredients, as in (13) above. Noun phrases followed by attributive adjectives are represented by only 9% and 1% of structures found in the culinary recipes in the two analysed centuries. Attributive adjectives are much more frequent in pre-modifying phrases (see section 5.1 above). Their use as post-modifiers may be accounted for by:

- (i) elliptical use, as in: *þe colour red* [the colour red], a phrase which in other recipes takes the form of a clause, see examples under (14);
- (ii) fixed expressions: almost half of the 14th-century results are due to the use of the phrase *powdour fort* [strong powder], which is a mixture of herbs and spices frequently used by medieval cooks;⁷
- (iii) French influence: for instance *and florissch it with aneys whyte* [and flourish it with anise white]; *wyne greke* [wine Greek]; *braun ryall* [brawn royal]; *a gurnard rawe* [a gurnard raw]- French patterns were much more frequent in the 14th century culinary material than later.⁸

Noun phrases post-modified by clauses are the least frequent structures in the culinary sub-corpus, with only 2% of occurrences, irrespective of the century. All of the examples are relative clauses, as in (15).

- (14) *þe colour is red.* [the colour is red]
þe colour schal beon 3oelu. [the colour shall be yellow]
- (15) *metee þat is ihwyted* [meat that is whitened]
suger þat is casten in moldys [sugar that is cast in moulds]
the braun that thu makyst yn lentyn [the brawn that you make in lent]

Nouns modifying noun phrases found in the culinary sub-corpus are more frequent as pre-modifiers (see section 5.1); however, a number of cases (6% and 2% in the respective centuries) were also found in the post-modifying paradigm. These mostly include proper nouns, such as brands of certain products or their origin and are present in the early recipes. For instance, *raisouns coraunce* [raisins of Corinth], *sugur cypre*

6 In this example both ‘paryngys’ and ‘crustys’ refer to crusts of bread, see the *MED* (s.v. *paring*(e ger.(1) 3; & *cruste* n. 1a).

7 See also Bator (2013).

8 For a discussion of foreign influences on the culinary language, see for instance Bator (2015).

[sugar of Cyprus], *prunes damysyns* [plums of Damascus], *chese ruayn* [autumn cheese]⁹, *powdour douce* [duke's powder]¹⁰. The later recipes, although poor in terms of N₁ + N structures, contain phrases absent from the 14th-century sub-corpus, such as *sause gynger* [sauce ginger], *sause galentyne* [sauce galantine]. They may either be treated as names of sauces, or may be explained as elliptical variants of clauses such as *the sauce is vergyussauce* [the sauce is verjuice sauce], *and his sauce is vergeous* [and his sauce is verjuice], found in the same sub-corpus.

Similarly to the culinary material, the most common pattern in the medical sub-corpus (represented by over 80% examples, irrespective of the period) is the head noun followed by a prepositional phrase, of which *of*-constructions are the most frequent. As in the culinary recipes, these constructions are usually found in phrases that refer to ingredients (for instance, *oyle of rose* [oil of roses], *sirupe of violet* [syrup of violets], *jois of planteine* [juice of plantain], *decoctoun of castor* [decoction of beaver], etc.). The function of the modifier is to identify the origin of the ingredient, such as (i) plant origin: *water of rose* [rose water], (ii) animal origin: *powder of castor* [powder of beaver], or (iii) mineral origin: *powder of arsenek* [powder of arsenic]. A number of the *of*-constructions refer to medicinal mixtures (such as *drynk of antyoche* [drink of Antioch]) or injuries (for instance, *sore of eyen* [eye sore], *wounde of goute* [goute wound], *ach of wombe* [pain in womb]), but these are mostly expressed by formations in which the noun is modified by prepositional phrases with *for* or *in*, as in (16). Other examples include *de*-phrases, being mostly adoptions from French, for instance, *oyle de bay* [oil of laurel], *oyle de olyue* [oil of olive], *bewe de Antioche* [drink of Antioch], etc. The first two examples are popular ingredients and are also found with an *of*-phrase.

- (16) enplaster for þe feuer [plaster against fever]
 bolnyng in þe hede [swelling in the head]
 oynment for þe woundis [ointment for wounds]
 kankir in þe wonde [wound cancer]
 drynk for bledynge [drink against bleeding]
 swellyng in þe armes [swelling in armes]

The second post-modifying structure (especially in the 15th century medical recipes), though rare, is the head noun followed by an attributive adjective, often referred to as a French-type structure (Moskowich 2009). The use of this structure is often explained by the fact that Middle English medical writings relied heavily on foreign originals, and their translators often incorporated foreign patterns. This, however, was not mindless copying of foreign terms. As seen in examples under (17), the nouns are followed by classifying adjectives, which reveals that the French-type pattern was mostly used in phrases denoting more technical terms (here: names of sicknesses and medicaments).¹¹

9 This is one of the possible meanings of the name. Hieatt and Butler (1985: 211) explain it as cheese “made after the cattle had fed on the second growth, called *rewen* or *rowen*”. Another possible denotation of the name is ‘Ruen cheese’.

10 A special mixture of herbs and spices used in medieval kitchen, see also Bator (2013). The name ‘duke’s powder’ was used in the English translations of the French *Le Ménagier de Paris*, see for instance Hinson (online). Another possible interpretation of the name is ‘sweet powder’ or ‘fine powder’ (see, for instance, <http://www.medievalcuisine.com/Euriol/recipe-index/powder-douce>).

11 Sylwanowicz (2016), in her discussion of adjective modifiers in Middle English medical texts, shows that there is a link between the position of the adjective in the noun phrase and the semantic category of the adjective (qualifying and classifying), the technicality of the term and the level (learned and non-learned) of the medical writings.

- (17) feuer tercian [tertian fever]
 feuer cotidian [quotidian fever]
 unguentum viride [green ointment]
 unguentum album [white ointment]
 anoynement sanatif [healing ointment]
 medycine confrotatiff [soothing medicine]

If we consider the remaining three post-modifying patterns, their frequency in the medical material is marginal. Of these, the noun phrases with clauses as post-modifiers prevail (6.5% and 5.5% in the 14th and 15th centuries, respectively). They are mostly expressed by relative clauses and their function is to describe an ailment or to explain a more technical term, as in (18). As already noted in section 5, the noun phrases in the medical context had to be explicit due to the lack of consistent terminology. In addition, recipes are mostly recorded in the writings aimed at a less learned audience, hence the need of explanation.

- (18) þe web þat bredys in a mannis eyne [web in man's eye]
 amerose þat men calleþ wilde sauge [ambrose that is called wild sage]
 þe asshe þat is yclepid fraxinus [ash that is called fraxinus]

The phrases with participial adjectives as post-modifiers are represented by 3% of examples in each of the examined periods. As in the culinary recipes, all of them take the form of past participles and refer to preprocessed ingredients, see (19).

- (19) camamell dried [dried camomile]
 bwttyr claryfyed [clarified butter]
 sede stampyd [mashed seed]

Nouns as post-modifiers are the least frequent (with only 1% of occurrences in each of the examined centuries), and these involve anglicised adoptions of French/Latin forms for herbs or other substances, for instance, *erbe Robert* [herb robert], *erbe coriandre* [coriander herb], *pigra Galieni* [a purgative of Galen], *mede wex* [mead wax], *oyle olyve* [oil of olive], etc.

5.3. NP pre- and post-modification

Noun phrases which are both pre- and post-modified are relatively infrequent in the culinary instructions (slightly exceeding 5% and 9% in the respective centuries, see Table 4), which reflects their short, 'telegrammatic' style, as Carroll (1999) calls it. The later the collection, the more such structures appear, which can be accounted for by the evolution in the structure of the text type.

	14 th c.	15 th c.	TOTAL
culinary recipes	93 (5.3%)	306 (9.2%)	399
medical recipes	23 (4.8%)	124 (4.1%)	147

Table 4. Pre- and post-modification in the analysed recipes (no. of tokens)

Among those phrases which take both types of modification, the structure $\text{adj}_1 + \text{N} + \text{PP}$ prevail in both centuries, with 66.7% and 81.4% occurrence of all the pre- and post-modifying structures in the respective centuries, see examples under (20). This complies with the general popularity of prepositional phrases used as modifiers in the analysed material (see section 5.2). Many of the attributive adjectives are evaluative, as in (21). The second pattern which repeats across the culinary sub-corpus is $\text{adj}_1 + \text{N} + \text{adj}_2$. Attributive adjectives tend to precede, whilst participial adjectives follow the noun phrase, as in (22). Only single occurrences of the reversed order have been found in the culinary sub-corpus.

- (20) *faire mutton of the buttes* [fair mutton of the buttocks]
raw yolkes of eyron [raw yolks of eggs]
stye sauce of watyr [thick sauce of water]
- (21) *a gode bature of spicerye* [a good batter of spices]
and gode broth of befe and mutton [and good broth of beef and mutton]
& gret roysonys of Coraunce [& great raisins of Corinth]
- (22) *smale briddes istyued* [small birds roasted]
freysshe grece boyling [fresh grease boiling]
faire almondes yblanched [fair almonds blanched]

Similarly to the culinary material, noun phrases with pre- and post-modifiers in medical recipes are scarce. Here, also the most frequent pattern is $\text{adj}_1 + \text{N} + \text{PP}$ (91% and 80%, in the 14th and 15th centuries, respectively). As the examples under (23) show, the *for*-phrases follow head nouns pre-modified by evaluative adjectives which put emphasis on the quality of the remedy, whereas those with *of*-phrases refer to ingredients. The second fairly common pattern, illustrated under (24), is $\text{adj}_1 + \text{N} + \text{clause}$.

- | | |
|---|--|
| (23) <i>fresch grese of a swyne</i>
[fresh grease of swine] | <i>a precius water for many evyllys</i>
[precious water for many illnesses] |
| <i>fatt bakon of a swyn</i>
[fat bacon of swine] | <i>a good playster for bloody eyys</i>
[a good plaster for bloody eyes] |
| <i>grene bowes of hesel</i>
[green branches of hazel] | <i>a nobil medicine for greuous ache</i>
[efficacious medicine for grievous ache] |
| <i>sowre joys of pomegranate</i>
[sour juice of pomegranate] | <i>a gude enpleyster for broken bones</i>
[a good plaster for broken bones] |
- (24) *a rede oynement that is ryght good to dreye a wownde*
[a red ointment that is good to dry a wound]
foul breþ þat is in þe mouþ
[foul breath tha is in the mouth]
reed pypyl þat warit on þe face
[red pimple that grows on face]

There are also a few records of the following patterns: $\text{adj}_1 + \text{N} + \text{adj}_1$ (*grene oynement sanatyfe* [healing green ointment]), $\text{N} + \text{N} + \text{adj}_1$ (*swynes grese fresshe* [fresh swine grease]), $\text{adj}_1 + \text{N} + \text{adj}_2$ (*hote water distempered* [blended hot water]).

6. Conclusions

The examination of the noun phrase modification in the culinary and medical recipes written in the 14th and 15th centuries shows that some modification patterns were more common than others (cf. Table 5 below). The research also adds to the previous studies, showing discrepancies between modification tendencies found in instructions and other text types discussed in the available publications (see section 2).

Rs	adj ₁ + N ₁	adj ₂ + N ₁	N + N	N ₁ + adj ₁	N ₁ + adj ₂	N ₁ + PP	N ₁ + cl	pre- + N ₁ + -post
14 th century								
culinary	24.4%	3.2%	11.3%	5.1%	12.7%	37.1%	0.9%	5.3%
medical	23%	2.4%	16.9%	1.3%	1.5%	48.5%	3.6%	2.8%
15 th century								
culinary	35.9%	4.9%	10%	0.6%	5.2%	33.3%	0.9%	9.2%
medical	26%	1.4%	14.8%	4.9%	1.8%	45.2%	2.9%	3%

Table 5. The percentage of particular structures in the respective centuries

Our analysis allows us to draw a number of tentative conclusions. Firstly, pre- and post-modification patterns differed in their distribution (cf. Figure 1), the latter being more common, with the exception of the 15th-century culinary material. The rise of pre-modification in the cooking recipes might have resulted from gradual departure from French structures (widely present in the 14th century), as well as from the successive shift in the target audience at which the instructions were directed. Secondly, the choice of particular modifying structures did not differ significantly between the culinary and medical material; however, a few patterns seem to be more characteristic of one type of recipe. For instance, medical instructions made use of clausal post-modification, whilst culinary recipes relied on participial adjectives. Next, in both types of recipes, prepositional phrases were dominant among the post-modifying structures already in the medieval period, which antedates Biber and Clark's (2002) findings. These results are in agreement with Fries's (1940) research, who assigned the predominance of *of*-phrases to 1300. Finally, our results show that especially the use of nouns and attributive adjectives as modifiers increased in number already in the medieval period, which suggests that their prevalence in recipes started earlier than in the texts analysed by Biber and Clark (2002).

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