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Isabel Moskowich

Published online: 25 Jun 2008.

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''To Lerne Sciences Touching Nombres and Proporciouns'': The Proportion of Affixation in Early Scientific Writing

Isabel Moskowich

1. Introduction

When Matthews declared that ''the analysis of words is a subject that is momentarily out of fashion in linguistic theory'',[1] he was right to think there would be a revival of the interest in the topic. Though the view of Middle English morphology offered by scholars has been classed as ''patchy and scattered'',[2] we believe it useful to investigate the behaviour of the different morphological (derivational) patterns to be observed in the scientific register of the late Middle Ages.

Biber defines register as ''any variety associated with particular situational contexts or purposes'' and also suggests that studies of a register should have three major components: description of the situation in which the register is used; description of the linguistic characteristics of the register; and analysis of the functional or conventional associations between situational and linguistic features.[3] These three elements will be dealt with in what follows.

The aim of this paper is to analyse Middle English derivational processes in early scientific writing, paying special attention to suffixation and in relation to etymological origin as an index of communicative strategy. The devices used to enlarge the inventory of nouns contained in these text-types will be studied according to the list of suffixes proposed by Dalton-Puffer. The paper is organised into four main sections. Section 2 features a discussion of ''early scientific writing''. Section 3 is devoted to the presentation of the materials selected for the study as well as the criteria adopted to carry out the survey. The analysis of data is presented in section 4, which is followed by the final section 5 containing the concluding remarks.

Isabel Moskowich is a member of the English Department, University of A Coruña, Spain.
[1]Matthews, 3.
[2]Dalton-Puffer, 2.
[3]Biber, 1.

2. A Brief Discussion of "Early Scientific Writing"

Biber characterises scientific writings as 1) carefully planned and revised texts, 2) addressed to an audience of scientists never referred to and 3) composed with the purpose of presenting information. From a linguistic point of view, scientific writings 4) contain grammatically complete and complex sentences, 5) including technical vocabulary, 6) complex noun phrase constructions and 7) passive constructions. It is worth mentioning that not all these seven characteristics are to be found in the emerging scientific writing tradition we are going to analyse though technical vocabulary is to be easily recognisable.[4] Halliday, on the other hand, in his 1988 article entitled "On the Language of Physical Science", claims that the English scientific register begins with Newton's works in the seventeenth century and rejects the relevance of the lexical subsystem of the language when examining the scientific register;[5] he puts the emphasis on its lexico-grammatical features instead. What is more, he argues that a realignment of elements occurred at the very birth of the register and obviates the idea of the "creation of a specific discourse". He also mentions nominalisations as a resource in the construction of this new discourse.[6]

Though Halliday's opinions can be applied to works written from the beginning of modern science (seventeenth century) onwards, we think that earlier works require a different approach. Pre-modern scientific writing was modelled on scholastic and, consequently, classical patterns. In addition, the external circumstances of the late Middle Ages and sixteenth century point to English as a national language in process of development. The vernacular contained lexico-semantic gaps which were covered by adopting lexical items from other languages. This brings us to the subject we are going to study in this paper: vernacularisation in early scientific writing as observed in grammar. According to Voigts and Taavitsainen, this process was initiated in 1375 and therefore we have selected works that belong to the very beginning of the process for our survey so that we can investigate the degree of vernacularisation they display through the study of derivational morphology (a lexico-grammatical feature).[7]

Section 3 will deal with the material selected for the present study, but it is important to know that the texts in our corpus belong to two different levels of scientism depending on the intended audience: the medical book is a compilation of

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[4]If we apply these requirements to the texts in our survey, we could conclude they fail to meet conditions 2) (Chaucer mentions his son Louis), and 7) (passives are not frequent constructions).

[5]Halliday, "On the Language."

[6]Nominalisations are believed to have encouraged the change of focus in scientific discourse from the experimenter to the experiment (Bailey). Authors such as Görlach (*English in Nineteenth-Century England*) and Kytö, Rudanko, and Smitterberg also agree that a change occurred towards objective description, from personal to impersonal accounts. All this would not happen until the nineteenth century, which suggests that before that time the style used was much closer to a general audience.

[7]See Voigts; and Taavitsainen, "Science." This vernacularisation of science has since evolved into the internationalisation of English as the language of science, to the extent that many may feel that their work is rejected not because it does not meet scientific standards of quality but because of the writer's inadequate command of English (Carter-Sigglow, 764).

recipes addressed to practitioners requiring a clear and simple language (the Germanic format or, in Halliday's words, the ''Attic style''[8]). They represent the written formulation of an everyday activity such as curing illnesses. The astronomy texts belong to the instructional category, representing a more academic prose. They are more than basically informative and a certain degree of literacy on the reader's part was necessary to understand the explanations contained in the texts. They reflect the inherited classical format (''the Doric style''). Though both are still experimenter-rather than experiment-centred, both try to convey in English ideas that were usually transmitted in Latin. All these texts are not representative of what we think of as empiricist writing, based on induction, though their descriptive, instructional tone cannot be classed as deductive either. What we are looking at is a more discursive and explicative prose, and in that sense one closer to writings of Huygens than those of Newton.[9] But, as we will see, depending on their intended readership, morphological adaptation will be different in each case. Nowadays, non-native scientists writing in English (like myself) often tend to transfer the discourse patterns of their native language to English.[10] In late Middle English, it was Latin discourse patterns, together with some other linguistic features, which were transferred into English since Latin was the language of science.

3. Corpus Material and Procedure

The samples selected comprise material extracted from texts that can be ascribed to two different scientific disciplines: on the one hand, medicine, represented by an edition of MS H Glasgow, University Library MS Hunter 185, described in Young and Aitken under the heading *Flora medica, Latine et Anglice, etc.*,[11] a compilation of medical recipes. On the other, astronomy is represented by extracts from Chaucer's *A Treatise on The Astrolabe*, as edited by the Early English Text Society, and an extract from *The Equatorie of Planetis*, taken from the *Helsinki Corpus of English Texts* (HC).[12]

   Our samples contain 42,332 words in all. Both writing traditions are, roughly speaking, equally represented, the medical recipes sample containing 20,788 words and the astronomy texts 21,544 words. As Table 1 shows, there is an almost equal percentage of nouns in the samples for both disciplines (21.71% for medicine; 21.98% for astronomy).

   As various authors have already agreed,[13] lexicon is the linguistic aspect that best represents the peculiarities of scientific discourse. Dahl also emphasises the difference

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[8]Halliday, ''Some Grammatical Problems.''
[9]Banks, ''Your Very First ESP Text.''
[10]Wood.
[11]Young and Aitken, 131 – 2. We are indebted to Dr Alonso Almeida who kindly allowed us to use the typescript of his forthcoming edition. This work is henceforth referenced in this article as *Remedy Book*.
[12]Chaucer; Rissanen, Ihalainen, and Kytö. These works are henceforth referenced as *The Astrolabe* and *Equatorie*, respectively.
[13]Sager, Dungworth, and McDonald; Biber.

Table 1 Nouns in our Corpus

Sample	Number of words		Number of nouns		%	
Old medycynes	20,788		4,514		21.71%	
Astrolabe	14,908	21,544	3,428	4,736	22.99%	21.98%
Equatorie	6,636		1,308		19.71%	
Total	42,332		9,250			21.85%

between general and special languages when he states that "the pragmatic aspects of a special language imply special knowledge of the subject field dealt with, which then is reflected in a high density of special lexemes or terms".[14] We have focused our attention on nouns for the present study of the morphology (affixation) of early scientific writing because, as has been demonstrated elsewhere,[15] nouns are typically found in pieces of discourse in which the transmission of ideas, not the description of actions, is intended, hence their abundance in scientific writing.

It is important to note, however, that although our study focuses on the lexical class "nouns", names have been almost totally excluded: names do not perform the role in special languages described for nouns above. Moreover, as stated by Anderson and Colman, they are not a sub-class of the class "noun" but have, rather, a status similar to that of pronouns.[16]

Table 1 displays the number of nouns in our corpus per text and discipline.

4. Analysis of Data

Since our survey will concentrate on derivation, suffixation mainly, we have applied the following labels to classify the different types of tokens found. "Der" stands for derivation, which includes all forms containing suffixes and/or prefixes; "simple" refers to forms which have not undergone any word-formation process at all; "other" includes compound nouns, collocations and dubious cases for which ascription to a process is not so evident. This is the case of *seed medlet* in example (1) in which we observe both compounding and derivation:

(1) …þat is before said euery day of þe iij & a penywight of þat seed medlet togedere. (*A Middle English Remedy Book*, recipe 109)

We have also excluded from our analysis cases of morpho-phonological adaptation, such as x-drop in *effect* (from Lat. *ex-facere*) and have considered them

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[14]Dahl, 85.

[15]Sager, Dungworth, and McDonald; Crespo García and Moskowich-Spiegel Fandiño; Moskowich-Spiegel Fandiño and Crespo García.

[16]Anderson, *Linguistic Representation*; *A Notional Theory*; Anderson and Colman, 9.

not to be derivative since such process is not attested in English but already in the source language.

4.1. Morphological Processes and Etymology

We have tried to establish a connection between derivational processes and etymological origin in our analysis. A first step for the analysis was the ascription of the different tokens to the processes already mentioned. Table 2 displays the totals corresponding to the processes found under these labels in each individual sample and discipline.

We find that the type of process is directly related to the type of text analysed. Nouns with no process whatsoever ("simple") by far outnumber those with derivation or any other process in all text-types. In the case of medicine, the 3,568 tokens with no process (79.04%) reflect the predominant native etymology of the nouns, which is consistent with the type of audience to which the text is addressed (bearing in mind that the text in question is a collection of medical recipes belonging to the English remedy book tradition and having definite practical application).

Morphological processes other than derivation come second. Astronomy texts (16.46%) contain more of these complex forms than the medical text (11.85%). This can be accounted for in terms of the same two variables mentioned above (etymology and type of audience), since these texts are less informative than the remedy book.[17] The astronomy texts contain more Latin and French elements and more complex linguistic processes affecting nouns, which is also why derivation is more abundant in astronomy (15.6%) than in medicine (9.1%).

Table 2 Morphological Processes

Sample	Total tokens	Der[1]	%	Astr[2]	Simple[3]	%	Astr	Other	%	Astr
Old medycynes	4,514	411	9.1		3,568	79.04		535	11.85	
Astrolabe	3,428	545	15.89	15.6%	2,433	70.97	69.96%	449	13.09	16.46%
Equatorie	1,308	194	2.09		882	67.43		331	25.3	
Total	9,250	1150	12.43		6,883	74.41		1,315	14.21	

[1]Der=derivation.
[2]Astr=astronomy.
[3]Simple=no word-formation process.

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[17]According to Taavitsainen, "Transferring Classical Discourse," texts can be classified into three different layers or levels of "informativeness", represented by commentaries, compilations and question-answer formulae.

A closer analysis of our variables appears in Table 3 where the relationship between etymological origin and text-type is examined in greater detail. For etymological origins we have resorted to the information contained in the *MED*,[18] even though we do not always agree with the origins provided there.

Our decision to consider etymology as a variable deserving some attention as having some morphological implications is partly based on Lenski's assumption that:

> the importation of Latinate vocabulary occurred on such a large scale that it has affected not only the lexicon of English, but its phonology, syntax, and morphology as well.[19] In the latter domain, its effect has been particularly strong and lasting, since many of the Latinate loan words, in particular the scientific and abstract vocabulary, were morphologically complex.[20]

Taking into account the data obtained earlier in our analysis, the predominance of Romance forms in the astronomy samples was to be expected. Out of a total

Table 3 Etymologies

Origins	Medicine	Astronomy	Total
AF	2	33	35
AF&L	1	0	1
AF&OE	0	1	1
AL	2	0	2
AL&OF	4	0	4
L	15	40	55
L&OF	1	175	176
ML	5	1	6
ML&OF	3	4	7
ML&ON	1	0	1
OE	161	102	263
OE&OF	2	0	2
OF	168	178	346
OF or ML	0	9	9
OF&AF&L	0	1	1
OF&L	4	192	196
OF&L&OE	4	2	6
OF&ML	33	1	34
ON	3	0	3
ON&OE	2	0	2
Total	411	739	1,150

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[18]Kurath et al.

[19]In Lenski the term "Latinate" refers both to Latin and Greek, whereas we employ the term Romance in the classical sense, that is, to refer to Latin and its daughter languages.

[20]Lenski, 1.

of 739 tokens, only 102 derivative nouns are of OE provenance (*thyknesse*, *lengthe*, *widnesse*). Once again, the explanation can be found in the intended readership of each text-type. Another important point to remember is that classical affixes function as social distance markers: classical elements differentiate special languages from ordinary speech.[21] The introduction of derivative forms with elements of Latin and French extraction increases the number of polysyllabic words, which in turn has stylistic effects on this kind of academic prose. Banks reminds us of Newton's use of different discourse tools to convey scientific knowledge depending on his desire to be understood by a general readership (employing plain vocabulary of Germanic origin as far as possible, for instance in his work *Opticks*) or by just a small community of scientists (polysyllabic forms of classical provenance, as in his *Principia*).[22]

Surprisingly, our analysis of derivative nouns reveals that Romance forms (those recorded in the *MED* as AF, AF&L, AL, AL&OF, L, L&OF, ML, ML&OF, OF and the like—243 tokens) outnumber OE and ON native forms (168 tokens) in both disciplines. The reason for this is twofold: as already mentioned, most native words are simple (see Table 2 above), and although Romance types are few, their corresponding tokens are not so, as illustrated by some high-frequency nouns such as *pynpernell*, *oynement*, *liquour*, *quantite* in examples (2) and (3).

(2) Þanne, take pympernell, grynd it smale, do þerto leue hony & make a plaster. (*A Middle English Remedy Book*, recipe 21)
(3) Make an oynement þerof, anoynte þe sore þerwith & ley a weybrode lef aboue þe bakside toward þe sore. (*A Middle English Remedy Book*, recipe 24)

4.2. Two Approaches to Derivation

We mentioned at the beginning Dalton-Puffer's description of the general view of Middle English morphology as "patchy". As a first step, we have revised her own 1996 study in which she proposes the group of suffixes listed in Table 4. These suffixes have been classified as G for those of Germanic origin, and R for Romance origin. Table 4 also includes the occurrences of these suffixes in our samples.

Using her classification, we find that the most common derivational suffix recorded in our samples is the form *-acioun* with the corresponding spelling variants < *(a)cion, (a)cioun* > and the morpho-phonemic variant *-ation*, though it is without question more abundant in the *Astrolabe* than in the other texts. One of the terms containing this suffix is *mediacioun* occurring in example (4):

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[21]Pérez Iglesias, 42–3.
[22]Banks, "Your Very First ESP Text," 70.

(4)   Thanne hastou a brod Rewle, Þat hath on either ende a Square plate perced with
     a certain holes, some more & some lesse, to resseyuen the stremes of the sonne
     by day, and ek by *mediacioun* of thyn eye, to knowe the altitude of sterres by
     nyhte. (*Astrolabe*, 7:8 – 12)

Although Adams holds that ''verbs in *-ate* have nominalized forms in *-ion*:
oxygenation. *-ation*, attaching to bases ending in an unstressed syllable, is the
preferred suffix for denominal or deadjectival verbs in *-ify* and *-ize*: *computerization*,
acidification'',[23] we have found reverse cases (*mediate* is recorded later than
mediation—1542 and 1425, respectively—in the *OED*, for example).

Table 4 Suffixes Proposed by Dalton-Puffer (73 – 131)

Suffixes	Origin	*Med*	*Equatorie*	*Astrolabe*	Total
dom <dome(e), dam>	G	0	0	0	0
hede <had(e), hat, head, heed, ho(o)d, hiede>	G	0	0	0	0
Lac <lec, leac, lacke, leȝȝe>	G	1	0	0	1
ness < nesse, nes, nisse, nysse>	G	6	4	4	14
reden <redden, ræden>	G	0	0	0	0
ship <schipe, chipe, scipe, schepe, shippe, sipe>	G	0	0	0	0
th <Te, th(e), þe>	G	0	2	42	44
ung <ing, yng(e)>	G	68	8	68	144
acioun < (a)cion, (a)cioun, ation>	R	14	11	193	218
Acy <acie>	R	0	0	0	0
Age	R	13	3	4	20
Al	R	0	0	35	35
aunce <ance, ence, aunse>	**R**	6	16	27	49
erie <rie, ry(e), ie>	R	0	0	0	0
ite <itee, ete, te>	R	32	7	27	66
ment	R	28	16	19	63
El <els, le>	G	56	0	3	59
end	G	0	0	0	0
Ere <er>	G	44	0	5	49
Ester <ester, stre>[1]	G	0	0	0	0
Ild <ilt, ilde>	G	0	0	0	0
ling	G	0	0	0	0
Ant <ent>[2]	R	0	12	42	54
Ard	R	7	0	0	7
Ary <arie>	R	4	0	0	4
erel	R	0	0	0	0
esse <ess>	R	1	0	0	1
our[3]	R	31	0	6	37
	R	311	79	475	865

[1]We have also included *-ist, -istre* forms here.
[2]We have also *included -aunt* forms here.
[3]We have also included the form *-or* here.

[23]Adams, 28.

Two reasons may account for the predominance of this suffix in our samples. In the first place, the ''abstract'' nature of the suffix, from a semantic point of view: ''the state or condition of…'' as presented in example (5) below:

(5)   tak ther the verrey place (\(locum)\) of the # planete in the .9. spere/and the ark by twixe the verrey place (\(locum)\) of the # planete (in limbo) & the verrey place of the epicicle considered in the lymbe is # cleped *equacioun* of his argument this maner of *equacioun* is for saturnus # Juppiter mars & venus. (*Astrolabe*)

Secondly, the use of a relatively good number of nominalisations employing the so-called grammatical metaphor[24] should be also taken into account. The fact that the suffix is of Romance origin is consistent with the reasons proposed for the relationship between Romance forms and the type of intended audience mentioned earlier.

Suffix *-ung* and its allomorphs *-ing*, *-yng* occupy the second position in the frequency of occurrence. In this instance, *-ung* exemplifies a suffix of native provenance with the same number of tokens in both the *Remedy Book* and the *Astrolabe*. It is found as an abstract suffix (*bledyng*, *arising*) forming deverbal nouns by a process of nominalisation as illustrated in (6) and (7):

(6)   For bledyng at þe nose a good medicine. Tak brokelempe, smalache, herbe Robert & Zef him to drynke. (*A Middle English Remedy Book*, recipe 85)
(7)   Upon which table/there folewith a canoun suffisant to teche as wel the manere of the worchynge of the same/conclusioun as to knowe in oure orizonte with/which degre of the zodiak that the mone arisith/in any latitude, and the *arisyng* of any planete/after his latitude fro the ecliptik lyne. (*Astrolabe*)

The Romance suffix *-ite* and its variants < *-itee, -ete, -te* >, though occupying the third position in our frequency scale, represent fewer cases. Tokens in the medical recipes outnumber those in the *Equatorie*, but the number is proximate to that in the *Astrolabe*. The abundance of forms containing the suffix *-ite* is understandable if we take into account the high number of tokens corresponding to ten types (*quantite*, *superfluite*, *abilite*, *felicite*, *natiuete*, *utilite*, *qualite*, *curiosite*, *dignite*, *uanite*). Even though *-ness* has been said to rival with *-ite* in the formation of abstract nouns denoting state or condition,[25] our findings indicate that the seven types containing *-ness* (*colnese*, *streitness*, *wydnesse*, *thykkenesse*, *costifnes*, *defnesse*, *sekenesse*) are represented by 14 tokens (see Table 4). It is not surprising, however, to find the suffix *-ite* in the *Astrolabe*, where Latin and OF are the etymological origins *par excellence*

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[24]Halliday, ''On the Language,''; ''Some Grammatical Problems''; Banks, ''Your Very First ESP Text.''
[25]Pérez Iglesias, 169.

among derivative nouns. It would appear that the -ite suffix does not combine freely with all bases in English. Even at the time our texts were produced it seemed to prefer Romance bases and its behaviour appears to have been more or less the same since, when combined with other morphemes, these are preferably Latinate or neo-classical formations such as *electricity* or *authenticity*.[26] The number of occurrences of -ment (63) and -el (59) can also be explained with reference to the type/token ratio.

To our understanding, however, a more complete account of Middle English scientific writing morphology calls for a study of all affixes. From our survey we can add other affixes (12 suffixes and 6 prefixes) that we encountered which were not mentioned by Dalton-Puffer.[27] They are displayed in Table 5.

Burnley points out that ''in the Middle English period prefixation as a means of word formation was in retreat'',[28] mainly due to the tendency towards analytical constructions.[29] Burnley believes that the low number of prefixes was also due to the persistence of derivational suffixes, the number of which increased with the addition of others of foreign provenance.[30] Five of the six prefixes found are of Latin and Greek origin,[31] which is consistent with Marchand's statement that these types of

Table 5 Our Affixes

	Medical recipes	*Equatorie*	*Astrolabe*	Astronomy	Origin	Total
Arch-	1	0	0	0	R	1
By-	0	0	1	1	G	1
Dia-	0	8	1	9	R	9
Eu-	3	0	0	0	R	3
Epi-	0	61	1	62	R	62
-et	12	0	1	1	R	13
-ful	52	0	0	0	G	52
-ic	2	0	0	0	G	2
-ille	6	0	0	0	R	6
-ise	10	0	0	0	R	10
-ole	3	0	0	0	R	3
-ory <orie>	3	12	1	13	R	16
-ose	2	0	0	0	R	2
-ot(e)	1	0	0	0	R	1
-oun	0	34	19	53	R	53
Poly-	3	0	0	0	R	3
-ude	0	16	158	174	R	174
-ure	1	0	44	44	R	45
Total	99	131	226	357		456

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[26]Marchand, 252.

[27]Dalton-Puffer.

[28]Burnley, 446.

[29]Hiltunen.

[30]Burnley, 447.

[31]In the astronomy texts, especially, there are many terms containing the Arab prefix al-, mainly to designate names of stars and constellations (*aldeberan, algomeysa, alhabor, almenak, almykanteras, almury*).

prefix are most frequently found in learned, scientific words in combination with bases of the same provenance.[32] In fact, of the six prefixes found, it is *epi-* which shows the highest number of occurrences (62 tokens), all of them in the astronomy texts: for instance, *epicicle*. By contrast, the Romance prefixes found in medicine (*eu-*, *arch-* and *poly-*) are part of nouns used as ingredients in the recipes. Such is the case of *eufrace*, *polypodie* and *archangel*.

The only Germanic prefix recorded is *by-*, with a single occurrence in Chaucer's *Astrolabe* (*by-hestes*). It has been considered a prefix because at the time the text was written *by-* was still a productive affix.[33] However, some authors believe that in present-day English these words should not be considered compositional forms since they are "stored whole in the lexicon—they are memorized".[34]

Our results show a large number of Romance affixes, even in the *Remedy Book* (a compilation of traditional medical recipes), which is supposedly addressed to a less learned audience. This contradicts our results for other studies on the same or similar material[35] since our starting point is radically different: in that article we consider only those formations that were new in Middle English whereas here, adopting Dalton-Puffer's methods, we have included all formations regardless of whether the derivative process occurred in English or in the source language.

Our figures reveal that affixes such as *-ude*, with 174 tokens in astronomy, cannot be ignored. The very high level of repetition of terms such as *longitude* or *altitude* seems to illustrate one of the characteristics of scientific writing: repetition in order to avoid confusion and to make sure the transmission of ideas takes place with no interference or misunderstanding. This *-ude* suffix is, it would seem, from Latin extraction in the same degree as *-acion* and, notwithstanding, is never mentioned in Dalton-Puffer's account.

Other suffixes, such as *-ful*, *-oun* and *-ure*, are likewise ignored. Suffix *-ful*, of Germanic origin, occurs in 52 tokens represented by just four types (*handful*, *saucerful*, *schelleful* and *sponeful*). Though *-ful* is normally attached to adjectival bases to form nouns,[36] this is not the case here. It is a recent suffix, originating from the syntactical group "a N full (of something)".[37] Suffix *-ful*, therefore, is added to countable nouns to form other countable nouns with the meaning "the amount contained in".[38]

The Romance suffix *-oun/-ioun* occurs in both disciplines but it is found principally in the *Astrolabe* (*ascensioun*, *conclusioun*, *condicioun*, *depressioun*, *descencioun*, *descripcioun*, *deuision*, *solsticioun*, etc.), followed by the *Equatorie* (*composicioun*, *disposicioun*, *fraccioun*, *successioun*) and the *Remedy Book* (*corrupcioun*).

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[32]Marchand, 353.
[33]Ibid, 146.
[34]Aronoff and Fudeman, 105.
[35]Moskowich-Spiegel Fandiño and Crespo García.
[36]Adams, 37.
[37]Marchand, 292.
[38]Quirk et al., 1548.

Affix *-ure* is a weak suffix added to stems ending, mainly, in *-t* and *-s* (*spature, brusoure, mesure, stature, auenture*). Forms containing this suffix are usually loans from French.[39]

5. Conclusions

The study of scientific lexicon from the point of view of derivational morphology does not demonstrate any great advance in the vernacularisation process at the end of the fourteenth century. Rather, it shows how English scientific writing adopted vocabulary from other languages although the combination of bases and affixes of different provenance cannot be attested yet. In other words, terms were adopted as whole entities, because the addressed readership was not yet credited with the resources to understand them as analysable structures. As a consequence, it took time before smaller units were assimilated as reusable elements to create hybrid formations.

As Wood states "the patterns of discourse in science are provided by the patterns of argument in science, which is given by the structure of the discipline itself".[40] On the basis of the results of our analysis, we can also argue that these same patterns of discourse supply the patterns of derivational morphology in written science. Moreover, scientific writing acts as a response to "the changing needs of the audience". In our study, we have observed that the patterns of derivative morphology, applied not only in each discipline but also in each text layer, conform to the needs of the readership. Texts can, therefore, be ascribed different levels of informativeness according to their settings or context: "texts occur and are understood in their discourse settings [...] which are necessarily engaged in interpretations".[41] The readership's command of morphological devices can be viewed as one of the extra-textual settings of the samples under survey.

Finally, it is claimed that, at the beginning of the fifteenth century, "discrimination of social class could be made in English by knowledge of the terms of particular fields of discourse considered appropriate to a gentleman."[42] Both the development of the scientific disciplines and the readership's command of particular linguistic devices (morphology in this case) can be treated as part of the settings we consider strategies indexical of in-group markedness.[43]

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[39]Marchand, 350.
[40]Wood.
[41]Widdowson, 63.
[42]Burnley, 457.
[43]Poplack.

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