

**Borrowings, Derivational Morphology, and Perceived Productivity in English,
1300-1600**

by

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A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(English Language and Literature)
in The University of Michigan
2009

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ACKNOWLEDGEMENTS

There are a number of people who deserve my deepest gratitude for guiding me through this project:

My chair, Anne Curzan, whose encouragement, thoroughness, patience, and insight have been boundless;

The members of my committee, Richard Bailey, Sally Thomason, Karla Taylor, and Michael Adams, who have been supportive all along, especially when reading early chapter drafts and responding to my pesky e-mails;

Susan Fitzmaurice, Donka Minkova, and David Denison, whose comments on early versions of Chapter 3 helped me produce an article for the 2008 collection, *Studies in the History of the English Language IV: Empirical and Analytical Advances in the Study of English Language Change*. New York: Mouton de Gruyter;

Jorie Woods, Martin Camargo, and Basil Duffalo, who directed me towards some excellent sources on classical and medieval approaches to word-formation;

Chris Powell, whose assistance with the digital texts accessed in Chapters 4 and 5 has been invaluable;

Ute Romer, Matt O'Donnell, and Nick Ellis, who helped me manage the chaos of corpus evidence used in Chapter 6;

Lingling Zhang and the rest of the folks at the Center for Statistical Consultation and Research, who helped me design statistical tests for the various empirical analyses in this study;

The London Goldsmiths and the British Library, for allowing me to consult some impressive medieval manuscripts;

The Michigan English Department, who funded my travel and research for this project numerous times;

And Patricia Palmer Bell and Dennis Palmer, without whom I never would have made it this far.

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Abstract

Borrowings, Derivational Morphology, and Perceived Productivity in English, 1300-1600

This dissertation examines how borrowed derivational morphemes such as *-age*, *-ity*, *-cion*, and *-ment* became productive in the English language, particularly in the fourteenth through sixteenth centuries. It endeavors to expand our current understanding of morphological productivity as a historical phenomenon--to account for not only aggregate quantitative measures of the products of morphological processes, but also some of the linguistic mechanisms that made those processes more productive for language users. Judgments about the productivity of different suffixes in the late ME period cannot be made on counts of frequency alone, since the vast majority of uses were not neologisms or newly coined hybrid forms but rather borrowings from Latin and French. It is not immediately clear to the historical linguist if Middle English speakers perceived a derivative such as *enformacion* as an undecomposable word or as a morphologically complex word. By examining usage patterns of these derivatives in guild records, the Wycliffite Bible, end-rhymed poetry, medical texts, and personal correspondence, this project argues that several mechanisms helped contribute to the increased transparency and perceived productivity of these affixes. These mechanisms include the following: the use of rhetorical sequences of derivatives with the same base or derivatives ending in the same suffix; the frequent use of derivatives as end rhymes in poetry; the lexical variety of derivatives ending in the same suffix; and the more frequent use of certain bases compared to their derivatives. All of these textual and linguistic features increased readers' and listeners' ability to analyze borrowed derivatives as suffixed words. Ultimately, the dissertation finds that several borrowed affixes were seen as potentially productive units of language in the late ME period, though some were seen as more productive than others in different discourses and contexts. It also emphasizes the value of register studies for understanding the specific motivations for the use of borrowed derivatives in different discourses, as well as the morphological consequences of salient usage patterns within different registers.

Chapter 1

Introduction

In Present Day English (PDE), a number of affixes that were originally restricted to borrowings from other languages are now productively used to coin a variety of new words. The suffix *-age*, for example, has recently shown up in a number of innovations in a range of registers and communities. According to the *Oxford English Dictionary (OED)*, in the 1970s in North America, *signage* ('signs collectively, esp. public signs on fascia boards, signposts, etc.') seems to have emerged in official, governmental contexts and spread to a more general usage. In computer gaming communities, the word *ownage* has been coined to express one opponent's strong victory over another, as evidenced in the following definition from the website *Urban Dictionary*: 'The act or state of perpetrating fierce and unholy domination against another, typically in a videogame setting, resulting in shame and embarrassment [sic] for the victim and his/her family until the end of time.'¹ Currently, the use of *ownage* has been extended beyond gamer communities; one now finds real-life instances of *ownage* (people pulling pranks on one another, people falling while skateboarding, etc.) on such sites as <http://www.ownagevideos.com/> (October 2006). Even though they are less widespread, individual playful applications of *-age* appear. In 2005 the employees at a deli in Ann Arbor, Michigan labeled their tip jar with "TIPPAGE: Supporting Counter Intelligence

¹ This is the second most popular definition, provided by user ghostpigeon on July 23, 2005.

since 1738.” While this specific example may not gain wider currency, these varied innovations demonstrate how much PDE speakers (particularly in North America) perceive *-age* to be a productive, useful affix.

In the history of the English language, *-age* did not always have the productive, morphemic status it has today. Indeed, like other borrowed derivational affixes such as *-(c)ion*, *-ance*, *-ity*, and *-ment*, it appeared on a restricted set of borrowings from Latin and French in the medieval period, such as *baronage*, *frontage*, and *baggage* (Marchand 1969: 234-6). Because these endings were likely seen initially as mere word-endings rather than potentially meaningful suffixes, they were not immediately combined with native bases to produce innovative forms. How, then, did speakers and writers come to perceive *-age* and other endings as (potential) English suffixes?

The preceding question about the development of borrowed derivational morphology has been, for the most part, largely underinvestigated in previous studies of the history of the English language. This is despite the fact that there has been significant scholarly interest in the massive number of borrowings which have come into English, particularly from French and Latin.² Serjeantson (1961) provides comprehensive detail on the array of borrowings coming from these languages into English from a number of lexical fields, including religious, economic, political, and scientific discourses. More recently, in essay collections such as *Multilingualism in Later Medieval Britain*, scholars such as Crespo (2000) have used corpus studies to explore the impact of French on the Middle English (ME) vernacular, including the use of borrowings in specific lexical

² It is not always possible to determine whether borrowings are strictly from Latin or French, as many English borrowings have possible etymons from both languages (e.g., *tailage*, *conclusion*). When such a distinction needs to be made, this dissertation relies on the etymological work from historical dictionaries such as the *Oxford English Dictionary (OED)* and the *Middle English Dictionary (MED)*.

fields such as TRADE. Coleman (1995) has surveyed previous scholarship on French and Latin loanwords in English, noting that many studies have found that borrowings from French peaked in the late fourteenth century.³ She argues that loans from Latin peaked in the late fourteenth and early fifteenth centuries, according to data in the *Middle English Dictionary (MED)*.⁴ And she proposes that the “[a]ssimilation of Latin loans took place more rapidly than assimilation of French loans,” which can be observed “in the form of semantic development, affixation and naturalization” and “was most marked during the fourteenth and fifteenth centuries” (1995: 122-123). Clearly, there has been substantial scholarly interest in the massive number of loanwords from French and Latin, especially those coming into English during the ME period. But as scholars have catalogued and analyzed such borrowed words as *marriage*, *diversity*, *devotion*, and *merciment*, they have tended to give significantly less attention to the endings of these lexemes—that is, borrowed morphemes such as *-age*, *-ity*, *-tion*, and *-ment*. How did these endings become independent units of language in the history of English?

Data from historical dictionaries, such as the *Oxford English Dictionary (OED)*, establish that these suffixes have certainly become both productive and “English,” though likely at different points in history. One type of evidence can be found by locating English derivations which are not attested in Latin or French, such as *banishment* (sixteenth century) or *wreckage* (nineteenth century).⁵ But such evidence is limited by the fact that it is often difficult to determine with certainty that an etymon for a particular lexeme was never used in Latin or French. Historical dictionaries in the source language

³ Coleman also finds from her own data on the lexical fields of LOVE, HATE, SEX and MARRIAGE that the peak period of borrowing may have been earlier, possibly the late thirteenth century.

⁴ Data from the *OED* in Coleman’s study suggest a later peak for Latin borrowing, the early sixteenth century.

⁵ Attestation dates in this section are taken from *OED*.

can be of assistance, but it is always possible that such derivations may have been used in the donor languages but never written down. Even so, there are some examples which seem almost certainly English:

1542 N. UDALL tr. Erasmus *Apophthegmes* 123^v, Hauyng in his mouth..the said forges vocables of the Idees, as for example, **tableitees**, for the facion of table.

In this case, Nicolas Udall has coined the term *tableity* to form a nominal signifying the abstract quality of being a table. Its potential competitor *tableness* is not attested until much later, in the nineteenth century. Even though the *-ity* derivative is formed on a borrowed base, there are no likely etymons for this derivation. Udall clearly perceives *-ity* to be a productive English suffix for forming abstract nominals.

A different sort of evidence appears when English speakers and writers in different periods begin to combine these foreign suffixes with native bases. One of the most evident cases of such hybrid mixing can be seen with *-age*, which English speakers have used to innovate a number of forms such as *breakage* (first attestation in the nineteenth century) and *poundage* (fifteenth century). Hybrid forms with other borrowed nominal suffixes such as *-(a)tion*, *-ity*, and *-ment* have been generally less common, though each has been observed in a number of hybrid derivations. In the eighteenth century, one begins to find the use of both *flirtation* and *starvation*. A few now obsolete hybrids with *-ment* (e.g., *onement* ‘unity, agreement’, *cursement* ‘cursing’) begin to appear in the late fourteenth and fifteenth centuries, while hybrids from later centuries such as *acknowledgement* (sixteenth century) and *shipment* (nineteenth century) have endured into Present Day English (PDE). The suffix *-ity* has perhaps been the most

resistant to producing hybrid formations, though it too appears in a few (often playful) formations:

c1680 AUBREY *Lett. Emin. Persons* (1813) II. 537 Our present writers reflect so much upon particular persons, and **coxcombeities**, that 20 yeares hence they will not be understood.

1824 MISS MITFORD *Village* (1863) 20 A little ruinous cottage, whitewashed once, and now in a sad state of **betweenity**.

Even though hybrids with borrowed suffixes are relatively infrequent in the history of English, it is clear that at different points speakers have perceived each of these morphemes as productive enough to attach to native lexis.

There are some curiosities about the diachronic development of such productivity. Throughout the Middle English period and into Early Modern English (EME), speakers were increasingly borrowing derivations from Latin or French which ended in *-age*, *-ity*, *-cion*, and *-ment*. And yet, hybrids with several of these suffixes do not appear until much later stages of English. In terms of attestations, hybrids with *-ity* and *-tion* are seemingly non-existent before the seventeenth century, and hybrids with *-ment* are very rare before the sixteenth century. Hybrids with *-age* do appear occasionally in Middle English. The lexeme *wharfage*, for example, is first attested in the *MED* in the early fifteenth century. But it is possible that this derivative, too, is a borrowing from Anglo-Latin *wharvagium* rather than a derivation composed of the suffix *-age* plus a native base *wharf*. The increasing use of borrowed derivations in ME and EME surely influenced the eventual productivities of these suffixes in English. But if hybrid forms are so scarce

during this period, what other forms of evidence can be found to illustrate how these suffixes might have come to be seen as productive in English usage?

It is possible, of course, that bi- or tri-lingual speakers in the ME period may have perceived these endings as productive in English. When Gower uses *sublimation* in the *Confessio Amantis*, for example, his fluency in Latin and French may have encouraged him to perceive the lexeme as decomposable—that is, as a derivation involving a suffix *-ation* attached to a verbal base *sublime*. But it is not the case that monolingual English audiences encountering *sublimation* in Gower or elsewhere (such as vernacular scientific texts) would necessarily recognize the suffix as an independent, productive unit of language. In order for borrowed suffixes to produce hybrid forms, there must have been some linguistic forces at work that compelled monolingual speakers to perceive borrowed derivatives as parsible entities rather than whole words, as morphologically complex forms ending with productive suffixes.

This dissertation takes an exploratory approach to such questions about borrowed derivations and morphology in the history of English. Its primary question is the following: how did particular endings on Latinate and French borrowings come to be seen and used as independent and potentially productive suffixes in the English language? To investigate this question, this study analyzes the use of borrowed derivations in a number of new vernacular genres emerging in late ME and early EME: guild records, Biblical prose, courtly end-rhymed poetry, medical texts, and personal correspondence. While adjectival suffixes such as *-able* and *-ous* are occasionally considered, the primary focus is on nominal affixes such as *-age*, *-ity*, *-tion*, and *-ment*. This study attempts to describe how these suffixes became integrated into the English

language as morphemes. Recognizing that each suffix's ability to produce hybrids has varied significantly over time, the dissertation develops methods for comparing the potential productivities of these suffixes within different communities in different sub-periods from the fourteenth to sixteenth centuries. In other words, it aims to illuminate the individual histories of each suffix in the language during late ME and early EME, particularly as they compare to the productive native suffix *-ness*. By employing a corpus-based approach, the study collects a variety of quantitative and qualitative evidence in different genres that provides further insight into the morphological structure of borrowed derivations. And, whenever possible, it identifies motivations for the use of borrowed derivations in different discourses as well as signs of increasing naturalization—that is, a perceived loss of foreignness in the English lexicon—among derivatives and suffixes.

The period 1300-1600 was chosen in particular because it is marked by a significant influx of borrowings from French and Latin. And yet, scholars have not thoroughly examined the morphological effects of these borrowings during this time. Even recent corpus studies of borrowed derivational morphology have mostly focused on other periods. Dalton-Puffer's (1996) study of ME morphology ends at the beginning of the fifteenth century, and Cowie's (1998) dissertation focuses mainly on the sixteenth through eighteenth centuries. Lloyd (2005) addresses *-ment*, *-ance/-ence*, *-age*, *-ation*, and *-al* in ME and EME, but her interest is primarily in semantic development rather than productivity. Kaunisto (2007), focusing strictly on lexemes ending in *-ic/-ical* from a lexicological perspective, derives his data primarily from EME to the present day. And while Anderson (2000) presents a comprehensive study of derivational productivity, her

coverage is broad (from the twelfth century to the present day), centered mostly on native suffixes and borrowed adjectival suffixes. None of these valuable studies has provided an in-depth examination of the potential productivity of borrowed suffixes, particularly nominal ones, in the fourteenth through sixteenth centuries.

There is also good reason to use corpus-based methods—and not just evidence from historical dictionaries such as the *OED* and *MED*—to answer questions about the integration of borrowed suffixes into English. Historical dictionaries certainly provide invaluable evidence for first (or at least early) attestations of hybrid forms and other innovations. But this evidence is always tempered by the fact that dictionaries are both partial and sometimes incomplete.⁶ Historical linguists still discover earlier attestations for different lexemes through corpus studies, and dictionaries never provide a comprehensive picture of all writers and communities that have used particular lexemes during particular periods. The *Cursor Mundi*'s and Chaucer's uses of *extorcion*, as attested in the *OED*, do not automatically suggest that all other English speakers in the late fourteenth century were also using, or were even familiar with, the lexeme. Detailed corpus studies can provide a clearer sense of the use of different words and affixes—particularly to determine if speakers were using particular words, how often, in what contexts, and why⁷—in different historical periods.⁸

⁶ Historical dictionaries do not aim to catalogue all uses of all lexemes in all genres, of course. They are necessarily limited in their focus since they provide an overview of attestations of all distinguishable meanings of all lexemes in the language.

⁷ This is not to suggest that corpus studies have no limitations. Particularly in the medieval period, records of different types of language use are often scarce or incomplete. But the point here is that corpus studies can help answer different types of questions than historical dictionaries—and historical studies typically do best when they draw on both types of evidence.

⁸ Of course, the *MED* provides a more comprehensive account of attestations of *extorcion* in the Middle English period than does the *OED*. But the caveat about overgeneralizing about the use of and familiarity with lexemes from attestation evidence in dictionaries alone still remains the same for both dictionaries.

There are also dangers to making judgments about morphological complexity on the basis of dictionaries and attestation dates alone. To take one significant example, both Dalton-Puffer and Lloyd assume a derivative is “analyzable” in English if the base is attested at an earlier date than the derivative. For instance, Lloyd (2005: 9) argues that *avauncement* is automatically analyzable because its first attestation follows the first attestation for ME verb *avancen*.⁹ The problem with this assumption is that the specific speakers using *avauncement* in ME may not have been using *avancen* simultaneously; if so, there is no reason to believe that the derivative was necessarily more analyzable for those speakers. The larger theoretical problem here is the tendency in much scholarship to cite one attestation of a base/derivative pair, or one or several hybrid forms, as evidence of global analyzability and productivity of the suffix in a particular period. In other words, analyzability and productivity are assumed for all speakers and communities at a particular point in time. However, it is entirely possible that several communities were not even using such hybrids, or that one speaker or community was using a borrowed derivative without its complementary base even if other contemporaries or other communities were. Put more simply, it is unwise to make macro-level judgments about the status of various suffixes without consulting the actual language being used in different, specific contexts—at least as much as we can consult actual language use.¹⁰ While historical dictionaries can establish whether or not hybrids and specific bases and derivatives were being used in different periods, corpus studies can focus in on particular

⁹ To her credit, Lloyd does not consider dictionary evidence alone in terms of establishing first attestations, though it is unclear in this and most examples whether or not her determination of first attestations is primarily driven by data from the *MED*.

¹⁰ Historical linguists are limited by available written records, which are often incomplete and small in size. And there are certainly major gaps in these records; one obviously cannot consult spoken recordings from the medieval or early modern periods.

communities and individuals to determine if and how often these speakers might have been using these lexemes.

Because the use of words and suffixes tends to vary across different time periods and communities of speakers, this dissertation assumes that productivity is a relative concept: a suffix can be more or less productive over time; a suffix can be more or less productive than another suffix; and, importantly, a suffix can be more or less productive from one individual or community to another. I agree with the conclusions of Kastovsky (1992) and Anderson (2000) that productivity is best described as a cline, a scalar measurement. Productivity is also assumed to be strongly dependent on analyzability: the ability for language users to decompose a derivative into a base plus an independent suffix. Native and borrowed suffixes alike can be more or less analyzable, and thus more or less productive, depending on a number of variables. This assumption has long been held by historical morphologists (e.g., Gadde 1910; Dalton-Puffer 1996; Anderson 2000; Lloyd 2005). And yet there are significant gaps in identifying the mechanisms by which suffixes, and borrowed suffixes in particular, came to be seen as analyzable in actual English language use. Dalton-Puffer (1996: 210-11) characterizes the problem in the field of ME morphology as follows (my emphasis in bold):

But the point here is not to argue that all the ITE and MENT formations were coined from adjectives and verbs current in Middle English “on a Middle English basis.” In many cases, if not in most, it is most likely that the derived noun was borrowed first, often as a technical term. What is crucial, though, is that even though chronologically speaking the noun was not always derived from ‘its’ verb or adjective in Middle English, **after a certain point, it could have been**. As soon as a pattern had acquired a particular strength in terms of a certain type/token frequency of derivatives and their possible bases in the language, these formations became analysable on a Middle English basis and could lead to new formations on a Middle English basis.

The primary interest of this dissertation is to uncover, as much as possible, some of the “certain points” by which borrowed suffixes came to be seen as productive components of these derivatives in late ME and early EME. While it considers evidence of identifiably new formations in different genres, it also diverges sharply from previous studies by focusing less on neologisms and more on qualitative and quantitative evidence of the suffixal analyzability that enabled neologizing in English. Because morphological analyzability has not been thoroughly investigated in the field, this study provides a more extensive analysis of how this phenomenon can be understood and measured in a variety of language contexts.

The assumption that analyzability correlates strongly with productivity is also supported in recent studies of frequency and its effects on grammar and the lexicon—namely Bybee (2007) and Hay (2003). Many morphologists (e.g., Aronoff 1976; Baayen 1992; Bauer 2001) believe that type frequency correlates in a significant way with suffixal productivity; Bybee (2007: 15) explicitly theorizes why type frequencies matter. She argues that as a speaker encounters a greater number of types ending in the same suffix (e.g., *damnation*, *salvation*, *ruination*, etc.), that speaker is far more likely to parse those derivatives and recognize the ending as an independent unit of language that can attach to multiple bases. Type frequency (also referred to here as *lexical diversity*) is distinct from token frequency, and each likely has different effects on productivity. In a study of *-ness* and *-ity*, Aronoff (1983) has demonstrated that lexemes with high token frequencies tend to be more lexicalized and associated with less productive suffixes. So, highly productive suffixes tend to be characterized by a high lexical diversity of types

with low token frequencies of each type, whereas relatively unproductive suffixes are more likely to produce fewer types, each with relatively high token frequencies. This is not a hard-and-fast rule in morphology, but scholars such as Baayen have accepted as standard in the field that productivity tends to correlate with lexical diversity.

But how is one to quantify productivity, to *measure* the rate of coinages of a certain word formation pattern, particularly in a diachronic context? Baayen (1992) has provided the most widely adopted and adapted measure of productivity. By examining very large corpora, he has found that the number of coinages in a language correlates strongly to the number of *hapax legomena*—words that occur exactly once in a large corpus. The assumption is that less productive processes create fewer words, most of which will eventually appear in a corpus, often more than once, if the corpus is fairly large.¹¹ More productive processes will generate a wider range of forms, many of which will only appear exactly one time in vast stretches of language. The primary formula Baayen provides is

$$P = n_1/N$$

where n_1 is the number of hapaxes formed by a particular process (e.g., *-able*) within a large corpus, N is the total number of tokens formed by this same process in this corpus, and P is the productivity value. There are two important clarifications to note here about the actual meaning of this value. First of all, the measure is an indirect account of the productivity of a certain affix. By counting hapaxes, one is not necessarily tallying actual coinages. The theory is that the hapaxes merely correlate with coinages generated from a

¹¹ Baayen's corpora typically contain several million words.

certain word formation process. Secondly, the productivity has no inherent value beyond the corpus from which it is generated. It must be compared to other values (for other word formation processes, for example) to determine a relational measure of productivity.

Up to this point, Baayen's quantitative measure has never been successfully applied to historical corpora. One of the primary problems is the small size of available historical corpora such as ARCHER and the Helsinki Corpus. In small corpora, productive and non-productive processes alike produce so few hits that there will be an overgeneration of hapaxes, inflating the productivity counts of all processes.¹² At the same time, some less productive processes available in a certain time period may appear infrequently (if at all) in a corpus full of small samples. This undergeneration would lead a historical linguist to underestimate the productivity of a number of emergent, less common processes.

Clearly, to study the productivity of derivational morphemes historically, linguists must adjust their approach to measuring this phenomenon. One approach might involve applying Baayen's and other frequency-based measures to larger, unprincipled¹³ historical corpora, which have become increasingly available in recent years (e.g., the Middle English Compendium, Early English Books Online). But linguists should not abandon the study of smaller corpora completely, especially since in some periods, such as Middle English, we must rely on the sparse resources we have available to us. In fact,

¹² A related problem with small corpora is the case in which one particular text or author exhibits a particular form in larger-than-usual numbers, possibly skewing the results of a supposedly "representative" study of this form in a certain period.

¹³ "Unprincipled" corpora are typically those not explicitly designed for corpus linguistic study. They lack such features as part-of-speech tagging and well-constructed sampling (in terms of text size across registers and representativeness of examples).

in this dissertation I demonstrate that the use of a range of small corpora, despite their apparent disadvantages, is a desirable, perhaps even necessary component to understand the development of derivational morphology in the history of English.

Based on studies of language processing, Hay (2003) distinguishes another frequency-based measure of productivity: the relative frequencies of bases and derivatives, which correlate strongly with the analyzability of derivatives and the productivity of their suffixes. Specifically, whenever speakers use bases more frequently than their derivatives, they are much more likely to parse those derivatives and perceive the suffixes as independent, productive units of language. Thus, to assess the potential productivity of various borrowed affixes diachronically, it is useful to consider as separate variables both the diversity of derivative types and the co-occurrence of bases and derivatives within different discourses during the late ME period. All chapters of this dissertation consider type counts and the use of bases alongside derivatives in different genres as potential indicators of analyzability and productivity.

Because productivity operates on a continuum, where a suffix can be more or less productive depending upon various factors, it is important to note that even native suffixes can become more or less productive. This dissertation assumes that *-ness* represents a typically productive suffix, so that measures of its transparency are assumed to represent that of a reasonably productive suffix in English. But even *-ness* has had changes in productivity over time. Anderson (2000), for example, finds that its productivity on suffixed bases increased in the seventeenth and eighteenth centuries and decreased in the nineteenth century. Its productivity on Latinate suffixed bases, in particular, has decreased in the nineteenth and twentieth centuries, while its productivity

on unsuffixed bases increased in the twentieth century. Hay and Baayen (2002) have also demonstrated that both native and borrowed affixes can vary in their analyzability and productivity; this variance depends particularly on the ratios of bases to derivatives observed in corpora. The more decomposable types a suffix appears in, the more likely that suffix will be perceived by speakers as productive. The effect of frequency on decomposability is assumed by Hay and Baayen, and by this dissertation, to be universally applicable: it affects all suffixes, whether they are native or borrowed; and it affects the perception of all types of speakers, whether they are monolingual or bilingual.¹⁴

This last point about multilingualism deserves further discussion. It is likely the case that borrowed derivatives were more analyzable for those fluent in English and French (and also perhaps Latin) than they were for monolingual English speakers in the medieval period. But because analyzability is scalar for all types of suffixes (native or borrowed), morphological analyzability may increase or decrease for both bi- and monolingual speakers depending on the particular conditions of language use in particular contexts (e.g., the relative use of bases and derivatives). Furthermore, it must be noted that analyzability is not automatically inherited from donor languages. Even if a monolingual learns a borrowing from a bilingual speaker, it is not as if the monolingual speaker also borrows the analyzability of that derivative as the bilingual perceives it. Analyzability for the monolingual will be conditioned in large part by the use of the base and derivative in the native language; in other words, analyzability is affected not only by

¹⁴ This is not say that frequency affects all suffixes or all types of speakers in the same way. More research must be done to control for such variables, particularly in the case of bilingual vs. monolingual speakers. But in terms of language processing, it seems reasonable to suggest that lexical frequency is one of several important influences on morphological decomposability as a general phenomenon of language.

the lexeme's structural features (e.g., phonological transparency) but also by broader features of language use (e.g., the frequency and diversity of other derivatives with the same suffix type in actual usage). In sum, this dissertation hypothesizes that increasing exposure to features that aid in morphological decomposition—such as high lexical diversity and co-occurring uses of bases alongside derivatives—increases the analyzability and thus perceived productivity of all types of suffixes among all types of speakers.

Another important assumption underlies the preceding discussion: frequency and usage both reflect and effect language change. By conducting a series of small case studies of different registers, this dissertation seeks out various types of evidence, including qualitative examples, that provide additional insight into language processes that may have reflected and/or affected the status of borrowed suffixes in English. In particular, co-occurring uses of lexemes with the same base (e.g., *payed* and *payment*) and derivatives with the same suffix (e.g., *salvation* and *damnation*) are catalogued and analyzed in texts from different genres. Their usage is considered to have a potential impact on the analyzability of different suffixes: the pairing *payed/payment* makes the detachability of *-ment* more apparent, while *salvation/damnation* highlights *-(a)tion*'s ability to attach to verbal bases with similar semantics.

Taking these variables into consideration, this dissertation develops the concept of *perceived productivity*: the ability for affixes to be perceived by speakers as independent units of language that can attach to a range of bases and potentially create new lexemes. Here *perception* is defined as a speaker's implicit knowledge about morphology, an unconscious recognition that a phonetic sequence such as [ite] (corresponding to the

Middle English suffix *-ite*) can regularly attach to a number of different bases from the same word class with similar semantics. Perception should be distinguished from *metalinguistic awareness*, an explicit understanding of the linguistic rules and restrictions underlying morphological parasability and combinability.¹⁵ Metalinguistic awareness will be addressed only in Chapter 3; the primary interest of the entire dissertation is perceived productivity.

Perception is, of course, a tricky notion for historical studies. It is impossible to elicit direct evidence of perception from ME speakers as is done in PDE studies of psycholinguistics and language processing. But I assume that it is possible to apply some aspects of our knowledge of morphology from present-day studies to an analysis of language use in the past. This assumption is meant to fall in line with the uniformitarian principle, discussed in Weinreich, Labov, and Herzog (1968) and Labov (1972), and summarized by Nevalainen and Raumolin-Brunberg (2003: 22) as follows: “Historical linguists should not expect that human languages in the past were in any fundamental way different from those spoken today” This dissertation applies this principle cautiously.¹⁶ It treats measures such as base/derivative frequencies, which have been shown by scholars such as Hay (2003) to reflect perceived productivity for PDE speakers, as potential evidence of perceived productivity for different communities and individuals using ME and EME.

¹⁵ For more on the differences between explicit and implicit processes in language, see Nick Ellis’s (1994) “Introduction” in *Implicit and Explicit Learning of Languages*. San Diego: Academic Press.

¹⁶ It should be noted here that the uniformitarian principle is typically invoked to describe external factors (such as sociolinguistic variables) that affect language change. But this study also applies the principle to describe internal factors such as language processing--i.e., there is no reason to suspect that humans in the medieval period were morphologically decomposing lexemes in ways that are fundamentally different from the ways humans do so in the present day.

This concept of perceived productivity is particularly important in the medieval period precisely because there is very little direct evidence to be observed in the use of hybrid formations. With the exception of occasional hybrids using *-age*, none of the genres examined in this study provides evidence that speakers were regularly using hybrid formations with borrowed suffixes in English. Based on the lack of hybrids, one might erroneously conclude that these affixes were not productive. But it is entirely possible that any use of relatively new derivatives in English could be perceived as either borrowings or derivations; a reader of Chaucer might perceive *sublimation* to be a derivation on *sublime* plus *-ation*, particularly if s/he happens to already know the verb *sublime*. Because all of these affixes are eventually able to produce hybrid formations and Romance-based derivations unattested in the source languages (e.g, *introducement* in the sixteenth century), it seems wisest to develop a framework that characterizes the perceived productivity of these affixes in different communities even in the absence of frequent hybrid coinages. Ultimately, I assume that productivity is an emergent, dynamic linguistic phenomenon that occurs at different rates for different speakers and depends significantly on particular frequency-based, perceptual variables that are observable in actual language use. Such perceived productivity is important to understand if one wishes to explain how speakers eventually become able to produce hybrid coinages in English. The goal is not to explain when these suffixes become categorically and universally “productive,” but rather to elucidate what linguistic mechanisms may have led them to become more or less productive diachronically within different types of communities in late ME and early EME.

In addition to perceived productivity, a secondary concern of this dissertation is the naturalization of borrowed derivatives in English. *Naturalization* refers simply to the increasing loss of speaker awareness of the foreignness of some loan words or morphemes. The term can perhaps be distinguished from *nativization*, in which borrowings begin to adopt native patterns of phonology. An example of a nativized form in PDE would be [hamədʒ] for *homage*, where the initial [h] is pronounced, the first syllable stressed, and the final vowel reduced. An example of a borrowing that has been naturalized without such overt nativization is *tax*¹⁷, at one time considered a hard word needing to be glossed in Cawdrey's *A Table Alphabetical* in the Early Modern period. In PDE this word has lost its apparent hardness and foreignness, perhaps due to frequency of use rather than to native phonological changes.

Naturalization has been undertheorized in historical linguistics. Without the ability to survey and interview informants from the past, it is impossible to find definitive evidence of a borrowing such as *extorcion* coming to be seen as an English word rather than a Latinate borrowing (or even something more vaguely foreign). One standard linguistic practice is to draw on evidence from prosody and phonology: in PDE the use of *móntage*, with Germanic stress on the first syllable, is clearly a more naturalized form than the French-sounding *montáge*. Another likely criterion is time-depth in the language—that is, the length of time that a lexeme has been used since its initial date of adoption. Lexemes that have been in a language for some time are perhaps more likely to be naturalized than those new to the language. But there are caveats to using time-depth as a strict criterion. Consider *equation*, which is attested in the *OED* in the late

¹⁷ Of course, one would not expect *tax* to undergo much phonological change via naturalization, except perhaps for the vowel. But the point here is that there are words which naturalize that do not necessarily undergo a process of nativization first.

fourteenth century in Chaucer and Gower, but not again until the sixteenth century. Clearly, the astronomical sense from Chaucer and contemporaries at some point became obsolete, though it is not clear when this occurred. One would not want to conclude from first-attestation dates alone that this word has necessarily been in the language since the fourteenth century.¹⁸ It is imperative to corroborate speculation about time-depth with studies of actual usage in different discourses, particularly for technical terms such as *equation* which may not have had wide distributions or frequent usage. It may be more accurate to suggest that time-depth accompanied by regular usage suggests increasing naturalization in the language over time.

An important point here is that naturalization is a relative concept. For some speakers (such as a medieval astronomer), *equation* may be more naturalized than it is for other speakers (say, a non-scientific reader of Chaucer's poetry). Especially in the case of bilinguals fluent in English and another language, a "borrowing" into English may already feel naturalized as an English word since, for these speakers, the word may not be a borrowing at all (e.g., in contexts such as diglossia, where the word exists in both languages). But for a monolingual who has encountered a borrowed lexeme only a few times (or never), it is unlikely that the borrowing would seem highly naturalized. And within the same community, it is possible that different derivatives of the same type might be more or less naturalized—e.g., *salvation* may seem more naturalized than *equation* for monolingual listeners of medieval poetry.

A distinct but related matter is the naturalization of borrowed suffixes themselves. In his chapter on "Lexis and Semantics" from the 1066-1476 section of the *Cambridge*

¹⁸ A corpus search of the *Compendium of Middle English*, which extends into the fifteenth century, finds no uses of *equation* other than that of Chaucer and Gower.

History of the English Language, David Burnley (1992: 445-6) broadly describes the general process of naturalization of borrowed morphemes:

Foreign words may be adopted with affixes as part of their structure, and these affixes may become productive in English. Here it is necessary to distinguish three successive stages. Firstly, the word containing affixes is adopted into English and assimilated into the grammatical systems of the language. Secondly, after analysis of the word structure, there follows a period during which the word is stylistically differentiated from the rest of the lexis. It is synchronically recognisable by speakers of the language as foreign, and its affixes may be used to produce new formations with a restricted set of bases also perceived to be foreign. Such affixes are productive only within a subset of the lexis. Finally, as coinages become more numerous, the affix ceases to be considered exotic, and is used to coin words on bases of any origin. At this point the affix has become part of the general derivational system of the language.

Burnley's discussion of morpheme naturalization can be distilled into three primary stages. First, there is a period of adoption and assimilation of the borrowings containing the potential affix. Next, there is an analysis of the word structure, in which the ending formerly seen as merely the end of a word is reanalyzed as a suffix. This reanalysis is accompanied by the stylistic differentiation of these forms and the potential production of new forms within a foreign subset of the lexis. In the final stage, formations including the affix increase in frequency as the affix attaches to a wider set of bases, including native bases.

It is not immediately clear from this description, however, what "stylistic differentiation" would actually look like and how the "analysis of word structure" could be identified in real language use. But it is clear that Burnley believes that morphological analysis encouraged ME speakers to perceive borrowed affixes as potentially productive units in English. And as these affixes were used to produce new words, speakers were

less likely to perceive the affixes and the lexemes containing them as foreign. This middle stage in Burnley's model of the naturalization of borrowed morphemes—that is, the set of steps that led speakers to perceive borrowed affixes as potentially productive suffixes in English—is a primary interest of this dissertation. In order to characterize this stage more fully, I seek to identify different textual and contextual clues that pinpoint when and how Middle English readers and writers were analyzing the complex structure of their own words. And because Burnley's hypothesis suggests that the naturalization of affixes occurs alongside increases in their perceived productivity, I also consider textual and contextual evidence of the naturalization of borrowed suffixes in late ME and early EME.

The clearest evidence for a naturalized suffix is the use of multiple hybrid forms: if speakers feel that a borrowed affix can attach to native bases, then that affix is reasonably “English,” or at least more so than an affix which attaches only to foreign lexical material.¹⁹ But it is perhaps unwise to assume that a lack of hybrids suggests no naturalization whatsoever. Another criterion to consider is the total number of naturalized derivatives containing each suffix. A suffix is more naturalized than another in English if it appears in a higher number of naturalized derivatives. The difficulty, of course, is establishing a clear method of categorizing derivatives as more or less naturalized. Chapter 5, on ME poetry, will explore possible approaches to assessing the relative levels of naturalization for different suffixes.

In general, this dissertation strives to identify, whenever possible, types of evidence that convey the differing levels of naturalization among borrowed derivations

¹⁹ Of course, there may be further nuances here, as some borrowed bases are likely more naturalized than others. Hence, a borrowed suffix that attaches to mostly unnaturalized bases is likely less naturalized than one that attaches to more naturalized bases.

and borrowed suffixes in English. Such evidence includes glossing—when writers signal to their readers that particular words are “hard” and need rendering in plainer language. But because the topic of naturalization is so difficult to characterize, this study does not offer firm conclusions about the process. And yet, to understand productivity as it relates to borrowed suffixes, the process of naturalization must be addressed to some extent. Hybrid forms indicate one of the clearest intersections between naturalization and productivity, since an affix which is widely productive on bases from both foreign and native sources is likely quite naturalized. But is it necessary for a suffix to be naturalized in order for it to become productive in English? Perhaps not, since a suffix such as *-tion* produced some new English words not attested in French or Latin, such as *ruination*²⁰, even before it is attested in hybrid forms. Even so, this study speculates that increases in perceived productivity, as evidenced in vernacular English texts, likely coincided with increasing naturalization of borrowed derivatives and suffixes. Because these processes seem at least somewhat intertwined, both will be addressed throughout the dissertation, though naturalization will always be a secondary concern to discussions of analyzability and productivity.

The notions *productivity* and *naturalization*, while significantly related, should not be conflated. Affixes might exhibit lexically restricted productivity, in which they produce coinages within a restricted sub-set of the lexis (e.g., Latinate terminology), or wider productivity, in which coinages are produced without restriction to few identifiable sub-lexicons. In the case of affixes restricted to Latinate lexical items, the endings of borrowings can potentially become productive suffixes without being fully naturalized (that is, without becoming part of “the general derivational system” of English, in

²⁰ This item is documented in Marchand (1960: 204).

Burnley's terms). Morphological productivity can occur without full naturalization, but any assessment about the naturalization of a borrowed morpheme should consider its level of productivity. A lexically restricted affix is considered less naturalized, while a widely productive affix—one that attaches to both native and non-native stems—is considered more fully naturalized in English.

Hence, to characterize the status of several borrowed derivational morphemes in English between 1300 and 1600, this study adopts an exploratory approach, offering evidence of perceived productivity and naturalization whenever such evidence is identifiable. In order to provide a descriptive account of the use of borrowed derivations in different genres, the dissertation progresses as a series of small case studies of new text types that emerged in the medieval English vernacular. A range of genres was chosen in order to consider how particular registers impacted the frequency and types of derivatives employed. The diversity of genres also helped to identify a wider range of qualitative evidence, some of which was particular to specific genres (e.g., the use of derivatives as end-rhymes in poetry).

Before the case studies begin, Chapter 2 provides an overview of morphological terminology and previous corpus studies on borrowed derivational morphology. Chapter 3 then offers the first analysis of a specific genre: the guild records of the London Grocers and Goldsmiths. It deliberately adopts a more traditional, philological methodology by conducting a thorough reading of these records with some consultation of the original manuscripts and facsimiles. By using this approach, I consider a range of visual, orthographic, and other types of evidence that suggests morphological naturalization and productivity. The chapter avoids choosing particular suffixes to

analyze a priori and instead presents an overview of all derivational suffixes used in the guild records. In this way, it is possible to determine which derivatives seemed particularly active within these communities and which orthographic variations were employed for each affix. The results not only provide some insights into differences in the usage of derivations between the two guilds, but they also present types of evidence that are pursued in more depth in subsequent chapters.

Following the discovery of particular rhetorical uses of derivations in the guild records, Chapter 4 investigates the broader history of rhetorical uses of derivational morphology in English. It finds that ME writers of popular prose, such as the Wycliffite Bible, were also regularly employing such figures. They were motivated to do so, at least in part, because derivational morphology (and particularly borrowed derivational morphology) allowed for a richer set of forms to use than the collapsing English inflectional system could allow. And importantly, these figures were likely to increase the transparency and perceived productivity of borrowed suffixes for readers of these texts, even if morphological transparency was not a writerly goal.

Chapter 5 turns to the end-rhymed poetry of Chaucer, Gower, Hoccleve, and Lydgate. It speculates that a formal property of poetry—its end-rhyme structure—was one of the primary motivations for the use of a number of derivatives in this genre. Based on their positional occurrences in the corpus, derivatives are also classified as more or less naturalized. And a qualitative analysis demonstrates how other features particular to poetry, such as rhymed couplets, may have likely aided the perceived productivity of borrowed suffixes such as *-age*, *-ity*, and *-tion*.

While Chapters 3, 4, and 5 focus on specific genre types in the late fourteenth and early fifteenth centuries, Chapter 6 broadens the analysis to the entire fifteenth and sixteenth centuries in order to track changes in usage and productivity diachronically. It provides an extensive, multi-variable analysis of the perceived productivity of *-age*, *-ity*, *-tion*, and *-ment*, with reference to native *-ness*, in two very different vernacular genres: medical texts and personal correspondence. It is at once a contrastive synchronic and diachronic analysis. Synchronically, the use of each type within each genre is compared and contrasted within each sub-period of the fifteenth century. Diachronically, changes in productivity among the various suffixes are considered by examining a section of the Corpus of Early English Correspondence that extends from 1400-1600. The sociolinguistic impact of gender on the use of derivations is also considered.

By conducting these case studies, this dissertation aims to fulfill several goals. First and foremost, it serves as a descriptive account of the use of borrowed derivations in a number of vernacular English genres in the fourteenth through sixteenth centuries. In each chapter, particular suffixes are selected as a means to describe in more detail how borrowed suffixes are integrated into English. To characterize this integration, the study provides a comparison of the perceived productivities and levels of naturalization among different suffixes in different genres at different points in time. The dissertation also intends to identify many of the motivations for using these derivatives in the vernacular and to explain how this usage might reflect and affect the perceived productivity and naturalization of borrowed suffixes in English. By conducting this analysis, this study presents broader implications for the historical study of morphology. It offers both methodological and theoretical contributions, encouraging scholars to rethink

morphological productivity as a multi-faceted historical phenomenon and to consider a wider range of evidence from detailed corpus-studies of language use.

Chapter 2

Theory, Terms, and Previous Studies of English Derivational Morphology

By surveying contemporary theories of morphology alongside previous historical studies of derivational morphology in the history of English, the present chapter provides terminological and theoretical foundations for the case studies of this dissertation. It first addresses several key terms, such as *word*, *lexeme*, *morpheme*, *inflectional*, and *derivational*, which are employed in the analyses of borrowed derivational morphemes in various genres. It also elaborates upon significant concepts drawn from particular subfields of morphology, such as studies of frequency and language acquisition, which inform my methodologies and discussions of findings in later chapters. And finally, it outlines previous scholarship on the history of borrowed derivational morphology in English, highlighting the most significant findings and clarifying underexamined questions that are investigated throughout the dissertation.

2.1 Words

One of the most ambiguous terms in the field of morphology is the word *word* itself. Plag (2003: 4-9) identifies five different ways to define *word*: as a separate written entity (the orthographic); as a distinct sound structure (the phonological); as a meaningful unit (the semantic); as a unit within sentence structure (the syntactic); and as a unit with internal integrity. An orthographic definition would state that a word is any continual

sequence of letters, surrounded on each side by white space and/or phase-final punctuation. He dismisses the orthographic definition outright, giving the example of the variable spellings <girlfriend>, <girl friend>, and <girl-friend>: “The notion of what a word is, should, after all, not depend on the fancies of individual writers or the arbitrariness of the English spelling system” (5). But for historical linguists, who must rely on written texts to analyze the language of the past, the space between written items in a manuscript or printed text can give us important insight into an individual writer’s perception of word boundaries. It is quite interesting, for instance, whether someone writes <a napron>, <anapron>, or <an apron> in a text. Each instance represents a different perception of the word structure of PDE *an apron*—two words, one word, and a reanalyzed representation with two different words, respectively. The point here is that the written representation of words may be psychologically real and revelatory of the idiolectal differences in writers’ perceptions of word boundaries. This issue will be addressed during the analysis of the manuscripts of the medieval Grocers and Goldsmiths presented in Chapter 3.

Like orthography, phonology also provides clues into speakers’ perception of what constitutes a word. Main or primary stress—in which a syllable is more prominent than neighboring syllables due to increased loudness, heightened pitch, and/or longer duration—occurs only once per word. Thus, *girl friend* may be perceived as two orthographic words but is phonologically represented as one word. Moreover, *girl friend* is clearly distinct from *girl friend*, the latter consisting of two words and the former only one. Plag notes, however, that this one-main-stress criterion for words does not apply to

most function words (e.g., articles, conjunctions, prepositions, etc.) or clitics, reduced forms that attach to other words (e.g., 've and 'll in *I've* and *I'll*).

A common semantic definition of *word* is that it should express a “unified semantic concept” (2003: 7). Plag rightly notes that this is not a useful criterion, since not every unified concept is expressed in one word and every word does not clearly denote some unified concept. Thus, *the smell of fresh rain in a forest in the fall* is a unified concept that has no one-word representation in English, and *conventionalization* is one word that does not clearly denote a unified semantic concept.

It is more useful to look to syntax to distinguish a word from a non-word. A syntactic definition holds that every word is a minimal element of a sentence, and each word belongs to a word class (e.g., noun, verb, adjective, preposition, etc.). If an item exhibits most of the characteristics of a certain class, then that item is considered a member of that class and hence a word. For example, *the* exhibits all the features of an article (e.g., it precedes adjectives and nouns in a noun phrase, it cannot be modified itself, etc.); *the* is an article and therefore a word.²¹

The integrity criterion states that “the word is an indivisible unit into which no intervening material may be inserted” (2003: 6). While material is most commonly added (according to typology) to the beginnings or endings of words—the processes of prefixation and suffixation, respectively— infixation does occur. Infixation inserts material into a word itself, as in the productive English intensifier *-fuckin-* in such words as *abso-fuckin-lutely* and *fan-fuckin-tastic*. The integrity criterion is therefore not a reliable feature in the definition of *word*.

²¹ Plag also notes that a word is the minimal unit that can undergo syntactic movement, so that *can* in *You can go* moves to the front in the yes/no question *Can you go?* Affixes typically do not undergo such movement, which suggests that syntax is sensitive to the distinction between words and non-words.

To summarize, words are minimal (and sometimes movable) units in syntactic structures that have a part of speech specification. From a phonological point of view they usually have one primary stress. Or alternatively, from an orthographic perspective, they usually exist between visual space and/or phrase-final punctuation. They often, though not always, convey a unified semantic concept and have the status of indivisible units in which no other material (e.g., infixes) can intervene.

2.2 Word-forms, Lexemes, and the Lexicon

According to the criteria outlined above, *nerd* and *nerds* each qualifies as a word. But are they wholly distinct words, or different forms of the same word? To answer such questions, morphologists rely on the terms *word-form*, *lexeme*, and *lexicon*. Both *nerd* and *nerds* are word-forms, phonological or orthographic manifestations of an underlying (and more abstract) lexeme that relates the two. Each of these items—the word-forms, the lexeme, and the relationships between them—is stored in the lexicon in the human brain. While this example demonstrates the basic relationship between these terms, each one requires further discussion in order to approximate any sort of clear definition.

Aronoff (1994) provides a useful historical sketch of the varied uses of *lexical* and *lexicon* in twentieth-century linguistics. *Lexicon* is almost always opposed to *grammar*, but it takes on two fundamentally different senses. On one hand, the lexicon is seen as a repository of all idiosyncrasies of language, the arbitrary collection of words and other non-rule-governed bits of language. Grammar is thus the mental module that operates upon the lexicon.²² On the other hand, the lexicon is also distinguished from grammar in

²² The terms *grammar* and *lexicon* are far more fraught than I am able to convey here. Generative and functional approaches differ widely in their conceptions of grammar.

terms of the syntactic categories of words. Content words (also open class words, e.g. nouns, verbs, adjectives) are seen as lexical elements, whereas function words (closed class, e.g. prepositions, articles, etc.) are deemed grammatical units. In this second sense, the lexicon would contain all members of these open classes; the closed class items would be stored elsewhere.²³ The idiosyncratic version of the lexicon is simply “a list of arbitrary pairings of form and meaning, regardless of the category they belong to” (21). The category-based version organizes the members of open classes, specifically—and these are the *lexemes*.

Pounder (2000: 58-60) defines a *lexeme* and its relationship to *word-forms* as follows:

The lexeme is the fundamental unit of the lexicon. It exists on an abstracter level than the word-form. The lexeme is an abstract unit and is thus not directly accessible; its mediating or representative form is the familiar citation form, i.e. some representative inflected or otherwise freely occurring form A lexeme can be morphologically complex, i.e. all word-formations are lexemes in the same way as morphologically simplex items are (e.g. BEANBAG, GREEDY, BEHEAD, SOUP). . . . [The lexeme] has a meaning that is more general than that of word-forms, as it has no sentence relevance; it has lexico-syntactic properties such as class, gender etc.

Both Melčuk (1982) and Aronoff (1994) define lexemes as a set, so that the lexeme NERD = {*nerd, nerds, . . .*}, the set of all inflected²⁴ word-forms. Pounder prefers to avoid this model strictly, since the different manifestations of the lexeme have different meanings. Moreover, the lexeme is endowed with syntactic properties (e.g., gender in

²³ It is not entirely clear to me where this storage would occur. Possibilities include a sort of mini-lexicon within the grammar, or perhaps a sublexical portion of the lexicon. The important point is that the lexical and grammatical elements are stored separately, which some studies of aphasia suggest.

²⁴ See section 1.3.3 for definitions of *inflection*.

German nouns), such that all word-forms inherit this property. Thus, the lexeme must be more than just a set, a simple container of word-forms.

Even though there is some disagreement about how to define *lexicon* and *lexeme*, most scholars agree on certain matters: the lexicon is an open, potentially infinite list; it contains lexemes, which relate certain word-forms together; and it is structured. How it is structured is a different question altogether, one which many linguists are still trying to understand.²⁵

This dissertation adopts the standard definitions of *lexeme* and *word-form*: word-forms are differently inflected words (e.g., *nerd*, *nerds*, *nerd's*) derived from a core lexeme (NERD). And while my definition of *word* above includes orthographic, phonological, syntactic, and semantic characteristics, I will primarily use it in ways that overlap directly with the terms *word-form* and *lexeme*. When I use *word* in the sense of a distinct entity that has an orthographic form on a page or screen or a phonological form in a human utterance, I mean *word-form*. When I use *word* in a more abstract description of the mental organization of language, I mean *lexeme*.

2.3 Morphology: The Basics

A *word* has now been defined and distinguished from *word-forms* and *lexemes*. But what smaller elements constitute words? How are words formed? These are the sorts of questions morphology tries to answer.

Morphology typically looks to the *morpheme* as its principal unit of analysis. A morpheme is most commonly defined as the smallest meaningful unit of a word, a unit

²⁵ Pounder (2000: 5-33) provides an excellent survey of psycholinguistic research on morphology and the structure of the lexicon.

which cannot be further decomposed into smaller units. The word *rethinks* contains three distinct morphemes, *re-*, *think*, and *-s*, each of which contributes some meaning to the entire word *rethinks*. Because *re-* and *-s* cannot stand alone as meaningful units, they are often called bound morphemes. Other morphemes that can stand alone (as single-morpheme words)—such as *neighbor* or *the*—are called free morphemes. Bound morphemes attach to the central meaningful element of a complex word (e.g. *think* in *rethinks*) or to other bound morphemes. This central element of the word—the *attachee*—is variously called a root, stem, or base. The bound morphemes themselves—the *attachers*—are broadly referred to as affixes.

Affixes themselves can be broken down into those that precede the base (prefixes, e.g. *re-*) and those that follow it (suffixes, e.g. *-s*).²⁶ And traditionally, affixes have been categorized as inflectional or derivational. Inflectional affixes bestow certain grammatical characteristics to the base, marking such features as gender, case, tense, etc.; thus, *-s* in *rethinks* is inflectional because it signals the third person singular present tense of the verb. Derivational affixes either change the syntactic category of the base or else change its lexical meaning: e.g., *re-* in *rethink* adds the sense ‘repeated’ or ‘iterated’ to the verb *think*, while the agentive suffix *-er* makes the verb *think* a noun in *thinker*. A special case of derivation called conversion or zero-suffixation occurs when a word undergoes a change of syntactic category without any phonologically overt marking, such as *party* (V) coming from *party* (N).

As can be readily seen, morphology relies on a number of categorical labels:

morpheme, affix, root, stem, base, inflection, derivation, conversion. But these

²⁶ There are, of course, other types of affixes in the world’s languages. Morphemes can also occur medially, e.g. the infix *-fuckin-* in *absofuckinlutely*. And there are single affixes which contain both prefixing and suffixing elements (i.e., *circumfixes*).

designations are far more controversial than the basic outline above suggests. One of the most contested terms is *morpheme* itself.

2.3.1 Morpheme

Aronoff (1976) argues that the usual definition of *morpheme*—a “minimal meaningful element”—arises from structuralist assumptions about the nature of the sign in the Saussurean sense, the arbitrary and conventional relationship between a sound-form (the signifier) and meaning (the signified). If morphemes are signs, they should exhibit three characteristics: constant form, constant meaning, and an arbitrary link between form and meaning. The problem is that not all items that we can identify as morphemes link to consistent signified meanings. He gives the example of *cran-* in *cranberry*. While *cran-* can certainly be analyzed as a morpheme, it only has meaning by virtue of its unique presence in the word *cranberry*; it has no meaning in its own right. If so, we would be able to conceive of meaningful morphemes with analogous ‘berry’ meanings in *goose-* and *straw-* (from *gooseberry* and *strawberry*). But these morphemes exhibit no such signifier-signified relationship.

A similar problem occurs with *-mit* in such Latinate words as *remit*, *commit*, and *submit*. It is difficult to propose a meaning for *-mit* that is consistent in all of these words. However, *-mit* does exhibit consistent behavior phonologically: it shows lenition in the *-ion* nominal derivatives *remission*, *commission*, and *submission* as well as before *-ive*, *-ory*, and *-or*. This is a property of the morpheme and not the phonology since the sequence *-mit* does not undergo lenition in *vomit*: *vomitary*, **vomission*. Aronoff proposes that the definition of morpheme should not center solely on the arbitrary

relation between form and meaning. It should be expanded to include forms that do not signify clear meanings but do link (arbitrarily) to certain phonological patterns.

Pounder (2000: 35-96) draws on Peircean semiotics and Melčuk's sign theory to further elaborate the definition of a morpheme. From Peirce she emphasizes that there are three types of signs: the symbol, the index, and the icon. The symbol is the basic Saussurean definition of the sign—form linked arbitrarily to meaning. According to Pounder, content words (lexemes) such as GREEN and HIT are the closest examples to pure symbols one can find in language. The icon is less arbitrary in that the form resembles the content in some way; onomatopoeic terms (e.g., *plop*) are the primary linguistic examples. The index is more associative: it is “a sign of strongly symbolic character whose function it is to signal the presence of something (a category, for example, or an association to another sign) indirectly, analogous to pointing a finger” (53). Examples would include personal pronouns such as *you* and *she*. After reviewing studies of language processing (5-33), Pounder concludes that roots and affixes have different kinds of meaning and are therefore different types of signs. In the analysis of complex words, speakers/readers tend to parse potential affixes in order to isolate the root. The lexical entry of the root is checked, and this entry provides the possible combinatory properties of the root (including, for example, which affixes are allowed to attach to it). This model of processing suggests that roots are stored in the lexicon and have lexical meaning, whereas affixes do not have the same lexical status. Suffixes and prefixes either provide grammatical information or else modify the semantics or syntactics of the stem. Pounder proposes that affixes exhibit meaning associated specifically with morphological processes, and are in fact stored in the morphological

component of the grammar. This type of meaning is not symbolic but rather indexical; it points to and/or modifies the lexical meaning of the root. In fact, she (2000: 61) distinguishes two types of morphemes, the lexical and non-lexical: “lexical morphemes have symbolic or referential content, while non-lexical morphemes have no meaning or at least no referential content, but are ‘merely’ indexes that directly (prepositions, conjunctions) or indirectly (affixes, etc.) point to relations, or rules.” While it is not entirely clear what constitutes a direct indexical relation versus an indirect one²⁷, Pounder’s main point is lucid: different morphemes mean differently, so our definition of the morpheme must speak to these distinctions.

Pounder also derives from Melčuk’s work a three-sided version of the sign itself: form, content, and the syntactics. She (2000: 56-7) defines the syntactics of symbols (roots, lexemes) as follows:

The syntactics is a set containing all information and specifications concerning syntactic and possibly also semantic combinability of the form-meaning correspondence. This includes, for a symbolic sign at least, lexico-syntactic and morphological class membership, obligatory complements, collocations, gender specification in nouns, assignment to particular morphological rules, etc.

Such lexico-semantic properties should thus be considered as a fundamental part of what constitutes a morpheme.

Because morphemes vary widely in the kinds of meaning they exhibit, they cannot be defined solely as minimal meaningful units. Their syntactic and phonological properties—particularly in terms of their combinability with other morphemes—must

²⁷ I suspect she is suggesting that prepositions and conjunctions are more direct because they are free morphemes that represent clear roles in the syntactic elements of a sentence.

also be accounted for in any general framework of morphology. This dissertation thus adopts the following working definition: a *morpheme* is a unit of language typically characterized by identifiable meaning (e.g., *re-* indicates ‘repeated action’) and/or a set of phonological and syntactic properties (e.g., *re-* almost always attaches to verbs but not other open class words).

2.3.2 Root, Stem, or Base?

Because the terms *root*, *stem*, and *base* are used widely in morphological studies—sometimes interchangeably and sometimes not—they need to be sorted out and more clearly defined. Plag (2003: 11) offers the most succinct definition of *base*: it is the part of a word that an affix attaches to. A *root* is a base that cannot be further analyzed into morphemes. A *stem* is usually defined as the base of an inflection, though it sometimes appears as a descriptor for the base of a derivational affix.

Dalton-Puffer’s explanation of stems in the history of English (1996: 29-31) illustrates these different uses of the term. In Old English, the morphological system could be characterized as “stem-based.” To believe this claim, one must accept the following definition²⁸: a stem is “a word-class specific lexeme representation stripped of all inflectional endings which may, however, contain stem-formatives (such as, among others, inflectional class markers” (30). An example of a stem formative is the past marker {d} in the Old English verb paradigm. If all stem formatives are then stripped away, only the root remains. Thus, in OE *lufodon* ‘we/y’all/they loved’, *-on* is an inflectional ending marking plural, *-od* is a stem-formative indicating past, and *luf-* is the

²⁸ Dalton-Puffer notes that this definition comes from the work of Dieter Kastovsky, though she does not cite a specific reference for the definition.

root. As the inflectional system dissipated in late OE and ME, morphological operations became less “stem-based” and more consistently “word-based.” The problem with this theory of stems, of course, is that it is not clear what criteria determine whether *-od* is a stem-formative or simply another inflection.

Dalton-Puffer prefers to define *stems* as “lexical units which cannot appear in an utterance by themselves” (30). Stems are thus opposed to *words* in the sense outlined in section 2.3.1 above: stems are bound, while words are free, independent morphemes. I will follow Dalton-Puffer’s definition of *stem*, unless otherwise noted. I will also follow Plag’s definitions of *base* (the part of an affixed word other than the affix itself) and *root* (any monomorphemic base).

2.3.3 Inflection vs. Derivation

The categorical distinction between inflectional and derivational morphemes above corresponds to only one of many criteria morphologists use to distinguish the two. Stump (1998: 14-19) provides several criteria for deciding whether a morpheme is inflectional or derivational, which I summarize and evaluate below:

- (1) **Change in lexical meaning or part of speech.** This roughly corresponds to the basic definition of derivational processes above. According to Stump, “Two expressions related by principles of derivation may differ in their lexical meaning, their part-of-speech membership, or both; but two expressions belonging to the same inflectional paradigm will share both their lexical meaning and their part of speech—that is, any differences in their grammatical behavior will stem purely from the morphosyntactic properties that distinguish the cells of a paradigm.”

Part of the problem with this criterion is that languages will differ in terms of which conceptual categories become realized lexicosemantically and morphosyntactically. Moreover, the *-al* suffix, as in *cyclic/cyclical* and

ironic/ironical, is generally considered derivational yet fails criterion (1) since it neither changes the syntactic category nor lexical meaning of the stem.²⁹

- (2) **Syntactic Determination/Obligatoriness:** “A lexeme’s syntactic context may require that it be realized by a particular word [word-form] in its paradigm, but never requires that the lexeme itself belong to a particular class of derivatives.” In other words, inflections appear on bases because the syntax requires it: *-ing* is inflectional in *We are going* because the syntax makes the ending obligatory in the expression of the progressive. There is no syntactic context that requires agentive nominalizations to take *-er* or else excludes underived nominalizations: *bellboy* and *porter* are both available in the same syntactic contexts.
- (3) **Productivity:** “Inflection is generally more productive than derivation.” Derivational morphemes are typically restricted to smaller lexical sets than inflectional morphemes. Except for strong verbs, English verbs—including new ones entering the English language—typically take {d} as a past tense inflectional marker. The derivational morpheme *-able* is fairly productive, yet it is restricted to combining only with transitive verbs. This criterion is more observational than grammatically descriptive, and all inflectional and derivational morphemes vary historically in their productivity. As Stump makes clear, the productivity criterion is thus not a reliable litmus test for sorting out inflections from derivations. Nevertheless, productivity is a critical notion for a historical understanding of derivational processes, and it is much more complicated than Stump suggests.
- (4) **Semantic regularity:** “Inflection is semantically more regular than derivation.” Stump notes that the inflectional plural *-s* always denotes ‘plural’, while the derivational suffix *-ize* varies [*winterize* ‘prepare (something) for winter’, *hospitalize* ‘put (someone) into a hospital’, *vaporize* ‘(cause to) become vapor’]. While this criterion is generally true, some derivational affixes such as *re-* seem to be remarkably stable and semantically consistent.
- (5) **Lexical listing:** “The lexicon lists derivative lexemes, but not inflected words.” This is an assumption that morphologists generally agree on: derivation creates new lexemes, whereas inflection creates word-forms that are listed not as separate lexical entries but as syntactically variable realizations of the same lexeme. Because this is an assumption about the lexicon, it is difficult to test empirically. Stump looks to semantic drift as evidence, since derivations are much more likely to undergo semantic change than inflected forms. If there are semantic idiosyncrasies, then each of these will be listed as separate lexemes, even if they are derivationally related. Thus, *awe* and *awful* will be listed separately in the lexicon. The theory is then extended to suggest that all derivations must have

²⁹ One may argue that in some cases the *-al* derivatives may take on different uses than the unaffixed forms, and this may be reflected in their social use. I have definitely heard *ironical* used in more informal registers, often self-consciously as a jocular term. While this may in fact suggest that *-al* can affect the meaning of the base, it is not a general process for *-al* affixation; I detect no such difference in *cyclic/cyclical*. Cf. Kaunisto (2007) for more on the history of *-ic* and *-ical* in English.

separate lexical entries since they have the potential to drift semantically. While inflected forms generally do not drift semantically, there are exceptions: *brother/brethren* and *cloth/clothes* (Bybee 1985: 88).

- (6) **Inflection as closure:** “Inflection closes words to further derivation, while derivation does not,” as well as the corollary, “in words containing both inflectional and derivational affixes, the inflectional affixes will always be further from the root than the derivational affixes (except in cases of infixation).” Relying on this criterion, the Split Morphology Hypothesis argues that derivation and inflection occur in different parts of the grammar: derivation occurs in the lexicon while all regular inflection occurs after syntax. While numerous examples from English illustrate that inflections occur only after all derivations have been applied to the base (e.g., *rationalizations*), Stump notes that there is a remarkable amount of evidence that contradicts this criterion and the Split Morphology Hypothesis. Russian inflects internally within derived verbs, and Breton plural nouns can be used to derive verbs and adjectives. Furthermore, this criterion is even violated in English word-formation. Stump provides **socksless* to illustrate that English does not allow the formation of privative adjectives from plural nouns. And yet, the following example can be found on the internet, at the Hong Kong Expats Forum:

No matter just give me the time and place and I will tear myself away from the socksless wonder and hobnob with you for a while³⁰

While this process is by no means fully productive, it is (apparently) available. Far more common are the adjectives *gutsy* and *ballsy*. The words *guts* and *balls* have shifted semantically and lexicalized, but like *clothes*, they historically were formed with the inflectional plural *-s*. These historically inflected forms have thus taken the derivational *-y* suffix. While these examples do not in any way suggest that English inflections regularly occur before derivational affixes, they do point out the potential in English to produce inflected words that are not closed to further derivation.

The most reliable criteria for separating derivation from inflection are thus (1), (2) and (5). But even these more reliable criteria conflict with one another. The English adverb-forming suffix *-ly*, as in *slowly* and *stupidly*, is generally considered to be a derivational morpheme because of criterion (1) above: it changes the grammatical category of the base. But does it pass the obligatoriness criterion for derivational

³⁰From the poster kombuchakid: <<http://www.geoexpat.com/forum/thread1749.html>>, Last Accessed on July 12, 2009.

morphemes in (2)? This is less clear. One could argue that the syntax itself requires *stupid* to be realized formally as an adverb with *-ly* in *I stupidly forgot my wallet at home*. From this point of view, (2) dictates that *-ly* is an inflection. But *-ly* may or may not be obligatory in other cases. In terms of prescriptive grammar, *-ly* would usually be considered obligatory in such contexts as *She was driving to the store really slowly*. But so-called flat adverbs, which do not take *-ly*, regularly appear in some dialects of English: *She was driving to the store real slow*. In such cases, it is difficult to argue that the syntax of these varieties requires *-ly*. Because of the conflicting predictions of criteria (1) and (2)—not to mention the conflicting results in the application of (2) to different contexts—it is impossible to use these criteria to determine if *-ly* is categorically inflectional or derivational.

Because no set of criteria consistently sorts out derivation from inflection, should morphologists abandon this distinction altogether? Bybee (1985:87) argues that while “there is not necessarily a discrete distinction between inflection and derivation,” the difference is more correlative than categorical. Different morphemes can be placed on a continuum from lexical to syntactic “expression types”:

lexical---derivational---inflectional---free grammatical---syntactic³¹

Lexical expression fuses multiple semantic meanings into a monomorpheme, while syntactic expression involves periphrasis: *come to know* is more syntactic and *realize* is more lexical, even though each item expresses ‘inchoative’ and ‘know’. Inflectional expression is midway on this continuum, since different semantic elements are expressed in different units while these units are bound in a single word. Derivational expression is

³¹ “Free grammatical” seems to refer to all closed class words (prepositions, conjunctions, etc.) and clitics. This discussion will not be concerned with this type of expression.

between the lexical and inflectional: it resembles the inflectional in that multiple morphemes are bound together in one word, yet it directly affects and modifies the semantic content of the base undergoing derivation. Bybee calls this the relevance parameter—that is, the effect of one element on the semantics of another. The more relevant an affix is to a base, the more derivational and lexical it is. She also relies on a generality parameter to organize the continuum: the more generally an affix applies to words, the more general its meaning must be, and thus it will behave more inflectionally than derivationally. Since each category is not absolutely distinct, individual affixes can be related to one another based on their relative differences in generality and relevance. Hence, *-ly* is general in terms of applicability and semantics and has little relevance to the base it attaches to. It is thus more inflectional than *-less*, which affects the semantics of the base much more markedly, and *-th* (*warmth*, *stength*), which is narrowly restricted to a small set of lexemes. But *-ly* is less inflectional than *-s*, which is mostly obligatory by PDE syntax and applicable to most count nouns (with the exception of plurals such as *sheep* and *mice*).

The advantage of the continuum approach is that it accounts for the range of types of affixes we find in the world's languages without assuming a clear-cut division between inflections and derivations—a division that may not in fact be clearly distinct in the grammar. The disadvantage is that when using the terms *inflection* and *derivation*, one must always arbitrarily decide the breaking point between a derivation-leaning level of relevance/generality and an inflection-leaning level of those parameters. This study will be concerned with derivation-leaning word-formation processes, those that exhibit the following characteristics: (1) limited applicability/productivity; (2) a change of semantics

in the base by affixation or conversion; and/or (3) a change in syntactic category. It will be assumed that any such process creates a new lexeme that will be connected paradigmatically to the base and other derived forms within the lexicon. Chapter 4 takes up these issues from a historical point of view, describing the distinction (or lack thereof) between inflectional and derivational morphology in classical and English traditions of grammar and rhetoric.

2.4 Studies of Language Acquisition and Derivational Morphology

Studies of the acquisition of morphology have offered significant insights into the validity of particular contemporary theories of derivational morphology, such as the level-ordering hypothesis (described in Plag 2003). Moreover, they have provided fodder for historical linguists investigating the relationships between morphological analyzability, productivity, and language change. In this section I first describe the level-ordering hypothesis and scholars' attempts to test it by exploring children's acquisition of derivational morphology. I then turn to McMahon's (1994) discussion of the relationship between language acquisition and language change. Acquisition studies establish the importance of characteristics such as morphological transparency and linguistic processes such as reanalysis and analogy, all of which inform my analyses of borrowed derivational morphology throughout this dissertation.

Plag (2003: 166-73) provides an excellent account of the level-ordering hypothesis, sometimes called *Stratal Morphology*. This theory assumes that there are two levels (strata) in English derivational morphology. Examples of these levels from Plag follow:

Level 1 suffixes: *+al, +ate, +ic, +ion, +ity, +ive, +ous*

Level 1 prefixes: *be+, con+, de+, en+, in+, pre+, re+, sub+*

Level 2 suffixes: *#able, #er, #ful, #hood, #ist, #ize, #less, #ly, #ness, #wise*

Level 2 prefixes: *anti#, de#, non#, re#, sub#, un#, semi#*

Level 1 and Level 2 are distinguished by several general properties. Level 1 affixes tend to be Latinate in origin, whereas Level 2 affixes are mostly Germanic. As indicated by the morphological boundaries + (a root boundary) and # (a word boundary), Level 1 affixes attach both to bound roots and to words. Level 2 affixes attach only to words. Level 1 members tend to be more phonologically integrated into their bases than Level 2 members: Level 1 affixes can shift the stress of the base, trigger trisyllabic shortening, or cause velar softening. And Level 2 affixes are generally more productive than stratum 1 affixes.

The level-ordering hypothesis states that “affixes can easily combine with affixes of the same level, but if they combine with an affix from another level, the level 1 affix is always closer to the base than the level 2 affix” (168). Plag provides the example of *Mongol-ian-ism* vs. **Mongol-ism-ian*: *-ian* may appear before *-ism* but not vice versa. According to Plag, the hypothesis holds for many attested words, but it does not explain why we find *-ize* before *-ation* (*colonization*) and *-ist* before *-ic* (*artistic*). It also does not account for the lack of suffix combinations within strata: Fabb (1988) reports that out of 43 suffixes, only 50 out of 459 allowable combinations occur. Moreover, some affixes seem to exhibit characteristics of both strata: *-able* sometimes shifts stress, yet it is categorized as level 2.

Studies conducted by Tyler and Nagy (1989) and Gordon (1989) each approach the acquisition of English derivational morphology by evaluating the level-ordering hypothesis outlined above. I provide a summary of their conclusions:

- (1) According to Gordon, level 1 affixes are neither frozen in lexical items nor always unproductive. Productivity is not a reliable measure for distinguishing strata.
- (2) Children are sensitive to the difference of domains of each level. The domain of level 1 processes is the word, while the domain of level 2 processes is the boundary. When a child acquires a level 2 form, s/he will maintain the juncture between base and affix in the lexical representation of that form. The maintenance makes such formations more transparent.
- (3) Level 1 derivatives are more opaque for children because of the phonological effects of the affix on the internal part of the stem. It is more difficult for them to see a division between stem and affix.
- (4) According to Tyler and Nagy, the acquisition of level 1 and 2 derivations is different. Because of their opacity, level 1 forms require more phonological checking to match the forms with other analogous forms. Level 1 forms are thus more restricted and rely more on analogical processes—the recognition of similar forms—than on word-formation rules.
- (5) Level 2 formations are more transparent; this allows children to develop generalizations (combinatory rules) to recognize/produce derivations of type 2.
- (6) Level 2 affixes are acquired earlier than level 1.

These conclusions have several consequences for a historical analysis of derivation. First of all, they both confirm that transparency—at least phonological transparency—has a real and vital effect on the acquisition of affixes and their combinatory properties. Second, because affixes are acquired differently, they may have different grammatical representations in the lexicon and morphology. Strict categorical differences between affixes are, however, complicated by the fact that stratal differences may change over time. And the distinction between levels 1 and 2 is not always clear-cut. Third, since we cannot test children's recognition of complex words in earlier periods, it is more difficult to distinguish transparent from opaque words. Historical linguists must rely on other methods to capture morphological transparency diachronically.

Although only a few researchers have approached the question of acquisition, these studies are vital to our understanding of both the derivational system and language change more generally. Working off of Andersen's models of change (1973), McMahon (1994: 94-5) explains the mechanisms involved in acquisition-motivated change. This speaker-centered process involves reanalysis, analogy, and the three logical strategies of abduction, induction, and deduction:

In terms of grammar construction, the child hears the language in her environment, construes it as a result and guesses at the structure of the grammar which produces it, with the help of whatever linguistic laws we assume to be innate; this is abduction. The grammar built by the child can then be tested in two ways. She may hear novel structures, and check whether her grammar can produce them; this is induction. If the grammar fails, further abductive innovations are required. Additionally, the child may attempt to produce utterances, testing the output of her grammar on other speakers; this is deduction. If her listeners misunderstand or correct her, she must again revise her grammar.

McMahon further demonstrates how the abductive process—which generates a new grammar—results from the speaker's reanalysis of previously existing forms in the speech community and analogizing/extending the reanalyzed form to other constructions in the system. Thus, referring to Lightfoot's (1979) explanation of the change in impersonal verbs such as OE *lician*, McMahon notes that speakers began to reanalyze such constructions as *tham cyng licodon peran* 'pears were pleasing to the king'—OVS order—on analogy to the increasing SVO pattern of other constructions in ME after inflectional cues on subject, object, and verb began to disappear. This process eventually resulted in a reanalyzed construction, *the king liked pears*. Speakers then generalized this

interpretation to all other conjugations, and ultimately produced a shift in meaning in the verb *like* from ‘to give pleasure to’ to ‘to get pleasure from’.

This acquisition model may prove valuable to our understanding of diachronic change generally, so we should not limit its application to discussions of phonology and syntax. In the case of derivational morphology, it is known from the acquisition studies outlined above that there are some innate linguistic laws that help children generalize about the applicability of certain derivational morphemes. We observe this more readily in the so-called neutral/level 2 forms, which will productively attach to certain classes of stems. Moreover, children do use analogical processes to relate derived words with a level 1 form since the affixes would be similar. They are less likely to generalize about the applicability of these forms since the stems are less transparent (due to the stem being bound, phonologically affected by the affix, etc.).

But in earlier stages of English, it is highly unlikely that the rules that govern the productivity of derivational morphology were borrowed wholesale from French or Latin users into the minds of monolingual English speakers. Nor is it likely that the native derivational system was left unaffected by the massive borrowing of French, Latin, and other stems and affixes. Instead, numerous borrowings came into English initially as lexical, unanalyzable forms. Considering the conclusions of contemporary acquisition studies, the historical linguist can suppose that as speakers (both children and adults) encountered more and more instances of derived forms with the same affix, they began to analogize similar forms to one another. Because of the increasing frequency of certain borrowings, the transparency of the internal structure of these words, or some other reasons yet to be determined, some of these lexical items were reanalyzed as an affix +

base, where the base had certain definable characteristics (e.g. Noun, Latinate, etc.). At this point speakers then acquire a different grammar, one which recognizes the affix itself as a separable lexical item and includes some combinatory rule that dictates the attachment of the affix to certain bases. This rule will shape the output of these speakers, and their output will become the input for future children who may abduct a different set of constraints for the combinatory properties of this affix and bases (perhaps expanding or shrinking the realm of bases the affix can attach to).

This acquisition model of derivational change in English is meant to be explanatory only in a general sense, and the particulars of how and when these combinatory properties came about and changed from generation to generation can only be addressed by observing the behavior of borrowings in a variety of texts and periods. Furthermore, since reanalysis and analogy seem to be critical processes in this type of change, we must decide how we can identify these processes historically. Chapman and Skousen (2005) have found evidence suggesting that negative adjectival prefixes (e.g., *dis-*, *in-*, *un-*) may have become more productive in ME and EME primarily via analogy. Having tested Skousen's theory of Analogical Modelling, they (2005: 356) argue that analogy should "remain a plausible explanation for morphological change." In historical studies both analogy and reanalysis may be impossible to observe directly as unique, real-time processes, though we can surmise that in the case of derivational morphology, reanalysis cannot occur without a speaker analogizing similar forms. While it is impossible to directly test speakers from earlier periods, there may be other types of evidence for dating when certain affixes became more transparent and/or productive:

(1) Back formation: When we first find evidence of a back formation, such as *edit* from *editor*, we know for certain that *-or* at this point in time has been generally interpreted as a salient, productive affix. There thus must be a rule in the grammar that stipulates its distributional properties, though those will not be immediately apparent from the back formation itself. The disadvantage of back formations is that they may lag far behind the original reanalysis of the base + affix itself, since we are observing the application of an already internalized rule. So they may not be a strong indicator of the initiation of the relevant change.

(2) Neologisms/Occasional words: It may be very useful to track innovations that involve the application of derivational morphemes, especially when these innovations are not picked up by other speakers historically and/or occur only rarely. Such innovations can perhaps be interpreted as overgeneralizations of some internalized rule. As Tyler and Nagy (1989) point out, overgeneralization provides some of the best evidence of the construction of rules and constraints during acquisition. Moreover, these occasional terms may help us more clearly reconstruct the changes in the constraints on productivity of different affixes over time.

(3) Mixed or hybrid forms: While some of these may or may not be a subgroup of (2), hybrid formations of the type Germanic base + Romance affix or Romance base + Germanic affix may reveal much about when reanalysis actually begins to take place. That is, once Romance affixes are observed apart from their usual Romance bases, there is evidence speakers have reanalyzed the borrowing into a base and a separable affix.

2.5 Language Processing

In addition to studies of acquisition, scholarship on the effects of transparency and frequency on morphological processing have provided even more insight into the productivity and analyzability of derivational morphemes in English. In particular, Hay (2003) argues that the mental representations of complex words and affixes may be even more complicated than the difference in level 1 and level 2 derivations. She advocates a dual-route model for complex words—that is, affixed words can be accessed either as whole entities directly or as decomposed combinations of affix and stem. For every word, both routes are available to speakers, but words differ in the likelihood of one route being chosen over the other. For example, if an affixed word possesses properties leading to the hypothesis of a boundary at a morpheme boundary, then the decomposed route will be facilitated. When one path is chosen, this increases the likelihood of access via this same route in the future. The increase is due to the raising of the resting activation level of the relevant word or morphemes in the lexicon, or else because of the increase of the number of relevant exemplars (complex words stored in parsed form in memory). In the dual route model, a complex form is stored with strong links to the parts that were used to (de)compose it.

The relevant properties (2003: 9-15) that affect the choice of route—observed in studies of language processing—include:

- (1) **phonological transparency:** *insane* will trigger *sane* but *insanity* is less likely to trigger *sane* because of the vowel change. *insane* is more likely to be decomposed and *insanity* is likely to be accessed via the whole-word.
- (2) **metrical structure:** The Metrical Segmentation Strategy. Words in which a strong syllable follows the morpheme boundary will be more likely to be decomposed.

- (3) **possible word constraint:** Speakers have a harder time spotting *apple* in *fapple* than in *vuffapple*. This is because *vuff* is a possible word (phonologically speaking) while *f* is not.
- (4) **probabilistic phonotactics:** A morpheme boundary is posited when a phonological sequence is unlikely to be morpheme internal (as in /nh/ in *inhumane*).
- (5) **temporality:** The front-to-back nature of the speech stream. Because affixes have lower activation levels than words, the whole-word route is favored for prefixed words.³²
- (6) **relative frequency:** Nodes associated with frequent words/morphemes will be accessed more quickly than those for infrequent words. Because *insane* is more frequent than *sane*, the whole word route will be faster for *insane* than the decomposed route

Hay's study explores the effects of phonotactics and relative frequency on the productivity and combinatorial properties of words and affixes. She (2003: 16) provides a number of interesting claims, many of which can be explored in a historical corpus study. Concerning words, she proposes that a word prone to whole-word access will likely appear to speakers as if it were unaffixed. In addition, words accessed as whole-words are likely to undergo semantic drift, to proliferate in meaning, and to be implemented differently in the phonetics. In contrast, words prone to decomposition during access will bear a regular and predictable semantic relation to the base; they are thus less likely to undergo semantic drift. For affixes, she claims that those represented by many highly decomposed forms will have higher activation levels than affixes contained in directly accessed forms. While this claim primarily addresses mental representations and is thus unverifiable, she goes on to state that "an affix which can be

³² Hay notes that when we combine this with the fact that language users prefer processing stems to affixes, one can see why suffixation is more prevalent in the world's languages than prefixation. That is, suffixes are more likely to be parsed out than prefixes since a stem is likely to be activated before the suffix is processed.

easily parsed out should not occur inside an affix which can not.” In other words, the less phonologically segmentable, the less transparent, the less productive an affix is, the more resistant it will be to attaching to already affixed words. An affix may resist attaching to a complex word which is highly decomposable, but be acceptable when it attaches to a comparable complex word which favors direct access. If this claim holds in earlier periods of English, it could contain much explanatory power for the diffusion and combinatory restrictions of affixes as they attach or resist attachment to certain bases.

In many ways Hay’s theory of dual-route access can be seen as a compromise position between the myriad assumptions about the status of affixes and words in the lexicon and morphological component of the grammar. That is, a complex word has both an independent lexical status and a decomposed representation that links its various parts together. Moreover, her focus on relative rather than absolute frequency is a critical move in the attempt to quantify productivity: “because words compete, the absolute frequency of the derived form is not so important as its frequency relative to the base form with which it is competing” (12). She shows that low relative frequency correlates with high productivity and high semantic transparency. More will be said on the quantification of productivity in Chapter 3. And Hay’s methods for measuring lexical frequencies in order to characterize transparency will be adopted in my analysis of historical English morphology in Chapters 5 and 6.

2.6 Corpus- and Dictionary-Based Studies of Borrowed Derivational Morphology in English

A brief overview of the most significant studies of borrowed derivational morphology in the history of English appears below, with a focus on their contributions to understanding productivity and morphological analyzability.

Dalton-Puffer (1996) provides the most comprehensive account of borrowed derivational morphology in ME (Middle English). Based on data from the Helsinki Corpus, her work is less of an argument about ME morphology and much more a descriptive overview of the use and semantics of native and borrowed suffixes in ME. She discusses a number of factors that influence and/or reflect productivity, including frequency, context, analyzability, and neologisms.

She (1996: 215-220) accepts, with some caveats, Bauer's (1988) concept of *generalizedness* as one measure of productivity. Bauer argues that productive processes are characterized by high type and token frequencies and exhibit high morphological and semantic transparency. In Dalton-Puffer's analysis, the native suffixes *-ung*, *-ness*, and *-er* (e.g., *girdeler*) seem to exhibit the highest combinations of frequency and transparency in ME. She emphasizes, however, that type frequencies (e.g., the total number of distinct derivatives ending in *-er*) are perhaps a more reliable measure of productivity than token frequencies (e.g., the total number of derivatives ending in *-er*, regardless of type). If one attempts to distinguish more productive from less productive suffixes on the basis of frequency, the important pattern is the following. Productive suffixes in ME, such as *-er* and *-less*, tend to exhibit a large number of types, each with infrequent token counts (often one or two occurrences in fairly large corpora).

Unproductive suffixes, such as ME *-ist*, *-istre*, and *-th*, tend to appear in a small range of types, some of which are often highly frequently in the corpus. However, Dalton-Puffer also notes that Baayen (1989; 1992) has shown that absolute frequencies of tokens and types are not, in and of themselves, sufficient to characterize productive processes. This dissertation will assume that token and type frequencies are one of several characteristics of productivity, with relatively high type frequencies being one indicator of potentially high perceived productivity. But this measure must be considered alongside other features, such as transparency and hybrid formations.

Dalton-Puffer also stresses the importance of analyzability and transparency³³ in assessing productivity. She assesses analyzability in two important ways. On the one hand, applying the framework of Natural Morphology, she focuses on constructional iconicity, a measure of the phonological and semantic transparency of suffixes. In general, she finds that Germanic suffixes in ME are typically more transparent than Romance suffixes. And some of the most frequent Romance suffixes, such as *-(a)cion* and *-ance*, have the highest numbers of types and tokens with low transparency.³⁴ She offers this evidence to emphasize that token and type frequencies may not automatically signal productivity, particularly if those types and tokens are not typically transparent.

On the other hand, Dalton-Puffer also describes another type of transparency—the ability for ME speakers to parse a derivative as a ME word (and not just a stem) plus a

³³ The terms *analyzability* and *transparency* will be used interchangeably throughout this dissertation. In surveying the literature on morphology, I have not yet discovered a clear distinction between the two. A complex lexeme that is transparent is, by definition, able to be analyzed by speakers into its constituent morphemes. And an analyzable derivative is, by definition, transparently decomposable. One small distinction may be the following: *transparency* focuses on the morphological qualities of the lexeme, while *analyzability* places more focus on language users' abilities to parse lexemes. It is also possible that *transparency* tends to be invoked more often in discussions of phonological and semantic features that enable parsing, whereas *analyzability* appears more often in discussions of lexical frequencies.

³⁴ Some Germanic suffixes, such as *-th* and *-el* (e.g. *spotel*), also have very low transparency.

suffix. As has been discussed in the introduction, her criterion is typical in the field: if the base of a derivative is attested at least once in the *MED* or a corpus before the first attestation of the derivative, then the derivative is considered analyzable. There are, of course, problems with this approach, which Dalton-Puffer readily acknowledges. One concern is that bases may have existed in ME speech but were never written down, or were written down much later than they were first used by speakers. This problem, endemic to all historical inquiry, is unavoidable. But a separate issue, which is apparent in work on language processing such as Hay (2003), is that analyzability does not automatically occur even if a base has been documented in the language. More specifically, derivatives are analyzable when bases are used significantly more frequently than their derivatives. For example, the bases *humid*, *ventous*, and *fumous* and their respective derivatives *humidity*, *ventosity*, and *fumosity* are all attested in ME. But in terms of actual use in ME medical texts, the derivatives occur more often (and in the case of *humidity*, much more often) than their bases. According to Hay's theory, none of these derivatives would qualify as "transparent" for speakers who use this discourse, even though the bases are attested in the language. On the other end of the scale, a derivative such as *diversity* would be highly transparent in ME medical discourse. In the corpus of Middle English Medical Texts (MEMT), *diverse* appears much more frequently (55 occurrences in the first half of the fifteenth century) than its derivative (16 occurrences).³⁵ The key point here is that lexical analyzability is a much more complex notion than has previously been portrayed in historical linguistic scholarship. Attestation dates must be accompanied by more nuanced analyses of who is using which bases and derivatives, in what contexts, and how often. More to the point, Hay and Baayen (2002) demonstrate

³⁵ This pattern with *diversity* holds up as well in other discourses, such as ME end-rhymed poetry.

that analyzable suffixes are those which appear in high numbers of decomposable types and tokens; each derivative type is decomposable when the frequency of the base outnumbers the frequency of the derivative in actual language use. This more complex portrait of lexical analyzability and its relationship to productivity will be taken up in Chapters 5 and 6.

Dalton-Puffer (1996: 219) also offers a useful caveat to assessments of analyzability, particularly for linguists assessing borrowed derivational morphology in the ME period:

We are talking about analyzability and transparency but for whom and on what occasion? Are we talking about analyzability on the part of the linguist who is trying to give a description of the grammar of the language? Or is the linguist doing etymology? Or are we talking about analyzability/transparency for speakers who might be unselfconsciously applying the rules of their grammar or is the speaker self-consciously coining a new word modelling it on a specific existing word? Yet another dimension is added if we have to do with a linguist who is trying to model what goes on in the head of that speaker. It is particularly tempting to do the latter, but we must be aware that in doing so we are making tacit assumptions about our idealized speaker, in our particular case the native speaker of Middle English: was s/he monolingual, or did s/he know French and even Latin? The answer to this last question makes an enormous difference as to what the speaker will or will not have found transparent. It is doubtful whether this problem can be solved at all in historical linguistics, but I think it is necessary to state it explicitly.

I readily agree with Dalton-Puffer's caution that it is difficult to model with any certainty "analyzability" for a ME speaker. She is also correct in distinguishing between analyzability for monolingual speakers and that for bi- (or even tri-) lingual speakers, though I would add that it is not immediately clear what difference this would make. It seems intuitive to assume that for a bilingual speaker, a suffix which is transparent in one language might automatically be transparent if used in the borrowing language. But from

Hay's (2003) and Hay and Baayen's (2002) analyses, transparency due to base-derivative frequencies is scalar: an already transparent suffix can become *more* transparent as the use of bases relative to derivatives increases. Theoretically, then, even a bilingual speaker could be conditioned by frequency patterns in one language, perceiving a suffix as more or less transparent in English depending on usage within his or her speech community. But then it also seems possible that frequency patterns of cognate bases and suffixes in a second or third language could also condition transparency in the first language. As far as I know, Hay and Baayen do not control for such variables as bilingualism, but it is an interesting question that deserves further attention.

While bilingualism is clearly a complicating factor in assessing analyzability, this dissertation is primarily focused on the potential morphological perception of monolingual readers and speakers of late ME and early EME. While there were likely bilinguals using texts from all of the genres investigated in this study, I am primarily interested in how analyzable borrowed suffixes might have been for monolingual speakers in a variety of contexts. This is not an unreasonable focus, as the rise of a number of vernacular genres in late ME likely coincided with writers' increasing interest in communicating with English speakers who may have known little or no French or Latin. In her survey of studies on multilingualism in medieval England, Lloyd (2005: 29-48) cites scholars such as Kibbee (1991) and Miller (1997), who assert that, after a flurry of use of Anglo-Norman and Continental French in the fourteenth century, there is evidence that French had diminished substantially as a spoken language in England by

the beginning of the fifteenth century.³⁶ Lloyd (2005: 32) also cites Bergner (1995), who “estimates that only 19 per cent of the population was literate in medieval England (1995: 37-54; 40), and that of these ‘only a fraction’ had a ‘basic command of Latin and French’ (1995: 45).” Of course, it is impossible to know how large this “fraction” was in different late medieval communities; and surely there were those who were fully bilingual in French and English (e.g. John Gower) throughout the period, at least within the upper classes. But no matter how many bilingual speakers and writers there were in late ME, it was likely the case that audiences of vernacular texts included a significant number of monolinguals. And this study will be focused primarily on some of the factors that would have conditioned the analyzability of borrowed suffixes for this type of audience.

Ultimately, Dalton-Puffer (1996) offers a somewhat surprising conclusion: Romance suffixes were not productive in ME. She derives this conclusion mostly on two facts: (1) Romance suffixes produce few hybrid formations during the period, even though many native suffixes do (e.g., *-ung*, *-ness*, *-er*, and *-ful*); (2) Romance suffixes produce no derivations on Latinate bases which cannot be attested in source languages (e.g., Old French).³⁷

Lloyd (2005) questions this conclusion, claiming to find some signs of productivity earlier than the fifteenth century. While her primary interest is in the semantic development of borrowed suffixes *-ment*, *-age*, *-ance/ence*, *-ation*, and *-al* in ME and EME, she also discusses the analyzability and productivity of these suffixes

³⁶ Kibbee cites as evidence French pronunciation tips appearing in teaching manuals. Miller cites a steep drop in calqued phrases in the beginning of the fifteenth century as a sign of the death of Anglo-French, the loss of English-French bilingualism in England.

³⁷ For this second fact, she cites one of her previous studies, Dalton-Puffer and Mettinger-Schartmann (1993).

during this period. She too adopts Dalton-Puffer's criterion for lexical analyzability—the attestation of a base earlier than a derivative. On this basis she finds a number of analyzable derivatives for all suffixes as early as the twelfth century in her study, though again this criterion for analyzability is oversimplified. While she presents such transparency as suggestive evidence for potential productivity for these suffixes in ME, she also draws attention to a number of potential neologisms. She is careful to make tentative claims about these neologisms, however. For each derivative type in the *MED* and her sample corpus, she checks whether or not it is attested in source language dictionaries (those of French and Latin), and whether or not the *OED* or *MED* list an etymon for the derivative. When she locates a derivative without an attested etymon, she calls it a “possible” neologism. It is only possibly a new word in English since it is difficult to know for sure whether or not an etymon was used but never written down. (Perhaps the dictionaries have missed it, or perhaps the researcher did not consult a dictionary that had listed it.)

In any case, for *-age* she finds 19 possible hybrid coinages with native bases in ME and 20 possibly new derivations on Romance bases or bases of unknown origin. These non-native neologisms appear almost entirely in the fifteenth century, except for *peregrinage* (1340) and *dennage* (1342). And the hybrid formations with native bases tend to appear in the late fourteenth and early fifteenth centuries. For *-ment*, she locates 10 hybrid forms and 20 possible neologisms on Romance bases. The earliest Romance-derived neologism, *acouplement*, appears ca. 1300. But the rest of the hybrids and Romance-based neologisms begin to occur very late in the fourteenth century and early in the fifteenth century. As for *-cion* derivatives, she finds no hybrid forms and only six

derivatives unattested in French or Latin. The two earliest such derivatives are *preambulacion* (1385) and *deliberacion* (1390); the rest appear in the fifteenth century.

From the evidence of possible neologisms in ME with this sample of borrowed nominal suffixes, it seems possible to speculate the following:

(1) Borrowed nominal morphemes did not become productive in English until late in the ME period. There were small signs of new coinages early in the fourteenth century, but the suffixes became more actively productive late in the fourteenth century and in the fifteenth century.

(2) The suffixes *-age* and *-ment* were likely more widely productive than *-cion*. Neologisms were far less frequent with *-cion*. And they tended to appear later in the language and were restricted only to Romance bases. It is also possible that *-age*, which produced twice as many hybrids as *-ment*, may have been more productive than the other two suffixes.

While these results are useful in assessing and dating changes in the relative productivities of borrowed nominals in English, it is still unclear how and why they became productive. Lloyd suggests that the transparency of many borrowed derivations preceded these coinages; it is thus possible that such transparency enabled speakers to create new derivations. But transparency must be studied in more depth in order to test this hypothesis further.

Moreover, the speculations listed in (1) and (2) above assume that attestations of neologisms describe characteristics of productivity that are generally true for English across all speech communities at a particular stage of history. They do not, for example, consider the possibility that different communities may have been neologizing with these suffixes at different points in time, or may not have neologized at all. If speakers in different communities were using vastly different types and frequencies of borrowed bases and derivations, the transparency of these affixes might have varied significantly in

different contexts. This dissertation will consider such questions as it explores the use of borrowed suffixes in a variety of ME registers.

Anderson (2000) provides a broad diachronic study of derivational productivity in English from the twelfth century to the present day. Considering only evidence from the *OED*, she focuses on derivatives ending in the following suffixes:

Native: *-ness, -dom, hood, -ship, -red(en), -ric, -wick, -less, -ful*
Borrowed: *-ity, -able, -ic, -ical, -ive, -ous*

One of her criteria for changes in productivity is domain extension, when a suffix begins to attach to a new lexical set of bases. She provides the example of *-dom* in the nineteenth century (2000: 28). Before this century, *-dom* attaches to bases signifying human conditions or realms (*freedom, wisdom, kingdom*), but in the nineteenth century it begins to extend to animals (*camelidom, sparrowdom*) and inanimates (*appledom*). For other signs of productivity, she also considers competition between suffixes (e.g., *vapidity, vapidness*), hybrid forms, and nonce formations.

Taking the suffixes as a whole, Anderson observes some interesting general trends in diachronic productivity. There are two primary peaks in productivity among derivational suffixes in the history of English: the seventeenth century and the nineteenth century. She notes that new formations for all suffixes tend to increase in the centuries leading up to the first peak, with a particularly sharp rise in the sixteenth century.

Because this dissertation focuses on both *-ity* and *-ness*, it is worthwhile to consider Anderson's findings about the diachronic productivities of these deadjectival suffixes. For *-ness*, she notes that it begins to form hybrids with Latinate bases as early

as the thirteenth century. The native suffix experienced domain extension early in its history: in Old English (OE) it attached predominantly to monomorphemes, but by ME it was beginning to attach to polymorphemic bases. In ME it also begins to encroach on the domain of *-hood*, replacing many derivatives on its former adjectival bases; compare the now obsolete ME *friendlihood* to late ME and still PDE *friendliness*. By the eighteenth century, it begins to widen its domain further by attaching to phrases: e.g., *good-for-nothingness* (1741). In the nineteenth and twentieth centuries it extends to nominal bases (*jackassness*, *recordness*) and pronominal ones (*I-ness*, *me-ness*).

As for *-ity*, Anderson agrees with Dalton-Puffer that a number of the earliest uses of the suffix appeared in transparent derivatives: e.g., *adversite*, *scarsite*, and *virginite*. Using Dalton-Puffer's results, Anderson argues that over 80% of new *-ite* derivatives between 1150 and 1350 were analyzable, while nearly 60% between 1350 and 1420 were. But again, her criterion for analyzability is only the attestation of borrowed bases in ME.

In the history of English, *-ity* has been restricted mostly to Latinate bases. Anderson provides over twenty supposed hybrids on non-Latinate bases, beginning with *wastity* in 1382 and ending with *klendusity* 'resistance of a plant to disease' in 1940. While they all seem to be English derivations (i.e., words not borrowed directly from Latin or French), a number of them arguably have bases that are Latinate (*wastity*, *cuppity*, *tableity*). But there are hybrids with native bases: the earliest is *devility* from the late sixteenth century. Even though *-ity* is almost entirely restricted to Latinate bases, its domain extends somewhat in the history of English. In ME it is primarily a deadjectival suffix, though there are a few examples of it attaching to nominal stems (ME *enemytee*).

Beginning in the 1500s, there are a few additional denominal derivations every century or so (*cuppeity* and *tableity* in the sixteenth century, *egoity*, *widowity*, and *naturity* in the seventeenth century, etc.) There are not sufficient examples offered to claim a significant domain extension. But it is clear that *-ity* has been minimally productive in this domain since the early modern period.

In terms of its overall productivity, new words with *-ity* on unsuffixed stems steadily increase until the seventeenth century. From the fifteenth to the seventeenth centuries there are also steady increases in new words ending in *-ibility*, *-ability*, *-icity*, *-icality*, *-osity*, and *-ivity*. All new derivations with *-ity* (whether or not the base is suffixed) drop off in the eighteenth century, rise sharply in the nineteenth century, and drop down again in the twentieth century.

In terms of competition, *-ness* outpaces *-ity* in overall number of new formations until the twentieth century, when *-ity* begins to lead. But Anderson also notes that *-ness* is more likely to lead *-ity* because it has a wider domain of bases to which it can attach. She claims that, to be most accurate, *-ity* and *-ness* can only be said to compete in the Latinate domain. The native suffix is perhaps more productive with particular Latinate suffixed bases—the combination *-iveness* seems more productive than *-ivity*. Before the nineteenth century, *-ness* tends to have similar or slightly greater productivity on Latinate bases than *-ity*. But in the nineteenth and twentieth centuries, *-ity* has begun to have greater productivity than *-ness*. It is unclear what may have caused this shift.

Because *-ness* and *-ity* are capable of sharing the same bases, this study will focus on evidence of competition between these suffixes in a variety of English genres. Anderson's data suggests that, in the fifteenth century, there were roughly the same

number of new words formed by *-ity* and *-ness*, though in the fourteenth and sixteenth centuries there were significantly more *-ness* derivatives than *-ity* ones. It proves interesting to compare the corpus data evidence of productivity to these general diachronic patterns observed in data from the *OED*.

Cowie (1998: 195) also considers the purported rivalry between *-ness* and *-ity*, but she adds the variable of register to the discussion. By examining the Helsinki Corpus and ARCHER from EME to the present day, she finds that from the seventeenth century onwards

. . . there is no continuous increase or decrease for either suffix; there is no point at which both suffixes show high scores (relative to their performance in other periods), except perhaps 1750-1800, and no point at which both suffixes show low scores. *-ness* is more productive than *-ity* in the late seventeenth century, the suffixes correspond fairly closely in the eighteenth century (with *-ness* slightly ahead), *-ness* is more productive than *-ity* in the nineteenth century and the first half of the twentieth, and the suffixes are equal once more in the late twentieth century.

But when she considers new derivative types introduced in individual registers, she discovers some interesting results (1998: 223):

- (1) Scientific and medical writing tend to use deadjectival nominalization frequently, with a preference for *-ity* derivations over *-ness*.³⁸
- (2) Fiction, sermons, and letters tend to use deadjectival nominalization frequently, with a preference for *-ness* derivations over *-ity*.
- (3) Journals and drama seem to use deadjectival nominalization less frequently than other registers.

³⁸ Cowie acknowledges that there may be a more general preference for Latinate vocabulary in scientific writing. This preference, then, may be the primary motivation in the use of *-ity* over *-ness* within this register.

In Chapter 6, this dissertation will compare the perceived productivities for these suffixes in late ME medical texts and letters. It will consider whether or not these patterns observed in later stages of the English language were visible in the early stages of these vernacular genres, beginning in the late medieval period.

In her study, Cowie also addresses the effect of register on the use of *-tion* from EME to PDE. She finds that since the second half of the seventeenth century, medicine and science have been the genres most likely to generate new derivatives with *-tion*. Journals and drama tend to be the least likely. Letters, legal texts, news, sermons, and fiction are somewhere in the middle, with sermons and fiction generally less likely to provide new derivatives than the other three. She concludes that in more oral registers, such as letters, journals, drama, and fiction, *-tion* is typically not a productive suffix, though playful formations (e.g., *botheration*) are more likely to occur within these types of registers. The suffix develops a learned association and often becomes a stylistic marker of sorts in a number of registers. In specialized registers, such as scientific discourse, *-tion* is often used for cohesion and text-compression—the ability to reduce larger phrases into semantically equivalent single words (e.g., “result that was determined” —> “determination”). This dissertation will also consider the possible effects of genre on the use of *-tion* and other borrowed suffixes and highlight genre-specific motivations for its use. It will explore whether or not such motivations and patterns of productivity were already observable in the centuries preceding Cowie’s work.

2.7 The Use of Morphological Theory and Previous Studies of Borrowed Derivational Morphology in this Dissertation

There are certainly a number of contemporary theories on word-formation that may shed light on the diachronic development of borrowed derivational morphology in English. Because this dissertation is primarily interested in the analyzability and perceived productivity of borrowed suffixes as observable in different genres, it applies the frequency-based theories of Bybee (1985; 2007), Hay (2003), and Hay and Baayen (2002). The primary assumptions adopted from these scholars—as well as the rationale for relying on these assumptions—have already been discussed in Chapter 1. And the relevance of these frameworks to the methodology and analysis in each case-study are addressed separately in each of the following chapters. Like Dalton-Puffer (1996) and Cowie (1998a), this dissertation adopts a corpus-based approach to study the development of borrowed derivational morphemes in late ME and early EME. While Chapters 4, 5, and 6 employ more typical corpus studies—i.e., those that rely on computers and digitized texts—the following chapter initiates my study of ME borrowings and derivational morphology by looking first at what can be learned by reading the manuscript records of specific medieval communities.

Chapter 3

Borrowed Derivational Morphology in Late Middle English: A Study of the Records of the London Grocers and Goldsmiths

As Chapters 1 and 2 have shown, previous studies of borrowed derivational morphology have been mostly large-scale; they attempt to explain morphological processes within the general grammar of English in different historical periods. Consequently, little attention has been paid to the morphological developments of individual affixes within specific communities. Hence, several critical questions about historical English morphology remain underexplored. What types of textual evidence potentially reveal the processes by which endings of borrowings became eventual suffixes? How do the records of individual communities help to complete the picture of such morphological developments? And which linguistic methods prove most useful in exploring such questions about borrowed derivational morphology? To address these questions, this chapter analyzes borrowings within two multilingual textual records in the late fourteenth to fifteenth centuries: the accounts of the London Grocers and the account/minute books of the London Goldsmiths.

Primarily, this case study compares the use of native nominal affixes (*-ness*, *-ship*, and *-hood*) with borrowed, potential affixes (*-cion*, *-ance*, *-ity*, *-age*, and *-ment*) throughout the English portions of these texts. Attempting to locate evidence of the naturalization of the latter set of forms—the process by which these endings become

derivational morphemes in the general English lexicon—the chapter develops the notion *local productivity*. This measure combines both quantitative and qualitative data to show that, even in smaller corpora, historical linguists can find evidence of the morphological status of different potential affixes for communities within particular historical moments. Specifically, this study finds that within the communities of the Grocers and Goldsmiths in late medieval London, several borrowed potential affixes were in the early stages of naturalization. They had limited productivity within a restricted subset of the lexis, though writers (and perhaps speakers) were beginning to see them as individual units. There was a potential recognition of the similarity in form of these word-endings as well as their potential separability from their bases. Furthermore, the data indicate that there may in fact be variation in the derivational development of these affixes: *-age* is more productive and more naturalized for the Grocers than for the Goldsmiths.

This study not only adds to our understanding of borrowings and derivational morphology in the medieval period. It also argues for the necessity of analyzing smaller sets of texts closely—e.g., examining the local productivities of affixes—alongside our larger, computer-assisted corpus studies. And finally, it reflects on some of the theoretical implications for our understanding of productivity and language change when we (as present day historical linguists) read and interpret this sort of data in specifically *written* examples. By focusing on the use of native and foreign derived nominalizations³⁹ in the records of two medieval London communities, I attempt to discover—as much as possible—two Middle English communities’ understanding and usage of some potential affixes.

³⁹ There will be occasional reference to verbal, adverbial, and adjectival affixes as well.

3.1 The Importance of Reading the Records of Multilingual Communities

While studying large, digital corpora for linguistic research has its evident advantages, much can be gained by reading through collections of smaller texts with a careful eye.⁴⁰ To illustrate the advantages of such slower, philological reading, I refer to the two text collections explored in the present study: (1) the records of the Grocers' Company; and (2) the Wardens' Accounts and Court Minute Books of Goldsmiths' Mistery of London. These fourteenth to fifteenth century accounts appear in printed editions with direct transcriptions of all verbal material.⁴¹ A significant advantage of these texts—unlike the majority of available larger corpora—is that they are multilingual. Each community kept records either in French, Latin, or (increasingly) English. Because of the multilingual nature of these records, we can be certain that the scribes and some portion of the community were familiar with multiple languages and had the linguistic resources to employ borrowings from French and Latin into their English usage. William Rothwell (2001: 549) emphasizes the need to consider such texts for linguistic evidence, asserting that “the rise of English in the fifteenth century . . . did not take place in a vacuum, but against the background of the dominant commercial, diplomatic and legal language of the time—French.” It is thus necessary for us to look at multilingual records to characterize how French (and even Latin) might have influenced English usage and grammar in particular communities, especially in the case of derivational morphology:

⁴⁰ Cf. Curzan and Palmer (2006) for a fuller discussion of complementary studies of principled vs. unprincipled, digital vs. non-digital, and large vs. small corpora.

⁴¹ The Grocers' accounts also provide accompanying mimeographs of the original manuscript folios.

French contact had an important impact on the lexicon and derivational morphology of Middle English.

Even so, it is difficult to know with any certainty the specific dynamics of language contact within these communities. Nightingale (1995) and Reddaway and Walker (1975) confirm that each of these guilds contained members from a wide variety of backgrounds, from London, from areas around the British Isles, and from the European continent. It is most likely the case that the members of each community came from a variety of language backgrounds: some were likely fully bilingual in French and English, some fluent in English as a second language (e.g., *Dutchmen* from the Low Countries of Europe), some monolingually fluent in English as a native language. On one hand, the exclusive use of French for business records in the fourteenth century suggests that all members might have had at least a passing familiarity with French. On the other hand, the shift to the use of English in these records—as well as its increasing use from early in the fifteenth century—suggests that there may have been a significant part of the community who felt more comfortable with, or even needed, the vernacular. Nightingale (1995: 385) notes, for example, that the Grocers read aloud their ordinances, which were composed in English, to the membership on a daily basis. This is not to say that the membership was predominantly monolingual. But there were likely monolinguals with a minimal knowledge of French and Latin working alongside those who were fluent in those languages.

An interesting question here is the effects of this contact situation on borrowed derivations and their suffixes in English usage. As discussed in previous chapters, the derivations and their endings were likely to be perceived differently depending on the

levels of bilingualism and monolingualism among members of the community. As the language of these records is analyzed in this chapter, I focus on an admittedly idealized monolingual speaker of fifteenth century English and his or her experience with borrowed derivations within these communities. Here a “monolingual” is defined as a speaker who is fluent in English and minimally experienced with French and Latin. An interesting study of the bilingual’s experience with derivational morphology could also be designed, but such a study would need to consider the use of derivatives in all of the French (and/or Latin) portions of the records as well. I leave such considerations for future research.

Another concern, particularly in multilingual records, is how to tell whether a particular use of a Romance-based derivation in English is an example of code-switching or an instance of borrowing. Summarizing the debate in studies of language contact, Crespo and Moskowich (2006) mention several features that have been proposed to distinguish the two processes:

- (1) Code-switching tends to happen before borrowing in language contact situations, though not all switches become loans.
- (2) Borrowings tend to be more morphologically integrated into the borrowing language than are code-switches. But phonological integration is not a reliable criterion because both loans and code-switches can undergo (or resist) phonological integration at the same levels.
- (3) Code-switching implies a certain bilingual competence on the part of speakers. Borrowings occur “when monolingual speakers start using forms from a donor language unaware of the fact that those forms do not belong to her/his native lexical inventory” (2006: 52).
- (4) Borrowings tend to recur in language, whereas code-switches tend to be ephemeral. Under this “frequency hypothesis,” code-switches can become entrenched as borrowings the more frequently they are used.

However, none of these criteria are clear-cut, and most scholars seem to agree that there are no consistently reliable ways to distinguish between code-switching and borrowing. For the records of the Grocers and Goldsmiths, it is possible to argue that the scribes' uses of derivatives such as *ordinance* in English are examples of code-switching since the scribes were almost certainly bilingual. At the same time, it is not clear how entrenched such derivatives already were in English; and *ordinance* does take native morphology (such as plural *-s*) and is used fairly frequently. So perhaps it is a borrowing. The point here is that it is nearly impossible to know whether or not the use of derivatives in these records was based on code-switching or borrowing. This chapter adopts the latter term as a default. But it does not assume, as Crespo and Moskowich do, that borrowings are necessarily already perceived by monolingual speakers to be part of their "native lexical inventory." Borrowings may be more or less naturalized, depending on a number of factors (e.g., phonological and morphological integration and frequency of use).

In addition to raising interesting questions about the impact of multilingual communities on borrowings and derivational morphology, there are other major advantages in choosing to analyze and compare these specific texts. The editions of the texts both span approximately the same time period in the same location, mid-fourteenth to mid-fifteenth century London. They employ similar discourses, including much economic and legal lexis. Part of this lexical overlap is due to the daily business and record-keeping practices of both companies. The medieval Goldsmiths initially formed a guild in order to regulate the standards of gold and silver quality and exchange; over time, they began to take on such additional functions as renting and managing

tenements.⁴² The medieval Grocers performed several activities: they were involved in the import and export of traded goods, including their storage and inventory; they maintained weights and measures at the Port of London; and they participated in religious ceremonies.⁴³ The Grocers' accounts include a number of ledgers with associated fees for different services; the Goldsmiths include such ledgers to a lesser extent. Both the Goldsmiths and Grocers also include a number of other genres, including inventories, defaults, ordinances, memoranda, and even occasional records of abuse. The range of genres allows for questions about the impact of register and discourse on derivational use. Furthermore, the records are precisely dated, allowing the researcher to track developments and changes throughout the textual history of each community. An individual year usually has several different entries, often in the same hand.

The use of textual records from a community also invites questions about social network considerations of the membership of that community (Milroy 1980). Unfortunately, it is nearly impossible to construct a proper network analysis using historical texts from the medieval period. We are unable to determine the density and multiplexity of social ties, particularly when specific writers are unidentifiable.⁴⁴ Even so, historical information about the Goldsmiths and Grocers provides some hints of their linguistic influences.

⁴² While their records make these functions clear in a general sense, the company's website also provides confirmation of their history: <<http://www.thegoldsmiths.co.uk/company/index.htm>>

⁴³ Mar. 2006 <<http://www.grocershall.co.uk/company.html>> According to the company site, the "grossers" were originally the wholesale keepers of inventory, and the small shopkeepers bought from them and sold to customers at retail. Eventually, these smaller store owners came to be known as *grocers*.

⁴⁴ Alexander Bergs (2005) has managed to adapt social network theory to examine morphosyntactic questions in the case of the Paston Letters. But the genre of letters is singular in its allowance of analysis of non-anonymous, individual uses of language within a community context.

Reddaway and Walker (1975: 95) describe the varied social forces that either constituted or else interacted with the Goldsmiths' Company of the early fifteenth century:

In a city as full of activity and combativeness as London in the forty years from 1404 to 1444 the Company's position could hardly remain static. It had rivals to watch, border-line trades such as the refiners of precious metals (the finers) and the jewellers to draw into their partnership or subjection, alien goldsmiths to seek out and bring within the Company's jurisdiction, and reasonable relations to maintain with a Crown and a parliament

The community was in flux, its increasing membership and daily social contacts including not only native goldsmiths but a substantial number of *Dutchmen*, immigrants from the Low Countries, the Rhineland, several parts of Germany, France, and even Italy and Spain (1975: 120). To ensure craftsmanship and proper goldsmith-customer relations, the Company dealt with a growing number of individual immigrants and communities of immigrants throughout London (1975: 121-123). During the early fifteenth century, the network ties among the Goldsmiths' membership were becoming increasingly dynamic and multiplex. Their dealings throughout London with other crafts and communities may have increased their ability to absorb and spread linguistic innovations.

As for the Grocers, Pamela Nightingale (1995: 395) explains how in the early fifteenth century they made an active effort to recruit merchants from provincial towns into their general membership.⁴⁵ The company wanted to maintain social ties to different regions in order to maintain dominance over distributive trade within England. By the

⁴⁵ The "provincial members were from places as far afield as Banbury, Shrewsbury, Ipswich, Cambridge, Cornwall, Essex, and Conventy, while later there was one from Bristol" (Nightingale 1995: 395).

1430s, the Grocers were building a new hall, but their community by this time was “dispersed so widely throughout the City” that, even after the hall was erected, “their personal ties with their parish church and with their families and friends outside the craft . . . were much stronger than their business relationships within it” (Nightingale 1995: 429-430). The looser ties in the business community were a stark contrast to earlier centuries, when the Grocers had a more tight-knit community in which they “had lived, traded, and worshipped together in the neighborhood of Sopers Lane,” their former home (1995: 431). These historical facts may have linguistic implications for this study, since the loosening of community ties among the London Grocers, alongside their increasing ties to regions throughout the country, may have made the members more likely to take up, to introduce, and to spread innovations—including new borrowings or newly coined words.

Because specific network connections cannot be easily traced in these communities, any declarations about network influences must remain speculative at best. Even so, attention to such historical information provides a general sense of the possible linguistic influences of these communities in the larger geographic contexts of London and England.

3.2 The Manuscripts of the Grocers and Goldsmiths

Another benefit in choosing these texts was their availability in manuscript and facsimile forms. I was able to observe the scribes’ handwriting in a facsimile of the Grocers’ records, and I consulted the original manuscripts of the Goldsmiths in the library of the Goldsmiths’ Hall in London. My primary interest was the following: is it possible to locate evidence of morphological analyzability from visual features that can

be observed in the handwriting and its layout in manuscripts? Ultimately, I did not discover strong evidence of the analyzability of borrowed suffixes in English from the visual analysis of the manuscripts. But the examination did influence my conclusions about the visual impact of the use of derivations in a couple of specific contexts, such as the Grocers' use of *-age* derivatives on their ledger lines. These examples are discussed in more depth later in this chapter. As for the present section, it is worthwhile to describe my manuscript analysis and its results here since this line of inquiry could prove valuable for future studies of morphology in other manuscripts.

Early on in my reading I noticed a curious feature of the Grocers' English. Sometimes the scribes would place a space which separated words into parts, such as *brother hood* and *fore seid*. Because such spacing occurred line-medially—that is, not at the end of a page—it was possible to interpret such occurrences as direct evidence that the prefix *fore-* and the suffix *-hood* were independent units of language. The spacing could also mean that they were seen as potential words and not bound affixes.

After consulting the original Goldsmiths' records, I found that the spatial separation of complex words was an even more complicated issue than I had originally thought. The majority of separation within words, when present, occurs across a prose line boundary, similar to (but seemingly a more complex practice than) hyphenation in Standard Written English in the present day. Hyphenation today is based on a recognition of syllable boundaries, so that present-day writers might separate a complex word such as *brotherhood* as *bro-/therhood*⁴⁶ or else perhaps *brother-/hood*. The latter

⁴⁶ In this section, I indicate a separation over a line-break with a forward slash. When no slash is listed, this indicates a separation occurring line-medially.

example also happens to correspond to a morpheme boundary, since *brother* and *-hood* are each independent morphemes.

In the Goldsmiths' records (and medieval records more generally), there was no consistent practice among scribes concerning word divisions.⁴⁷ One scribe of the Goldsmiths, for example, split many words across a line, marking each one with a hyphen-like squiggle. No other scribes employed such punctuation. Seeming incredibly concerned for space preservation on the vellum, this scribe tended to split compounds (e.g., *Gold smythes* and *duche man*), yet he also atypically divides proper names over line-breaks (e.g., *John Tew / kesbury* and *Tho / mas Longe*). These divisions all seem to be based on syllable boundaries, though one must then assume here that *Tewkesbury* has four syllables rather than three.

Other scribes tend to avoid divisions of longer, multisyllabic words altogether, though one observes an occasional decision to split a word into two parts with no accompanying punctuation. My interest in these occasional divisions is whether or not we can intuit some part of these writers' sense of the morphological status of certain multisyllabic words. And it is just as important to note what words are *not* split as it is to note which ones are.

One scribe, for example, splits *fore said* over a line, even though there seems to have been plenty of room to write it as one unit. A later scribe includes not only *under writyn* but also *afore seyde* (separated) and *aforeseyde* (united) in the same discourse. Furthermore, this same scribe writes *reson / able* across a line break with no hyphen—the only divided word in one complete entry. Each of these examples may suggest that the

⁴⁷ Paleographer Elizabeth Danbury informs me that medieval scribes were highly idiosyncratic about how they employed or avoided word divisions.

writers break not only on syllables but also morphemes, so that prefixes *fore-*, *under-*, and even the ending *-able* are seen as independent, potentially meaningful units.

However, another rare example from a different scribe—*no / table* for *notable*—suggests that divisions did not always occur on potential morpheme boundaries.

Similarly, we see *meynte / nance* for *meyntenance* in the only split involving an *-ance* derivative. These instances suggest that divisions, when they did occur (which was rarely), followed syllable boundaries primarily.

Even so, it is worth noting the choice of multisyllabic words to divide. My research found no examples of splits of words ending in *-ment* or *-cion*. Since the majority of word divisions involve fairly clear morphemic divisions of native forms (*betwixt*, *fore seyde*), the occasional splits involving the borrowed endings *-able* may suggest an inchoate stage of semantic or functional independence for this suffix. But it is impossible to know for certain whether or not spacing, particularly over line-breaks, was either a perceived morpheme boundary or a syllable boundary. And unfortunately, in the evidence I observed, borrowed derivational suffixes were separated from their bases only over line-breaks. Hence, there was no definitive evidence that spacing within words indicated morphological analyzability among borrowed derivations.

3.3 Local Productivity: A Quantitative Account

3.3.1 Measuring Local Productivity

As discussed above, it is unhelpful to calculate productivity scores for affixes in these communities' records: the texts are too small to rely on counts of hapax legomena. It is thus necessary to retool general productivity measures for smaller sets of texts. In

this section I introduce the notion of *local productivity*, a quantitative and qualitative measure of the independence, use, and attachability of potential affixes in small collections of texts. The qualitative measure considers the cotext and context of individual examples to establish relative productivities of potential affixes. As will be shown in the following section, when the qualitative measure is applied to borrowed (potential) affixes, linguists can more accurately evaluate the lexical status(es) of these forms and determine how naturalized they are for specific communities in specific historical moments.

The quantitative measure extends a methodology developed by Cowie and Dalton-Puffer (2002) in their article, “Diachronic word-formation and studying changes in productivity over time: Theoretical and methodological considerations.” They emphasize that productivity measures of existing words, whether synchronic or diachronic, always rely on some account of the different types and tokens of a single affix (or other morphological processes).⁴⁸ In this sense, every productivity measure is quantitative. But the critical point is that this attention to type counts reveals an underlying assumption about productivity which is not entirely unproblematic:

This [reliance on type/token counts] reflects the intuition that the productivity of an affix correlates directly with the number of different types containing it. One of the problems is that the existence of a large number of types may of course not be the result of current productivity but of an aggregation through productivity in the past. (2002: 416)

⁴⁸ In this context, *suggestion* and *reparacioun* are considered two different types of the affix *-(c)ion* since the lexemes are different. Under this schema, *reparacioun*, *reparacion*, *reparaciouns* are considered tokens of the same type, since each form is an orthographic or inflectional variation of the same lexeme (i.e., each has the same stem).

Here Cowie and Dalton-Puffer critique productivity studies that assume a direct correlation between type frequency counts and synchronic productivity. Consider a section of Dalton-Puffer’s study of the Middle English suffixes *-ness*, *-ite*, and *-acioun*:

Helsinki Corpus Subperiods	ME1: 1150-1250	ME2: 1250-1350	ME3: 1350-1420
Sub-Corpus word count	113,010	97,480	184,230
<i>-ness</i> types/tokens	124/468	60/289	108/575
<i>-ite</i> types/tokens	7/12	20/57	71/365
<i>-acioun</i> types/tokens	4/10	20/56	138/533

Table 3.1: Types and tokens for selected nominal derivatives from ME section of the Helsinki Corpus (Dalton-Puffer 1996, and re-presented in Cowie & Dalton-Puffer 2002)

The *-ness* types show a general decline in frequency over time (with a substantial drop-off in ME2), while the borrowed *-ite* and *-acioun* types show a consistent increase in frequency throughout the period. But can we conclude, based on these data alone, that *-ness* becomes less productive while *-ite* and *-acioun* become more productive? While this is likely the case, we do not have the complete picture here. It is impossible to know, for example, if *-acioun* is truly more productive than *-ness* by the ME3 period since we have no account of the new types appearing in each period. (The type counts of *-ness* may in fact consist of a higher number of innovative forms than the *-acioun* types.)

Cowie and Dalton-Puffer (2002: 428) argue that diachronic studies can directly respond to the need to measure productivity by accounting for newly introduced types rather than type frequencies alone. They introduce the concept of “aggregation,” which tracks “in each subperiod [the] new types [that] are added to the types of the previous period” alongside general increases and decreases in overall type frequencies. The

aggregation of new types in a body of texts over time, the general trends in the use of different types, provides some sense of what is and what is not productive. While it may be possible to extrapolate beyond the sample, it is best to assume that the aggregation measure most accurately reflects the local productivity of different forms within the body of texts itself—and within the community that has produced and received these texts.

3.3.2 Tokens, Types, and New Types

In my quantitative analysis of the Goldsmiths' and Grocers' records, which appear in Tables 3.2-3.5 below, I have counted the token and type frequencies (including new types) of nominal derivations in 5-year subperiods from 1415-1444, the overlapping time period in which both the Grocers and Goldsmiths used English in the published editions of these texts.⁴⁹ Because these texts were not digitized, it was impractical to tabulate overall word counts.

⁴⁹ It should be noted that my methodology here diverges from Cowie and Dalton-Puffer in two significant ways. First, the authors encourage the use of a longer range for subperiods (e.g., 50 years each). This is of course not possible for these specific texts: not only is the material in publicly available editions limited in time span, but even if these texts spanned several centuries, a long-range count could not be feasibly accomplished by employing a slow, full reading of texts. Second, Cowie and Dalton-Puffer recommend using a “starting lexicon,” deriving forms from a dictionary or an earlier period of a corpus, to determine whether a type is new to the corpus in later periods. Such a starting lexis was not necessary for the present study, since in the Grocers' and Goldsmiths' records there is a complete record of their emergent English usage. It is thus not too difficult to track local neologisms, the first uses of each type within the English sections of each community's records.

Goldsmiths	<i>-(c)ion</i>	<i>-ance</i>	<i>-ity</i>	<i>-age</i>	<i>-ment</i>	<i>-ness</i>	<i>-ship</i>	<i>-hood</i>
1415-19	1	2	1	0	0	0	1	0
1420-24	1	7	0	0	0	3	7	0
1425-29	5	5	2	1	2	5	5	1
1430-34	4	8	3	0	2	0	2	1
1435-39	9	10	1	0	7	0	1	2
1440-44	8	12	3	0	2	5	4	2
Total # Tokens	28	44	10	1	13	13	20	6

Table 3.2: Token counts for selected nominal derivatives during 5-year periods of the Goldsmiths' books

Grocers	<i>-(c)ion</i>	<i>-ance</i>	<i>-ity</i>	<i>-age</i>	<i>-ment</i>	<i>-ness</i>	<i>-ship</i>	<i>-hood</i>
1415-19	9	10	30	0	7	0	10	13
1420-24	0	1	0	0	0	0	9	0
1425-29	24	26	7	13	22	2	13	0
1430-34	17	8	1	12	14	1	12	1
1435-39	16	1	0	18	21	0	10	1
1440-44	18	3	0	8	15	0	3	1
Total # Tokens	84	49	38	51	79	3	57	16

Table 3.3: Token counts for selected nominal derivatives during 5-year periods of the Grocers' books

Goldsmiths	<i>-(c)ion</i>	<i>-ance</i>	<i>-ity</i>	<i>-age</i>	<i>-ment</i>	<i>-ness</i>	<i>-ship</i>	<i>-hood</i>
1415-19	1 (1)	1 (1)	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)
1420-24	1 (1)	4 (3)	0 (0)	0 (0)	0 (0)	3 (3)	3 (2)	0 (0)
1425-29	5 (5)	3 (2)	2 (2)	1 (1)	1 (1)	3 (2)	3 (1)	1 (1)
1430-34	3 (3)	3 (1)	2 (1)	0 (0)	1 (1)	0 (0)	2 (1)	1 (1)
1435-39	7 (6)	2 (0)	1 (1)	0 (0)	3 (1)	0 (0)	1 (0)	1 (0)
1440-44	6 (5)	7 (4)	1 (1)	0 (0)	2 (2)	4 (2)	2 (1)	1 (1)
Total # Types	21	11	6	1	5	7	6	3

Table 3.4: Type and "new type" counts (number of newly occurring types in parentheses) for selected nominal derivatives during 5-year periods of the Goldsmiths' books

Grocers	<i>-(c)ion</i>	<i>-ance</i>	<i>-ity</i>	<i>-age</i>	<i>-ment</i>	<i>-ness</i>	<i>-ship</i>	<i>-hood</i>
1415-19	7 (7)	6 (6)	3 (3)	0 (0)	5 (5)	0 (0)	3 (3)	3 (3)
1420-24	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)
1425-29	12 (8)	9 (6)	2 (2)	5 (5)	8 (7)	1 (1)	4 (1)	0 (0)
1430-34	10 (4)	4 (1)	1 (0)	6 (2)	9 (3)	1 (1)	2 (0)	1 (0)
1435-39	6 (2)	1 (0)	0 (0)	6 (1)	8 (2)	0 (0)	2 (1)	1 (0)
1440-44	8 (3)	3 (1)	0 (0)	4 (0)	7 (3)	0 (0)	2 (0)	1 (0)
Total # Types	24	14	5	8	20	2	5	3

Table 3.5: Type and “new type” counts (number of newly occurring types in parentheses) for selected nominal derivatives during 5-year periods of the Grocers’ books

In my study, a token is any one occurrence of a form containing the ending listed at the head of a column.⁵⁰ A type corresponds to a lexeme—the set of possible orthographic and inflectional variations of one lexical item. Thus, because of orthographic variation and inflectional morphological change, multiple tokens will correspond to the same type: e.g., *payment* and *payementes* are two tokens of type PAYMENT.

I have included both borrowed forms (*-(c)ion*, *-ance*, *-ity*, *-age*, and *-ment*) and native ones (*-ness*, *-ship*, and *-hood*). Underneath the type heading in each column in Tables 3.4 and 3.5 appears the number of different types of each suffix during each 5-year subperiod alongside the number of “new” types in each period in parentheses. To clarify, in this study *new* does not necessarily nor even usually mean a neologism. Rather, it indicates the first use of a particular lexical item in English within each community’s entire records. So in this sense, each new type is a sort of “local neologism,” either the earliest diffusion of a borrowing into English writing for the

⁵⁰ The *OED* explains that endings *-ance* and *-ence* are Latinate orthographic variants of the same form. While it may be possible that some speakers perceived these endings as distinct morphemes, in this study I have presented all tokens of these endings under one heading: *-ance*. Furthermore, occurrences of almost every type in the entire chart appeared as word-endings within these records—in rare cases (*Grocers: Worshipfull*), the suffix was followed by an additional suffix.

Grocers or the Goldsmiths, or else a new derivation with an affix within these communities. As Cowie (1998a: 75-6) emphasizes, for Latinate lexical items, there is unfortunately “no way of distinguishing between a loanword and a derivation in a Latinate affix.” Even with the help of a historical dictionary, one cannot reliably identify these new types as either borrowings or derivations.⁵¹

Tables 3.2 and 3.3 provide a general sense of the usage of each form in different periods within these records. One immediately apparent difference is the Grocers’ high use of *-age* forms and the Goldsmiths’ infrequent usage. But as the discussion above has emphasized, the important trends in this quantitative analysis can be seen more clearly by considering the trends in new-form usage over time. Aggregation trends are useful in understanding some general derivational patterning within these texts, but because the numbers are so small, one must be careful not to overextend the analysis. Even so, by looking up and down individual columns in Tables 3.4 and 3.5—focusing particularly on the type frequencies of individual affixes as well as the (in)consistent aggregation of new types over time—we can draw several tentative conclusions:

- *-(c)ion* and *-ance* consistently aggregate throughout this period in both communities. The form *-(c)ion* continues to follow the trend seen in earlier ME (cf., Dalton-Puffer’s study, Table 3.1) as it outpaces *-ity*, which shows little (if any) aggregation or productive growth.

⁵¹ Furthermore, while dictionaries such as the *Oxford English Dictionary (OED)* or the *Middle English Dictionary (MED)* are useful in dating occurrences of new words in English, they are not necessary for tracking newly introduced forms within a community’s records. Of course, historical dictionaries offer early attestation dates for lexical items and could provide, in theory, a general picture of the Grocers’ and Goldsmiths’ neologisms relative to occurrences of the same or similar forms in other texts within the same period. However, as Cowie (1998a: 71-72) argues, dictionaries do not reliably reflect all text types, nor do they exhaustively catalogue all instances of productive word-formation patterns available in the language of different periods and communities. Hence, in this study dictionaries were consulted for incidental evidence and for background information on selected (especially ambiguous) types.

- The native forms show little aggregation in either community. This is unsurprising, except for how little *-ness* is employed compared to the borrowed suffixes (especially for the Grocers). The general trend in ME (as seen in the Helsinki Corpus, Table 3.1) previously shows *-ness* to be eventually slightly outpaced by *-(c)ion* during 1350-1420. But in terms of overall frequency in Dalton-Puffer's larger corpus study, *-ness* is clearly more frequent than *-ity* in every single subperiod from 1150-1420. Perhaps the multilingual nature of the Grocers' and Goldsmiths' communities explains their divergence from the more general trends in the ME period. Their knowledge of Latinate or French nominals ending in *-(c)ion* or *-ite* certainly gave them more opportunities to employ borrowed forms rather than nominals ending in *-ness*. This is not to say that for every *-(c)ion* form the Grocers and Goldsmiths had available a competing native nominal form, although we do find *rebelions* in the Goldsmiths' records and *rebelness* in the Grocers'. But even in this case, the terms are not remotely synonymous: *rebellion* signifies an event, whereas *rebelness* conveys a general characteristic or personality trait. The effects of genre and their related lexical sets—as well as the wide availability of borrowed lexical items due to language contact—must have driven these communities' use of non-native nominals over the native ones. The Goldsmiths use *-ness* in characterizing the occasional misdeeds of individuals (e.g., *falsnesse*, *cursidnesse* from 1425). But even in these very records of complaint they use many more legal and economic terms (e.g., *axion*, *allegance*, *juggement*, *seurtee*, from the same 1425 entry). The

Grocers use only two *-ness* types during this entire period, perhaps because there were fewer records of complaint.

- A curious difference in the derivational uses of these communities is the differences in *-ment* and *-age*. These are fairly aggregating forms for the Grocers. For the Goldsmiths, *-ment* shows a very slight aggregation, but *-age* is almost entirely absent. In fact, their only usage of *-age* is *usage*. If we consider the everyday business of the Grocers, we find some explanation as to why their use of *-age* makes social sense. The Grocers Company, as part of their mercantile commitments, had to deal regularly with transport, storage, and the bookkeeping of inventory. Hence, in their records we commonly see forms such as *cariage*, *portage*, *wharfage*, and *surplusage*. According to Marchand (1969: 234-6), many of these *-age* forms suggest not only the physical amount of goods (the inventory), but also the toll or duty associated with the privilege or service in transporting and storing them. Thus the Grocers' accounts reveal a sublexis of *-age* formations that signal the use of mercantile discourse, an emergent professional economic discourse in the late Middle English period. Similarly, *-ment* seems to function as a marker of economic and legal discourse for the Grocers: lexical items include inventory of capital (*ornaments*, *vestment*, *tenement*), financial transactions (*payement*, *mersyments*), and legal actions (*judgement*, *amendment*, *arbeterment*, *testament*, *agrement*).

It should be noted that, because the overall period covered in this study is relatively small, these results cannot expose larger trends in morphological change. Even so, the

analysis of the aggregation of nominals within the records reveals some details about the local productivity of these forms within these communities. According to this quantitative account, the borrowed nominal forms are more productively employed than the native ones, almost across the board. The most consistently aggregating forms are clearly *-(c)ion* and *-ance*, and to a lesser extent, *-age* (for the Grocers) and *-ment*. An additional analysis of the *-age* and *-ment* types themselves reveals that social and discursive forces promoted their increasing use.⁵²

3.4 Local Productivity and Naturalization: A Qualitative Analysis

As shown in the previous section, a quantitative analysis focused on the aggregation of new morphological types in two small collections of texts can provide generally useful information about the relative productivity of different affixal forms. But one of the larger questions that this quantitative analysis has not answered, and perhaps cannot answer, is the following: how do we know if medieval people—or more specifically, these Grocers and Goldsmiths and their scribes—recognized a potential affix *as an affix* rather than just the random ending of a borrowing? Are these foreign forms naturalized, marked as borrowed, or somewhere in between? And what are our criteria for making this decision?

In order to answer these questions, the linguist cannot rely on quantitative data alone: s/he must conduct a qualitative analysis of specific textual examples. Interpreting data from the entire English records of the Grocers and Goldsmiths, I examine the internal morphological structure of individual lexical items, their co-text, and their wider

⁵² The effect of individual scribes, with varying idiolects and idiosyncrasies, must have also impacted the use of these borrowings. Nevertheless, it is difficult to paint a clear picture of the exact impact a scribe would have in the aggregate patterning of word-endings.

context to ascertain the local productivity and naturalization of borrowed derivational morphemes. My primary objective is to illustrate particular types of evidence that may indicate that writers knew these derivatives were analyzable in English, that the endings of derivatives were detachable suffixes. But I also consider the effects of particular patterns of derivations on readers, to explore how specific uses of borrowed derivatives in English may have impacted monolinguals' recognition of these endings as English suffixes.

3.4.1 Individual Complex Lexical Items: Hybrid Formations

As Dalton-Puffer (1996: 211) argues, one way to evaluate the productivity and naturalization of borrowed morphemes is to examine hybrid formations, “complex words which mix elements from the native Germanic part of the vocabulary with elements from the borrowed Romance part of the vocabulary.” Hybrid formations qualitatively demonstrate which affixes are productive beyond a lexis restricted by source language—a key component of the final stage of Burnley’s description of naturalization. In Middle English, hybrid formations are primarily of two types: (a) Romance base + Germanic suffix; or (b) Germanic base + Romance suffix. Dalton-Puffer (1996: 211) reminds us that each type conveys a different characteristic of the language contact scenario, even a different conclusion we can draw about the derivational system of English:

. . . there is a qualitative difference between a language adopting from another language names for objects, concepts or actions (often with their extralinguistic referents) which can then serve as derivational base [sic], and that language borrowing elements (suffixes) that more properly belong to its “mechanics.” In

other words, there is a qualitative difference between the two types of hybrids. Type [(a)] (with a borrowed derivational base) is much more common and the result of “ordinary” borrowing. Type [(b)] (borrowed affix) is generally assumed to be the result of much closer language contact.

(cf. Thomason-Kaufman 1988)

In other words, type (a) hybrids demonstrate the naturalization of borrowed bases, which integrate further into English as native derivational morphology begins to attach to them. Type (b) hybrids reveal the naturalization of borrowed affixes themselves, which begin to attach to a wider lexis than a smaller, borrowed sub-lexis. Both hybrid types indicate affixal productivity unrestricted by differences in the Latinate or native etymology of the base.

While hybrids tell us much about the naturalization of borrowings and productivity of different affixes, they are unfortunately relatively infrequent in the Middle English period—particularly type (b) hybrids. Having searched all borrowed suffixes throughout the entire ME portion of the Helsinki Corpus (608,570 words), Dalton-Puffer finds only 14 type (b) hybrids. Miller (1997), however, finds a significant number of type (b) hybrids in Middle English by examining a wider range of texts than those in the Helsinki Corpus, at least 100 different types before 1450. In the multilingual records of the Grocers and Goldsmiths, we might expect to find a higher proportion of type (b) formations. But this is not the case. The set of hybrid forms from the English sections of the Goldsmiths’ and Grocers’ records in this period is listed below:

Goldsmiths: *feithful, prively, masiterschip, dispitously, unbuxunesse, apprentishood, effectuely, duely, vilenously, generally, wardeynschipe, rentership, entirely, notably*

Grocers: *quarterly, maisterschipe, Flaundrissh, curteysly, rebelness, prentyshodys, unresonable, grevowsly, condissionally, Remembrancer, Indyfferently, lynyally, wharfage, cranage*

Note that the sheer infrequency of hybrids in this period, particularly tokens of type (b), precludes a larger quantitative account of different hybridization patterns. But by inspecting these few formations individually, we can draw several conclusions about the naturalization of borrowings and the productivity of the derivational morphology in these communities:

- The widely productive affixes are primarily native: *-ful, -ly, -ship, -ness, and -hood*. This conclusion is particularly important since the earlier quantitative analysis suggested *-ship, -ness, and -hood* had low local productivity relative to the borrowed forms. In this case, the qualitative data help to temper any conclusions drawn from the earlier quantitative data about the lack of new types produced by native affixes. In the list of hybrids *-ness* is clearly a productive form, active in coinages such as the otherwise unattested *unbuxunesse* ‘disobedience?’; the *MED* and *OED* provide no citations for this item (nor for any probable variants).
- Conversely, the non-native forms are clearly not widely productive since they are almost entirely restricted to borrowed lexis.
- Because we have so many type (a) hybrids, we can conclude much about the naturalization of several borrowed stems and bases. Items such as *faith, priv-, due, and reasonable* have taken native derivational morphology, further integrating them into the English language.

- The only type (b) forms observed are *wharfage* and *cranage*, which occur in the Grocers' records.

What can we determine about the productivity and naturalization of *-age* from these data? As mentioned above in the quantitative analysis, *-age* showed small but consistent aggregation for the Grocers. Because it is the only borrowed suffix that attaches to native stems, *-age* must be more widely productive than its borrowed nominal peers (at least for the Grocers). Attaching to a base other than a borrowing, it is in the final stages of the naturalization process.

Even so, *-age* appears in only two hybrid types in these records: one must be careful *not* to assume it was widely productive for these communities. Here I diverge from Burnley (1992: 449), who claims simply that *-age* is “fully assimilated in Middle English.” There is not enough data in the records of these communities to indicate full assimilation, particularly since most *-age* formations are restricted to borrowed bases. Even though (according to Burnley) other hybrid forms such as *barnage* ‘infancy’ appear elsewhere as early as 1325, these records indicate that the Grocers use *-age* almost entirely within a restricted borrowed sub-lexis—namely, Anglo-French economic terminology. The evidence from the Grocers' records corroborates Fleischman's (1977: 148, 407) general contention that *-age* was used widely in the Middle Ages for deriving or borrowing words designating taxes, fees, and dues, with the suffix exhibiting “a decided affinity for commercial and nautical terms.” This fact is perhaps unsurprising since the records left by the medieval Grocers deal mostly with their financial transactions surrounding commercial trade via ports and wharves. In any case, rather

belong to a similar semantic/lexical class of *-age* formations. Moreover, the physical shape of their presentation—their juxtaposition on the same ledger line—highlights their similarities.⁵³ But the question of linguistic choice is critical here: has the scribe intentionally written the ledger in this fashion due to a consciousness about words containing *-age*? That is, does he have a mental paradigm that links these *-age* formations together?

Pounder (2000: 83-4) summarizes how and why the lining up of similar formations in texts often indicates word-formation paradigmaticity:

In addition to psycholinguistic and historical evidence, a number of researchers have shown that paradigmatic relations between word-formations sharing a lexemic root are exploited as a cohesive device in texts. . . . the distribution and order of occurrence of words related through word-formation can be consciously manipulated as a stylistic device or as support of the development of an argument or thought . . . the “usual”, lexically fixed form-meaning combination can be replaced by another in order to obtain a series of similarly sounding formations (e.g., all stems with the same affix, with the same “ablaut” etc.); this strategy is connected to another sort of word-formation paradigmaticity, namely that of the set of lexemes in the same lexico-semantic class created by the same operation or at least by means of the same form rule.

Pounder’s description of paradigms assumes that word-formation rules (i.e., rules that dictate the attachability of affixes to bases) pre-exist the creation of the text. They are a pattern a writer can exploit for different textual effects. In the case of Middle English morphology, we do not necessarily know a priori that the forms including *-age* from the ledger above were necessarily driven by a word-formation rule. In other words, since we have only limited direct evidence of *-age* existing as a productive suffix in this period, it

⁵³ In the MS, the ledger line is broken so that *cariage* continues onto the next line. Even though all three *-age* derivations are not collinear, their immediate co-occurrence on the ledger line is still salient.

is unwise to interpret this ledger entry as an instance of creative application of a productive word-formation rule. It is not as if the scribe had a number of synonyms to choose from, and he merely picked those ending in *-age* to convey the pricing. In fact, these may have been the only linguistic options available.

However, it is probable that the writer has recognized the similarity of form in writing *Cranage*, *Wharuage*, and *cariage*. And even if he has not, the *readers* of this text will likely see the formal resemblance, especially because the pragmatics of the ledger make the similarity so salient. The use of these forms creates a moment for potential re-analysis: even if the *-age* forms are not produced by a word-formation rule, these words suddenly look to a reader *as if they might have been*. Rather than perceiving these words as whole borrowings, readers may instead take them to be part of one suffixal paradigm—that is, the same suffix attached to three different stems. The recognition of analogous forms, as written and received in such textual examples, helps to solidify *-age* forms as a mental paradigm, a crucial step in the development of a productive affix.

In 1436, the Grocers provide another example in which the ledger lines highlight the similarity of form of *-age*:

(3.2) Grocers (1436): Also payde for Caryage of Ragge chalk and aschler . . .
 Also payde for Warvage of Ragge aschler chalk

In this juxtaposition of lines, the reader can visually see the analogous form and function of these two *-age* forms. This instance increases the likelihood that readers could interpret these words as part of the same suffixal paradigm.

Elsewhere in the manuscript, the *-age* paradigm is even coordinated with a native, morphologically complex nominal within the same noun phrase. An entire ledger line at the top of one page reads as follows:

(3.3) Grocers (1436):

Also paid For costis Freigh[t] cariage Wharuage and pilyng up of ij shippes

Because the nouns *cariage*, *Wharuage*, and *pilyng* are syntactically parallel, the writer (and perhaps his readers) may intuit that the ending *-age*, like the proximate native suffix *-yng*, functions grammatically as a nominal marker. In syntactically parallel co-occurrences of borrowed and native forms, any transparency in the productive, native form may reinforce, or at least suggest, the transparency and potential productivity of the borrowed ending.

Similarly, we can read outward from other textual examples to try to reconstruct the mental lexical status of other potential affixes in borrowings. Consider the following example from the Goldsmiths:

(3.4) Goldsmiths (1436): . . . Robert Boso[un], citecein and goldsmyth of London, vilenously with malicious, sclandrous and heynous wurdis revylid and lyed John Pattyslee (italics mine)

On one hand, the Goldsmiths consistently employ *-ous* lexemes with negative semantic associations, most often in accounts of abuse. With one exception—the use of *gracious* in a copy of a letter from King Henry VI—the Goldsmiths employ *-ous* forms strictly to mark the abuse genre. In the example above, the *-ous* lexemes help the text cohere,

linking the adverbial hybrid form *vilenously* with the adjectival series *malicious*, *sclandrous*, and *heynous*. Ultimately, though, the employment of these discourse-motivated lexemes and textually cohesive effects reveals a recognition of *-ous* forms similar in syntactic function, semantic sense, and morphological shape.

These co-textual examples reveal a certain paradigmaticity for similar endings in borrowings. There are two possible implications of the recognition of analogous forms as seen in these texts. One possibility is that English writers already had these forms mentally stored in a paradigm and were employing them because of their similar semantics and syntactic functions. This may describe bilinguals' experience with borrowed suffixes when they are used in English. But there is also the possibility that readers or listeners of these records were encouraged to see the words as part of the same paradigm, even if they weren't already mentally stored in this way. This may describe the experience of monolingual language users, or at least those English speakers for whom these derivatives were not already analyzable. In this sense, these texts were part of a dynamic, diachronic force which helped readers within this community construct the linguistic knowledge of these borrowed word-endings as potential suffixes. This is an essential step in the analysis of suffixes—the unconscious recognition that a repeated form may potentially be a suffix.⁵⁴

⁵⁴ We must acknowledge, however, that the readership for these texts was likely small, restricted to the communities that produced them. But it is still significant to point out the potential local effects for this community, particularly if other Middle English texts employed similar uses of analogous forms. Historical linguists will need to consider the aggregate effects of these texts on English speakers' perceptions of these endings of borrowed words.

3.4.3 Context

In addition to co-text, we can also look at the wider context of derivational examples to locate additional evidence for the potential affixal status of borrowed morphology. Consider the following examples from the Goldsmiths, the first of which occurs early in a 1436 memorandum and the second of which occurs many sentences later in the same text (*italics mine*):

- (3.5) Goldsmiths (1436): . . . Þe same Robert Bosoun Þanne & Þere submyttid & putte hym to stonde & obeye to Þe *warde, ordinaunse, determinacion & dome* of Þe said John Sutton, John Waryn, Robert Boteler with Þe assent & good avyce of Þe good men of Þe said cumpanye for Þe offense afforeseid.
- (3.6) Goldsmiths (1436): The said John Sutton, John Waryn, Robert Boteler, by assent and good avyce of many goode men of Þe cumpanye aforesaid, *warde, ordeyne, determine & deme* Þat Þe saide Robert Bousoun

Clearly the italicized forms have been stylistically ordered according to early legal rhetorical conventions. But the repetition of different formations involving the same bases, while helping different portions of the same text lexically cohere, also provides the modern reader with some insight into the status of the nominal endings for this medieval community. In examples (3.5) and (3.6) we see a series of nominals contrasted with their lexically equivalent verbal “roots,” indicating different word-formation processes: *warde* (n.) matches with *warde* (v.) (conversion), *ordinaunse* and *determinacion* complement *ordeyne* and *determine* (affixation), and *dome* contrasts with *deme* (vowel change). The implication here is that *-aunse* and *-acion* must be suffixes—they are detachable and directly linked to their bases through textual cohesion. More subtle contextual examples appear throughout these records: *paymente* appears within the same account as *payde*,

meyntene appears in the same text as *meyntenance*, etc. Such examples suggest that these English speakers had a mental paradigm built around the same lexeme. The *ordeyne* paradigm, for example, includes both the verb *ordeyne* and its nominalization *ordinaunse*. The presence of this paradigm not only allows for the exploitation of cohesive textual effects, but it also reveals that *-aunse* has some sort of lexical status as a detachable unit.

The Grocers' records provide a similar example for *-ment* and *-aunce*, although it occurs in 1448 (slightly outside of the bounds of the quantitative study presented earlier). In the middle of a ledger, the scribe writes

(3.7) Grocers (1448): Item *Payed* to John Plomer for *Aloawaunce* . . . (italics mine)

Then, further down the page, one sees the following written in smaller handwriting (though likely by the same hand probably after the page was finished):

(3.8) Grocers (1448): Item Resseyued of the seyde John Blanche and John Plomer that was *disalowed* In the *paymentes* afore sayd . . . (italics mine)

In examples (3.7) and (3.8) the writer has employed textual cohesion for a significant additional entry not only with the metadiscursive *afore sayd* but also by employing two derivational paradigms: *Payed* gets linked to *paymentes*, and *Aloawaunce* contrasts with *disalowed*. From this example the modern reader can infer the detachability of *-ment*, *-aunce*, and also the potential prefix *dis-*.

This sort of evidence demonstrates another type of analysis of borrowings—the detachability of affixes. This analysis relies on a different sort of paradigm than the earlier co-textual examples: the repeated endings suggest a suffixal paradigm, whereas detachability of affixes depends on a lexeme-driven paradigm, multiple words which share the same stem. While it is clear that the writer must be aware that these words are part of the same paradigms, these examples must also impact readers’ consciousness of the detachability of these endings. As language users increasingly see such endings as detachable, they are more likely to see them as re-attachable to different bases. Hence, potential detachability must be another analytical criterion in place for an ending to gain the status of a productive affix.

3.5 The Lexical Status of Borrowed Derivational Endings for the Goldsmiths and Grocers

Having considered the qualitative and quantitative analysis of different potential affixes in the records of these two communities, we are left with the following question: what is the lexical status of these (potential) borrowed affixes? The local productivity analysis above—which considered the aggregation of forms alongside their analyzability by medieval writers in specific contexts—suggests that *-ance*, *-ment*, *-(c)ion*, and *-ous* are in the middle stages of naturalization. They are limitedly productive within their restricted borrowed realms, but they are seen as analyzable, patterned, paradigmatic—not merely the random endings of borrowed words. These endings unmistakably have some sort of lexical status as morphological, or perhaps *quasi-morphological* units. A *quasi-morphological* unit would correspond to the middle stages of Burnley’s model of

naturalization: speakers are able to analyze the ending as a detachable, independent unit of language, though they are not necessarily coining new English words with it. The ending *-ity* may have a morphological status similar to its nominal peers within these communities, but this study did not find enough data to support this claim.

Nevertheless, within the Grocers' community, it is possible that *-age*, compared to its borrowed peers, is in fact further along the naturalization process and the path towards a wider domain of productivity. The ending has a fairly consistent aggregation, it has its own paradigm (realized in textual examples as stylistic parallelism and lexical cohesion) and, most interestingly, it is seen attached to two different native stems. For the Grocers it seems that *-age* is the most advanced in its potential as a suffix.

There is a crucial implication to this conclusion about *-age*. I am not only arguing that *-age* is more naturalized and productive than the other nominal endings. I am also claiming that its lexical status in this time period differs in each community. There is evidence that it is recognized as a potentially productive ending for the Grocers, while there is no real evidence that it is anything other than part of a borrowing for the Goldsmiths.

This claim is critically dependent on the notion of *usage* and its impact on grammar and the lexicon, especially as seen in Cognitive Grammatical (CG) accounts of language. In "Cognitive Approach to Word-Formation," David Tuggy (2005: 234) argues that

The units of a language are *conventional*. That is, they are established by usage as shared by a community of people. All of language is in this sense usage-based, and usage is a central, not a peripheral concern of linguistics.

He adds in a footnote, “Besides being central for conventionality, usage is crucial for the establishment of units in individuals’ minds.” According to CG, sheer frequency of use has a direct impact on the likelihood that a certain word-form will be stored as a unit in the speaker’s mind. Furthermore, Hay (2003) finds that the relative frequencies of derived forms to their base forms correlate strongly with the transparency and parsibility of complex words as well as the potential productivities of individual affixes. And Bybee (2007) argues that both token and type frequencies have direct effects on cognitive representations of morphology and, consequently, morphological development in language. Noting that “repetition strengthens memory representations for linguistic forms and makes them more accessible,” she asserts that high token frequency encourages forms to resist analogical change and remain less interconnected in paradigmatic organizations within the mental lexicon (2007: 10-14). High type frequency (2007: 15) is claimed to be a major determinant in the productivity of forms:

The contribution of type frequency to productivity is the fact that when a construction is experienced with different items occupying a position, it enables the parsing of the construction. If *happiness* is learned by someone who knows no related words, there is no way to infer that it has two morphemes. If *happy* is also learned, then the learner could hypothesize that *-ness* is a suffix, but only if it occurs on other adjectives would its status as a suffix become established.

According to Bybee, whenever a reader or listener encounters a suffixal paradigm in a text, s/he is further compelled to perceive the ending as a potentially productive suffix. Each written use of a lexical and suffixal paradigm has the potential to effect change in the status of relevant affixes in the minds of readers and listeners.

Any assessment of the morphological status and productivity of affixes in different historical periods should thus consider usage patterns and token/type frequencies in available records, and not simply because these texts reflect the grammar and lexicon of the literate individuals and communities who first produced them. Observable frequency patterns in written texts can be treated either as direct evidence of literate language use or, more cautiously, as indirect/hypothetical evidence of the types of lexical items available in certain forms of spoken discourse within a community at a particular point in time. The records of the Grocers and Goldsmiths are, after all, less “literary” and at times more colloquial than those of Chaucer and Gower. As such, accounts of frequency in non-canonical written material may also indicate the potential effects of usage not only on readers, but also on others in oral contact with the communities who have produced and used those texts.

Under the light of these theories on usage and frequency, the potential affixes in the records of the Grocers and Goldsmiths may be examined with the following assumption: the more frequent and apparent a certain form is, the more likely it will achieve an independent status in the minds of medieval speakers within those communities.⁵⁵ In the case of *-age*, it is hence not insignificant that the Goldsmiths use the form far less than the Grocers, who employ 51 *-age* tokens with 8 different types. Because the Grocers use the form more often—and because their ledgers emphasize the similarities in different types ending in *-age*—their texts are more likely to make *-age* salient as a potentially meaningful and/or productive unit in the lexicon. The

⁵⁵ At present, this assumption needs more theoretical backing from language processing studies that specifically investigate the cognitive status of derivational morphemes. Much of Bybee (2007) treats inflectional morphology with far less attention to derivational morphology. Moreover, her claims about the effects of token frequency on mental representations and the autonomy of forms revolves much more around the status of words and phrases than the mental status of individual bound affixes.

Goldsmiths' *written* records cannot have this impact on their readers, even if their spoken practice includes more common *-age* usage. The dissimilarity in written usage between these communities strongly suggests a different lexical status for this ending.

3.6 Final Considerations

Applying both quantitative and qualitative methods to study the local productivity of potential derivational affixes in two medieval economic records, this chapter draws the following conclusions:

- (1) The endings *-(c)ion*, *-ance*, *-ity*, and *-ment* are not fully naturalized as affixes in the English of the Grocers and Goldsmiths. But even though they are not yet seen as English suffixes, *-cion*, *-ance*, and *-ment* are analyzable as independent endings within English discourse.
- (2) For the Grocers, *-age* is even closer to becoming a widely productive suffix than the other nominal endings. For the Goldsmiths, *-age* is less likely to be perceived as a potentially productive affix.
- (3) Productivity itself is a wider historical notion than the simple application of rules or the creation of words or, methodologically, counts of neologisms or hapax legomena as a surrogate for neologisms. The productivity of borrowed derivational morphology must begin in its early stages primarily via the processes of reanalysis and analogy on the part of speakers, listeners, writers, and readers. In the early stages of productive processes, the linguist must ask: how did this

particular form come to be seen as a potentially meaningful unit? In later stages, s/he would then ask: what kinds of stems or other morphemes can this form attach to, and can these combinatorial properties be explained? Descriptions and explanations of the morphological status of different forms can be illuminated and expanded by studies of the local productivities of forms in different textual communities.

- (4) In determining the morphological status of affixes, it is hard to deduce earlier speakers' perception of the status of these word-endings with quantitative data alone. But token, type, and new type counts are critical in showing the general trends in usage of these forms. And usage, of course, must be active in a community in order for a certain form *to be perceived* as potentially productive, as part of the same suffixal paradigm.
- (5) Whereas the quantitative analysis reveals historical trends in the individual types used within a community, the qualitative analysis is *necessary* for describing the level of naturalization and productivity of these endings. The types of evidence that help to characterize these endings' morphological status include: (a) the structure and types of hybrid forms; (b) the textual linking of forms with the same ending (suffixal paradigms); and (c) the textual linking of forms with the same stem (lexemic paradigms), indicating the potential detachability of the endings.

(6) This study provides a methodology in which the evidence for the morphological status of affixes derives primarily from qualitative data and is reinforced by usage trends observed in the quantitative analysis. Nevertheless, there is a degree to which qualitative analyses should also inform future quantitative studies of such questions. To further study borrowed derivational morphemes, a next step might include statistical counts of suffixal and lexical paradigm occurrences themselves, to determine the aggregate impact of these larger discursive structures in texts as a whole. The following chapter will investigate this question in a broader set of prose texts from late Middle English.

(7) The analysis of the local productivity of potential suffixal forms has the most explanatory power for these specific communities within this time period. One should not immediately assume that the results can be generalized to every other community in the fifteenth century. However, linguists can certainly employ a similar methodology to investigate in other communities' texts the sorts of specific evidential types outlined above. That is, a variety of close readings of texts may help us complete—albeit in small steps—the overall picture of the diachronic development of borrowed derivational morphology.

(8) Historical (written) texts not only reflect linguistic consciousness; they *effect* it.

This final point has important implications for how historical linguists think of language change as a more general phenomenon. On one hand, because all we have from earlier

stages of history is written records⁵⁶, we must assume in some way that these written usages of language reflect the consciousness (and grammar) of the writer.⁵⁷ But we must not overlook the impact writing can have on shaping linguistic consciousness. While the readership of such records is likely small, we do know that the Grocers read regularly from their records to the entire membership: the ordinances written in English “were read to the assembled members of the Company on every quarter day” (Nightingale 1995: 385). When a scribe writes three forms of *-age* together on a ledger, or links *determine* to *determinacion* in a rhetorical flourish, we can assume that he is writing his recognition of the detachability and similarity of word-endings onto the page, even if this is not his primary intent. But when readers view or audiences hear these examples, they are given the chance to reanalyze and rethink these forms—to recognize, even in an intuitive sense, that these endings may actually be meaningful, independent units in the language.

⁵⁶ Of course, we also have linguistic reconstructions based on available written records. But the primary point here is that historical linguistics is always limited by whatever written records are available. We must often make tentative assumptions about usage or grammar based on a necessarily limited body of texts.

⁵⁷ The added difficulty, of course, is that speech exhibits different grammatical features than does writing. Cf. *The Longman Grammar of Spoken and Written English*. At some point, though, all historical linguists must assume that some features from writing must have occurred in speech as well. But ultimately, we must be comfortable with our fundamental inability to know the grammar of speech in times past. We should in fact be more attuned to the specifics of *writing* as a distinct and viable form of language.

Chapter 4

Rhetorical and Grammatical Approaches to Borrowed Derivational Morphology 1300-1600: Metalinguistics and Corpus Data from ME Prose

In Chapter 3, I argued that borrowed endings such as *-tion*, *-ment*, *-aunce*, and *-ous* were analyzable, even if they were not particularly productive, within the communities of the London Grocers and Goldsmiths in the fifteenth century. The most persuasive evidence for analyzability was discovered in places where writers had lined up lexemes with the same base (lexical paradigms) or with the same ending (suffixal paradigms), as the Goldsmiths demonstrated by adjusting the nominal phrase “*þe warde, ordinaunse, determinacion & dome*” into the verbal phrase “*warde, ordeyne, determine & deme*.” This juxtaposition of phrases reveals the writer’s recognition of lexemes with similar bases and highlights the potential separability of endings such as *-aunse* and *-acioun*. But was this type of word play idiosyncratic—an occasional and rare example particular to the style of the Goldsmiths? Or was it part of a larger awareness of the rhetorical uses and morphological structure of borrowed derivations in late Middle English?

While the preceding small-scale socio-historical study both identifies a few specific types of morphological textual evidence and provides a more thorough comparative profile of the derivational usage of two specific communities, its narrow focus leaves open much larger questions about English word formation in earlier

historical periods. As historical linguists, we must discover what communities and individuals beyond the London guilds were doing with word formation in their own written practices. We must also identify any evidence of medieval and early modern conceptions of word-formation phenomena—that is, we should consider contemporary definitional and prescriptive accounts as well as contemporary insights into the perceived morphological structure of borrowings. Such evidence illuminates some of the mechanisms underlying the use and spread of suffixes in English from the fourteenth to the sixteenth centuries.

In attempting to address these questions, this chapter presents and analyzes some of the available metalinguistic data⁵⁸ on word-formation use in written compositions primarily between 1300-1600 in England, with some reference to even earlier notions of suffixation arising from classical Latin traditions. Such data are valuable since it is difficult to determine at what points and for which speakers forms such as *-age* and *-ment* behave as suffixes.⁵⁹ Previous studies and handbooks on word-formation do not always address this issue, either remaining agnostic on the question, or else assuming without qualification that these forms are already suffixes as soon as they enter the English language. This assumption may be justifiable or necessary on methodological grounds, e.g., the need to simplify categories in order to count tokens for a corpus study. But part of our work as historians of language should also include the reconstruction of language use as it was analyzed and perceived in previous periods, to avoid a simple projection of

⁵⁸ Here, I use *metalinguistic data* as a cover term for any data that directly and explicitly discusses the use and deployment of certain suffixes or types of word-formation. In other words, metalinguistic data exhibits an overt quality of (self)consciousness about language form and function.

⁵⁹ Note from the discussion of hybrid forms in the Introduction and Chapter 1 that, while it is known that *-age* and *-ment* produce hybrids in the ME period, it is not known if such productivity occurred in all communities at the same time. In fact, the data in Chapter 2 suggest that *-age* may have been more productive for the Grocers than for their contemporary Goldsmiths.

our own linguistic categories onto earlier states of language. As Nevalainen and Raumolin-Brunberg (2003: 6) remind us,

It is obvious that present-day intuitions will not serve as secure guidelines for interpreting historical data in social terms. Historical sociolinguistics may therefore look for contemporary comments on earlier usage to place their interpretations on a firmer footing. These accounts are invaluable in that they provide first-hand information on how linguistic variation was perceived by contemporaries.

In fact, contemporary metalinguistic accounts not only reveal how social attitudes have shaped language use in earlier periods, but they may also tell us how earlier speakers conceived of language structure. This understanding of grammatical form and function, along with prescriptive attitudes, may have shaped the language use observable in surviving records.

Hence, this chapter aims to fill a historical gap in previous scholarship by focusing primarily on undercharted territory: metalinguistic material on word-formation in England between 1300-1600. It seeks in part to bridge previous scholarship on grammatical theory and morphology, covering the historical terrain between Vivien Law's (1997) *Grammar and Grammarians in the Early Middle Ages* and Emma Vorlat's (1975) *The Development of English Grammatical Theory: 1586-1737*. This period has been neglected by many scholars, perhaps because England was slower than its European peers to offer vernacular translations and adaptations of Latin grammars and rhetorics. Late medieval English ideas about language use, and about word formation in particular, have remained a mystery. To map this terrain, this chapter specifically targets theories of word-formation that circulated after classical times but before the later stages of the early modern period, between the scholarship of Jaana Vaahtera's (1998) *Derivation: Greek*

and Roman Views on Word Formation and Bertil Sundby's (1995) *English word-formation as described by English grammarians 1600-1800*. It is interested in those texts that overtly discuss language use and word-formation, the potential networks within which these texts may have been disseminated in English culture, and their possible effects on vernacular English writing—the influence on the use of borrowed derivations, in particular.

As a complement to the data gleaned from direct accounts of language use, a corpus-based study in the second half of this chapter provides evidence of the strategic and rhetorical uses of borrowed derivations in English. Observable language patterns in Middle English texts offer critical insight into the potential perceptions of morphological structure in earlier periods, ultimately corroborating and/or expanding upon available metalinguistic information.

An important point must be made here about the two different types of evidence offered in this chapter, and what this evidence reveals about derivational morphology in English. I focus first on treatises that describe the intentional use in writing of sequences of lexemes with particular patterns of suffixation. Because such texts describe and prescribe the conscious use of morphology, they are considered types of metalinguistic data. A separate type of evidence—corpus-data from ME prose—highlights moments in which medieval English writers were employing patterns of suffixation in their writing. This second type of data is interpreted in two distinct ways. On one hand, it is considered to be evidence of the writers' implicit metalinguistic awareness of morphology. By using these structures in prose, writers reveal their understanding that English derivational morphology could be patterned for particular rhetorical purposes. On the other hand, this

corpus data is also interpreted for its potential effects on the analyzability of derivational suffixes. This interpretation is aimed at the audience's perception of morphological decomposability. But this perception is not assumed to operate on a metalinguistic level; rather, the effect of rhetorical uses of morphology on readers' and listeners' perception of that morphology typically occurs below the level of consciousness. This chapter aims to maintain the distinction between metalinguistic awareness and morphological perception. Evidence of the former implies the latter, but not vice versa. The historical relationship between these phenomena in ME and EME is somewhat complicated, but it will hopefully become clearer as numerous examples of each are discussed in detail throughout this chapter.

Ultimately, this study discovers an important fact about the history of derivational morphology in English particular to this period: Because Latin grammatical and rhetorical practices emphasized *inflection* as the primary means of changing word shape, and because Middle English had lost most of the varied inflections from Old English, writers turned increasingly to *derivational morphology* as a primary means of changing word shape in English language texts.⁶⁰ And even though some writers translated these rhetorical practices from Latin traditions to the English vernacular—from inflectional play to derivational play—medieval and early modern language theorists did not linguistically identify and categorize the process in this way.

In order to characterize these developments in derivational morphology in the history of English, this chapter provides the following: a brief overview of word

⁶⁰ This is not to suggest the English did not continue to employ other means of playful derivation (e.g. compounding) from the OE period into the ME period. The suggestion is rather that the loss of inflectional morphology may have encouraged the increasing use of derivational morphology, including borrowed suffixes, in rhetorically patterned language in ME.

formation theory and notions of suffixes/word-endings before 1600, particularly in England, as a complement to present day theories about word formation detailed in Chapter 1; an analysis of the evidence from grammars and rhetorical texts that reflects the morphological status of particular word-endings in this period; a consideration of the potential impact of word-formation theory on written composition via different social networks in England between 1300-1600; and a corpus-based study of lexical and suffixal paradigms (i.e., co-occurrences of similar bases or similar endings), including specific rhetorical figures, in more publicly available English language texts in late medieval England. It must be acknowledged here that before 1600, there was much overlap in the topical focus of rhetorics and grammars—far more than we see in present-day treatments of grammar and rhetoric. Even so, for organizational purposes this chapter will rely on a rough distinction between those texts more interested in grammatical structure and those more interested in the uses and purposes of figures and specific grammatical constructions in texts. The former will be discussed first, with particular attention to metalinguistic data that can be gleaned from grammatical treatments of the classification of morphology and the status of individual morphemes in English 1300-1600. Then, the discussion will move to metadiscursive treatments of word-formation in English as seen in rhetorically interested texts, ending with an analysis of the actual use of these figures in selected texts from the *Compendium of Middle English*.

Considering all of the metalinguistic and corpus data from the period, this study presents the following arguments: (a) The evidence from medieval grammars shows little to no awareness of derivational morphology as categorically distinct from inflectional

morphology. But by the sixteenth century, grammarians such as Mulcaster demonstrate an awareness of the morphological structure of borrowings and the suffixal status of a number of borrowed derivational affixes. (b) The lack of distinction between inflectional and derivational morphemes is reflected in vernacular rhetorics of the sixteenth century, which show an ill fit between Latin case-based models of rhetorical figures and the grammar of English. For the English rhetoricians, a lack of difference between morphological types, coupled with a fuzzy understanding of case, is significant. Without a clear sense of these distinctions, it was easier to transition away from definitions of rhetorical figures based exclusively on case, inflections, and declinability towards figures that included derivational morphemes, especially borrowed derivational suffixes. (c) There was a verifiable interest in the rhetorical uses of word-formation patterns in medieval England. The evidence from medieval rhetorics demonstrates there was a theoretical attention to the rhetorical uses of word-formation in written composition. Studies of medieval education show that these ideas were diffused in the medieval period via the transmission and study of rhetorical texts. And corpus-based studies confirm that Middle English writers were employing rhetorical figures in the vernacular, and in the absence of a rich system of case endings, turned to borrowed derivational morphology to create many of these figures. (d) The corpus evidence of lexical and suffixal paradigms suggests that some borrowed endings, such as *-ity*, *-age*, *-cioun*, and *-able*, were perceived as detachable and potentially productive units in Middle English.

4.1 Medieval Grammars and Word-formation

In his chapter on medieval preceptive grammars in *Rhetoric in the Middle Ages*, James Murphy (2001a) establishes that the predominant grammatical texts in Western Europe up to about 1200 CE were the Latin grammars of Donatus and Priscian, along with their imitators and commentators. Perhaps “the most successful single textbook in the history of Western education,” the *Ars minor* of Donatus briefly treats the eight parts of speech (139). His *Ars maior* (also called *Barbarismus*) includes, in addition to the parts of speech, a treatment of tropes and figures. Murphy emphasizes that, for the most part, medieval grammar as laid out by Priscian and Donatus was primarily concerned with syntax and figurae. Around 1200, however, grammars started to splinter off into several “parallel but separate developments in syntax, rhythmic, metrics, and ‘speculative’ grammar” (145).⁶¹ Included in this developing *ars grammatica* were medieval guides to composition such as the *Poetria Nova* of Geoffrey of Vinsauf, who was “extremely influential on Latin verse writing of the thirteenth century” and “continued to exercise authority, especially in France and England, until as late as the fifteenth century” (Murphy 2001b: 29). After 1200, two other grammar textbooks also began to be circulated within Europe—the *Doctrinale* of Alexander of Villedieu and the *Graecismus* of Evard of Bethune (Murphy 2001a: 138).

Many of these grammatical texts treat the structure of Latin along with prescriptions on language use; others include what in the present day would be typically called “rhetorical” concerns, such as the use of figures and tropes for various effects on

⁶¹ Speculative grammar is essentially a complex theory of signification developed by several language philosophers beginning in the thirteenth century. While an important phenomenon in the period, it has only little to say about morphology and word-formation. Cf. G.L. Bursill-Hall, *Grammatica Speculativa of Thomas of Erfurt*, and Robins, “The Middle Ages” in *A Short History of Linguistics*.

different audiences. In this section I will discuss two of the grammatical texts that offer some insight on morphology and word-formation in the medieval period: Varro's grammar and the *Ars minor* of Donatus.⁶² A study of grammars from this period discovers that derivational morphology was not treated as a distinct grammatical category. This discovery has two significant consequences for understanding borrowed derivational morphology in the late Middle English period. First, without any realization of a distinct category for derivational morphemes and little vernacular material, it is difficult (if not impossible) to locate direct, metalinguistic commentary on the morphological status of derivational morphemes in the fourteenth and fifteenth centuries. Second, the lack of distinction between inflectional and derivational processes may have impacted the English applications of Latin case-based models of rhetorical figures, specifically by allowing English rhetoricians and writers to use a wider variety of morphological endings than that advocated within Latin traditions.

Perhaps the earliest grammarian in Latin traditions to treat questions of derivational morphology and word-formation is Varro (116-27 BCE). As Robins (1997: 63) points out, Varro is one of the few classical language theorists to propose a distinction between derivational and inflectional morphology. In his *De Lingua Latina*, Varro delineates and names two types of word-formation: words declined *a voluntate* and those declined *a natura*, literally "by will" and "by nature," respectively.⁶³ Daniel Taylor provides an English translation of rubric 15 in Book X of *De Lingua Latina*, which elaborates upon this distinction:

⁶² Other grammars that treat tropes and figures, such as the *Doctrinale*, will be addressed briefly in the following section on medieval rhetorical theories of word-formation.

⁶³ The terms *declinatio voluntaria* and *declinatio naturalis* are also ascribed to these phenomena.

The second division concerns those words which can be changed in form: some are derived by will, others are inflected by nature. I term it will when anyone whosoever imposes a name from some name onto something else, as Romulus from his own name imposed the name on Rome; I define it as nature when we speakers do not all collectively ask, once the name has been received from that individual who has imposed it, how he wishes it to be inflected, but simply decline it on our own, as genitive *Romae*, accusative *Romam*, ablative *Romā*. Of these two processes, derivational morphology is related to usage, inflectional morphology to the linguistic system. (Varro and Taylor 1996: 65)

First, it should be noted that in the last clause Taylor translates Varro's terms into the modern linguistic terms *derivational morphology* and *inflectional morphology*. However, it is difficult to know how much Varro's categories would match modern classifications, particularly because Varro provides only a couple of examples (with the lexeme *Romulus* and the inflectional variations on *Rome*). Moreover, the translation should not erase the critical distinction in this period between word shape that is governed by nature versus that governed by the human will. As will be seen below with the Latin rhetoricians, there is an implicit assumption that in their compositions writers can, in fact, intentionally craft word shape with the case endings of Latin, though the grammar always limits the possible inflectional choices in any one specific context.⁶⁴ And interestingly, Varro's distinction is somewhat at odds with contemporary accounts of productive derivational morphology. Bauer (2005: 330), for example, discriminates between "creativity" and "productivity" in the use of derivational morphemes, asserting that the former includes intentional, "less automatic" creations while the latter is "clearly part of the system." Whereas contemporary morphologists typically believe in some sort of systematicity in the derivational realm, Varro denies it for the most part:

⁶⁴ In other words, the idea of writerly choice is constrained by certain features of grammar: e.g., the syntax may allow only an ablative in a particular context, so the writer must choose from available ablative endings on different nouns.

For that reason, accordingly, one ought not even posit a comparative similarity [i.e., analogy] and claim that *Capuanus* ought to be derived from *Capua* just as *Romanus* is from *Roma*, because in usage things are very much in flux inasmuch as those neologists who impose names on things do so without any expertise: when usage has received the names from them, disorderly speech necessarily obtains. . . . as I have said, morphological variation of this kind in the popular usage of words is weakly motivated, because it has its source in the arbitrary determination of the speech community: therefore in this process in speaking there is more anomaly than analogy. (Varro and Taylor 1996: 65)

Note that Varro does not rule out analogy completely here; he simply believes that derivational processes are mostly governed by the arbitrary will of speakers. While most historical morphologists today assume that derivational morphology has some significant systematicity—including the present author, who specifically finds analogical formations such as *Capuanus-Capua/Romanus-Roma* evidence for linguistic structure—this belief was clearly not always held in earlier periods of history.

Exactly how prevalent were Varro's ideas about derivational morphology in later Latin Antiquity and medieval Europe? In general, when medieval grammars overtly discuss morphology, the discussion revolves mostly (if not entirely) around inflectional morphology and case endings in Latin.⁶⁵ Robins (1997: 65-6) suggests that Varro was more of a maverick thinker in his times, and that many of his ideas were not taken up directly by later grammarians. Priscian's word class system, for example, seems to have been more influenced by the older Greek *Techné* than by Varro. After 1200 CE the Modistae, the Speculative Grammarians, tend to follow much of Priscian's morphological

⁶⁵ Even though case/inflectional morphology is the primary focus of Latin grammars, Vaahtera (1998) provides a comprehensive account of classical references to word-formation and concepts of *derivation*. She finds that "Derivation and inflection were not necessarily kept apart at a theoretical or terminological level," though she also believes that "the difference was generally grasped" (8). The distinction in classical texts, however, is rarely clear. For example, Priscian's list of "derivational types" included a mixed bag of morphological categories, including "patronymic, possessive, comparative, superlative, diminutive, denominative, deverbative, words derived from participles, and words derived from adverbs" (79).

descriptions. But unlike Priscian, they do establish “a distinction . . . drawn on syntactic lines between what have been termed in later formal grammar inflexional and derivational formations” (98-9). Robins emphasizes that as much as this distinction may resemble Varro’s, “there is no evidence of an actual use of Varro’s work by the *modistae*” (99). Generally in the medieval period, the lack of richer theorizations of word-formation, and more specifically derivational morphology, underscores Robins’ point above: rarely is a distinction made between inflectional and derivational morphology. If anything, grammars and rhetorics in the medieval period tend to blur this line—which is, in fact, a mostly modern formal linguistic line—when discussing the shape of words.

This tendency is perhaps most clearly observed in the most popular medieval grammatical work, Donatus’s *Ars Minor* or “Donet.” Murphy (2001a) affirms its omnipresence in educational contexts throughout the period: “Short enough to be memorized, and yet complete enough to provide materials for essential training, this brief treatment of the eight parts of speech was literally ubiquitous in medieval Europe both before and after 1200” (139). Sanford Brown Meech (1935) locates several translations, models, and imitations of the Donet composed in Middle English, scattered in various fifteenth century manuscripts. Meech believes that these grammars are evidence that Latin grammatical concepts were already being imported into discussions of English grammar, well before more elaborate grammars of English were published over a hundred years later. Conjecturing likely uses for these fifteenth-century grammars, he supposes that

Schoolmasters, instructing their pupils in Latin either orally or by the written word, equated Latin inflections and constructions with English ones to help the students with their Latin. In doing so, the schoolmasters and pupils came to regard them as belonging to the same formal categories and applied the names of Latin forms to English. (1016)

In other words, the initial motivation for applying Latin grammatical concepts to English grammar was pedagogical and heuristic in nature. The goal was to refer to pupils' native tongue as a means of clarifying taxonomies of Latin grammar, which focused primarily on inflectional morphology and addressed derivational morphology rarely, if ever. But importantly, this pedagogy compelled students to analyze morphology in English as a means of understanding it in Latin.

Consider the Middle English versions of the Donet provided by Meech in his article, "Early Application of Latin Grammar to English." In the Donet from St. John's College MS. 163, the author provides a discussion of the parts of speech, *noun*, *pronoun*, *verbe*, *aduerbe*, *participyl*, *coniunccyon*, *preposicyon*, and *interieccyon*. He provides little semantic definition of the parts of speech: "Qwerby knowyst a noun? ffor althyng þat may be seen, herd, oþyr felt, or beryth þe name of a thyng is a noun" (1019). In general, the focus is on the inflectional endings taken by the parts of speech in Latin. Latin nouns are characterized by the inflectional morphemes they take, such as case, number, and gender. Even though examples of English nouns are provided, there is no discussion of English nominal morphology. And for the most part, derivational endings in both Latin and English are ignored in the catalogue of morphological forms. The one exception in English appears in the section on adverbs from the St. John's College MS. 163:

How knowyst þe posityf degre of aduerbe? Ffor he endyth in Englysch most comunly in **-ly**, as **fayrly**, **goodly**⁶⁶, **swetely**, & soche oþyr. How knowyst þe comparatyf degre? ffor he endyth in Englysch in **-er** or in **-jr**, as **swetter**, **betyr**. How knowyst þe superlatyf degre? ffor he endyth in Englysch in **-est**, as **fayrest**, **fowlest**, & soch oþyr.

(1025)

In present day grammars, adverbial *-ly* is typically classified as a derivational morpheme since the suffix changes the word class of the base without changing its lexical meaning.⁶⁷ Here, however, *-ly* is presented as a marker of adverbial degree, much like the ME and PDE adverbial inflections for the comparative (*-er*) and the superlative (*-est*). Such awareness of English morphology is rarely expressed in this period, and we can see in this example that no clear distinction is drawn between inflectional and derivational morphemes. There is no recognition, for example, that the *-ly* in *swetely* changes the part of speech of *swete*, whereas the *-er* in *sweter* changes only the comparative degree of the adjective (or adverb). It is possible, in fact, that *-ly* in this period was seen as a type of inflection in English, or a change of word shape *a natura*, forced by the linguistic system onto adverbs.

The influence of the Donet on literate English speakers should not be underestimated, as this text permeated English schooling up through at least the fifteenth century.⁶⁸ There is evidence that a significant component of pedagogical instruction using the Donet required learners to analyze English morphology in order to understand Latin morphology. Some of this instruction likely focused on English derivation as well, though the evidence above suggests that such instruction did not distinguish between

⁶⁶ This lexeme is likely the now mostly obsolete adverbial *goodly* from ME, rather than adjectival *goodly* more familiar to PDE speakers.

⁶⁷ Proponents of the inflectional/derivational continuum (cf. Bybee 1985) suggest that *-ly* behaves less prototypically like a derivational morpheme than others and exhibits some qualities of inflections.

⁶⁸ The text is available in numerous manuscripts throughout England, in multiple recensions and redactions.

derivational and inflectional formations in English (and perhaps not in Latin, either). Even so, in terms of charting metalinguistic awareness of morphology during this period, the Donet should certainly be considered alongside other traditions, such as the Latin rhetorics.

4.2 Sixteenth Century English “Grammar”: Mulcaster

In the sixteenth century, more elaborate vernacular treatments of English grammar began to emerge, particularly in the works of John Hart, William Bullokar, and Richard Mulcaster. The bulk of this material focuses on orthography and the relationship between written letters and their phonetic counterparts. But in the case of Mulcaster’s *Elementary* (1582), much of the orthographic discussion relies on specific assumptions about English morphology. A modern reader can thus mine this “orthographic” text for metalinguistic information on particular morphemes and the broader classifications of inflectional and derivational processes.⁶⁹ In particular, this study finds that Mulcaster does not perceive borrowed affixes to be productive in English, even though most of them are singled out as identifiable and independent linguistic units in the English language. This independence, however, is not dependent on semantics: Mulcaster argues that suffixes have no semantic value. An exception among borrowed affixes is *-age*, which Mulcaster classifies as a compounding form.

Mulcaster’s primary goal is to set out a prescription for the “right writing” of English—the orthography that (in his mind) best represents the finest state of the English

⁶⁹ This is not to argue that Mulcaster is necessarily representative of typical of views on morphology in the sixteenth century. (It is difficult to know what was “typical” in the period.) But his text, even if somewhat idiosyncratic, provides one set of insights into the ways English morphology was perceived in the sixteenth century.

tongue. He makes several linguistic distinctions that illuminate much about English morphology at the time: (1) the differences between English/natural, foreign/stranger, and *enfranchised* words in the language; (2) the distinction between *composition* and *derivation*; (3) the distinction between *substantiary* and *accidentary* derivatives.

Throughout the *Elementary*, Mulcaster makes overt reference to the fact that some English words sound “English” while others sound “foren.” The primary sonic difference seems to be explained by differences in syllabification: “All the words which we do use in our tung be either naturall English, and most of one syllab, or borrowed of the foren, and most of manie syllabs” (153). Noting that the written representation of foreign words is always difficult for writers, he also identifies the process of *enfranchisement*, in which “their termes . . . becom ours, with som alteration in form, according to the frame of our speche” and “becom bond to the rules of our writing” (155). Mulcaster does not give clear examples of how these rules operate in practice, though he includes some examples of enfranchised terms in his General Table of common English words (e.g. *minstrell*, as compared to Old French *menestral*).⁷⁰

His attention to the differences between the native and foreign lexical elements has important consequences for our understanding of morphology in the period. Mulcaster describes a somewhat complex scenario: some words are perceived as native, some as foreign, and some as “in between” these poles. His comments on the nativeness, foreignness, or mixed composition of different lexical items provide insight into the potential naturalization of specific morphemes and morphological processes in this period.

⁷⁰ Cf. *OED* minstrel

For example, Mulcaster provides some perspective on the question of the naturalization of derivational processes themselves. He writes,

. . . foren derivations have respect allwaie to their own originalls, as *construction*, *persecution*, *argument*, *abundance*, com not of *constrew*, *persew*, *argew*, *abound*, but of their own latin primitives. (147)

Here he argues that these derivatives were not formed within English, but rather they were borrowed wholesale from Latin. The derivations occur in Latin before the borrowing occurs. Or, in other words, both the bases and the derived forms were borrowed into English; there was no productive application of an English word-formation rule involving these bases and *-ment*, *-tion*, or *-ance*. He intends for the orthography to reflect these differences, perhaps so that English writers do not attach (for example) *-ment* to the “enfranchised” form *argew*.⁷¹ Even so, as was described in the preceding chapter, it is impossible to know for certain whether or not the use of a derived form is a borrowing or the application of a productive rule. Even if a writer has intentionally borrowed a derived form, it is always possible a reader may interpret it as a derivation on a base that s/he has read or heard previously. Mulcaster’s own example above relies on four clear lexical paradigms, regardless of the source language of these lexemes:

construction/constrew, *persecution/persew*, *argument/argew*, *abundance/abound*.

Ironically, even though he argues for a lack of a lexical relationship for these forms within English, readers can still detect the potential detachability of *-ment*, *-tion*, and *-ance* if they recognize the semantic relationship of each base and each derived form.

Thus, an analysis of Mulcaster’s claim about lexical relationships between derivations

⁷¹ It is still not clear, however, why the derived forms are not further “enfranchised” in terms of orthography.

raises the following possibility: the status of “borrowed” or “native” may be completely irrelevant to individual readers’ and speakers’ ability to recognize (even on an intuitive or subconscious level) the lexical and semantic relationships between words. Even so, Mulcaster’s observations are useful in determining a contemporary account of the perceived productivity of certain borrowed suffixes. By suggesting that foreign derivations were derived from Latin primitives, he insinuates that the productive processes involving *-tion*, *-ment*, and *-ance* are a Latin rather than an English phenomenon.

Mulcaster pays careful attention to the difference between words composed entirely of free morphemes—what present-day linguists would call *compounds*—and those that include bound morphemes, which would be termed *derived* or *inflected forms* today. He distinguishes the processes as follows:

For as composition handleth the coplements of severall hole words which by their uniting make a new one: so derivation handleth the coplements of one hole word, and som addition put to it, which the addition of it selfe signifieth nothing alone, but being put to the hole word qualifieth it to som other use, then [than] the primitive [original base] was put to, as *frind*, being a primitive receiveth manie additions, which yet signify nothing in the sense of their addition, tho theie change the force of *frind*, as *frindship*, *frindlie*, *frindlinesse*, *frinds*, *frindeth*, *frinded*, *frinding*, *frindedst*, &c. (144)

It is clear that Mulcaster perceives derivation as a lexical paradigm of sorts, one in which each form is directly linked to the “primitive”—in his example, the base “frind.” And inflected forms (*frinds*, *frindeth*) are mixed together with derivational forms (*friendship*, *friendliness*). Unlike some contemporary accounts of morphology, which in Chapter 1 were shown to distinguish derivational forms as separate lexemes, it almost seems for

Mulcaster that all forms (whether inflectional or derivational) are part of the same lexeme, bound together by the primitive. His theory has perhaps inherited from classical and medieval assumptions the fuzzy differences between inflectional and derivational morphemes.

Furthermore, beyond calling them “some addition,” he does not ascribe a label to the suffixes themselves. Indeed, according to Mulcaster, bound morphology seems to have a murky semantic status. He reiterates the claim that a suffixal addition “signifieth nothing alone,” but rather creates a sort of pragmatic meaning by “qualify[ing]” the base “to some other use,” or else “chang[ing] the force” of that base. Fundamentally, Mulcaster’s theory of morphology ascribes little to no semantic content in suffixes, even though he does suggest that they are discrete units in the language that operate on more fundamental linguistic units (i.e., the primitives).

Interestingly, all of Mulcaster’s examples of *derivation* are suffixal. He describes prefixation as a type of *composition* or compounding, specifically as prepositions that have been attached to primary words. He contrasts English post-positional phrasal verbs (“go before, com behind”) to the case of “latin prepositions,” which when “use[d] before our words, we fashion them to clasp with our letters following, as the Latins do in the like cause, as *displease, disease, disworship, complain, contein . . .*” (143-4). In the section on compounds, he also lists with examples “our chefe prepositions,” the native English prefixes: *a-* (*ado*); *be-* (*behead*); *for-* (*forsake*); *fore-* (*forecast*); *gain-* (*gainsaie*); *mis-* (*misdeemeanor*); and *un-* (*unkinde*). His taxonomy—with prepositions categorized as a type of compounding and suffixes listed as derivations—may suggest a theory of affixation in which prefixes are granted more “word”-level status than suffixes. With so

few sources on morphology from this period, it is impossible to know how typical or radical this view might have been.

In his discussion of the semantics of compounds, Mulcaster makes the curious point that they are “made of two or mo simple words, whereof everie one signifyeth somewhat agreable to the composition, even when theie ar used alone, *if theie be ever used all alone*” (141, italics mine). He acknowledges the potentiality of signification for certain units such as prefixes, even though he simultaneously notes after this quote that the prefixes *be-*, *gain-*, *a-*, and *un-* are “never used alone.” So why, then, does he classify these forms as compounds? If the criterion for a word isn’t its isolatability aloud or on the page, then the classification here must depend on semantics. Although Mulcaster does not spell out much about the actual semantics of these prefixed forms, he implies that they do denote something semantically and independently from the rest of the word within which they appear.

With this definition of compounding in mind, it is all the more surprising that Mulcaster lists multiple examples of *-age* and *-dom* formations as examples of composite (compound) forms. In a metrical and orthographic analysis of bisyllables, he provides examples of composition: *breakfast*, *thraldom*, *vauntgard*, *lastage*, *pondage* (138). And he even acknowledges the existence of hybrid forms, that “Ye shall sometime have a word mungrell *compound*, half foren, half English, *Headlong*, *wharfage*, *princelike*” (141).⁷² Because Mulcaster treats *wharfage*, *pondage*, *lastage*, and *thraldom* not as derived forms but as compounds, it is possible that *-dom* and *-age* were seen as independent, meaningful

⁷² Note that *wharfage* was one of the only two Germanic base + Romance suffix forms found in the study of the Grocers records in Chapter 3. It is interesting here that once again *-age* has been identified as more independent than the other borrowed affixes.

units in the English language at this time—even if, like prefixes, they never occurred alone.

While Mulcaster does not subdivide composition/compounding further, he does split derivation into two smaller groups: *substantiary* and *accidentary* derivatives. The latter category resembles the modern label of *inflectional morphemes* and “concern[s] numbers, tenses, persons, and such properties as we call accidents in the learned handling” of words (145-6). *Substantiary* derivatives seem to resemble the PDE classification of derivational morphemes, except that Mulcaster includes participles, comparative, superlative, and the simple possessive *-s* with this group.⁷³ Mulcaster does not rely much on this distinction outside of the section on derivation. But he does provide a list of “commonlie” used “terminations.” This list represents an important “meta” development in English morphology. It is one of the earliest, if not the earliest, formal catalogues of suffixes in English. By isolating these terminations as discrete forms, Mulcaster implies that they are distinct—though not meaningful—units of the English language. I present these items in the same order, but in a more user-friendly table below:

⁷³ In PDE, the possessive suffix is typically categorized as an inflection alongside number and tense markers.

	Terminations	Examples
Derivate Substantive	nesse	madnesse
	ship	workmanship
	age	cosinage
	dom	fredom, kingdom
Derivate Substantive	th	length, strength, welth, helth, truth
	let	chaplet
	hood	womanhood
	rie	knaverie
	all	refusall, denyall
	ance	defiance
	ing	chambring
	tie	frailtie
	ment	punishment
	yer	lawyer
	er	writer
	our	demeanour

Derivate Adjective	lie	fatherlie, monthlie, wifelie
	an	Italian, Grecian, Roman
	ish	Scotish, campish, kentish
	ie	witie, baudie, sandie
	s (possessive)	Kings, Quenes, mothers
	er	wiser
Derivate Adjective	est	wisest
	ing	loving
	ed	loved
	ght	taught, thought
	en	writen, threaten, slain
	ous	vertewous
Derivative Number	es, s, n	muses, wives, words, tops, oxen, howsen
Derivative Person	est	lovest
	eth	loveth
	ith	seith
	edst	lovedst

Table 4.1: Mulcaster's list of English suffixes

This chart raises several points of interest to morphologists. To begin, while Mulcaster's distinction between substantiary and accidentary derivatives comes closer to the derivational/inflectional divide than earlier treatments of morphology, it is clearly not identical to the present day distinction. Many inflectional forms such as participles and comparative/superlative forms appear alongside derivational forms such as *-ous* and *-ish*. Both native and foreign terminations are provided. No clear distinction along these lines is made in the list itself, except for an unclear suggestion that *-tie* examples do not belong if they "com of the enfranchised substantives" (146).⁷⁴

Certain forms are treated as distinct terminations. The suffix *-yer* is separate from *-er*; *-eth* and *-ith* are distinct; and *-est* and *-edst* are in different parts of the list. One might argue that these are separated because of mere differences in spelling and do not suggest that these forms were seen as distinct morphemes. However, all of the plural inflections are grouped together in one entry, which suggests a recognition that there is one underlying morpheme. It is possible that, for Mulcaster, some of these forms might have been perceived as distinct morphemes.

Mulcaster claims these forms represent "common" terminations at this period of the English language. Even so, it is difficult to know if this is a casual observation about actual frequency. It should be noted that Mulcaster does not include *-tion* and *-able*. It is hard to believe that these were not as common as some of the listed forms, particularly

⁷⁴ Because of ambiguous modification, he may also be suggesting that *-ment* forms that are "enfranchised" do not belong in this list.

because Mulcaster cites a number of examples of these forms in other parts of his book.⁷⁵ It is unlikely he did not see these as derived forms: he specifically notes after this list that “we ar to mark the naturall foren *derivation* verie carefullie, as *action*, *passion*, *reflexion*, *pronunciation*, all of which sound like to our *shon*” (147). This passage suggests that Mulcaster believed there was a termination in English that sounds like *shon* but looks like *-tion*, *-sion*, and *-xion*. And yet he omits *-tion* from the main list of terminations. It is difficult to sort out his specific views on this word formation pattern.

Overall, Mulcaster provides much metalinguistic insight on morphology in English before 1600. Even so, one must be careful to acknowledge that this is only one author’s view of the vernacular. His claims about morphological status may not be necessarily representative even of most grammarians or the English-speaking populace at large. But the *Elementary* raises the possibility that these views about English morphology were circulating in the sixteenth century. In fact, in his Epistle to the *Elementary*, Mulcaster (1582) wishes for his text to be a teaching aid for both “young learners” and the “old learned.” Depending on how much this type of grammar was actually taught, there is a possibility that such overt discussion and cataloguing of derivational terminations impacted the language use—and consequently, the morphological productivity—of certain suffixes. Of course, this impact would have existed primarily for the learned, particularly for writers of English.

⁷⁵ This is not to mention ample dictionary and corpus evidence of the use of *-tion* and *-able* forms in the sixteenth century.

4.3 Word-formation within Rhetoric: Polypoton, Homoeoptoton, and Homoeoteleuton in Medieval Latin traditions

Unlike Mulcaster's *Elementary* of the sixteenth century, earlier taxonomies of grammatical forms generally show little overt interest in word-endings that would today be classified as "derivational," and only a few sources express the possibility that these endings inhabit a distinct morphological category. Even so, when classical and medieval rhetorical texts (as well as rhetorically-interested grammars) are examined, it becomes apparent that word formation is a prevalent concern for theorists and practitioners of writing, even if the line between inflectional and derivational forms remains fuzzy or non-existent. In this section, I discuss rhetorical texts that address the morphological shape of words via the classical figures of polypoton, homoeoptoton, and homoeoteleuton. I focus on texts that were widely disseminated in medieval Europe and, in particular, the rhetorical tracts that emerge within the context of rhetorical practices on English soil—from Bede's *De Schematibus et Tropis* to Peacham's *The Garden of Eloquence* in the sixteenth century.

These texts matter to this study for several reasons. They establish that there was a continuing theoretical interest in the rhetorical uses of word formation throughout the medieval period and into the sixteenth century. Furthermore, they display the differences in Latin case-based definitions of rhetorical figures and the vernacular English derivationally based ones. And ultimately, their prescriptions and motivations for employing these figures provide information on the frequency and types of patterns to

expect in a corpus study of Middle English texts. Focusing on medieval Latin rhetorics, this section documents the definitions, motivations, and prescriptions for word-formation based rhetorical figures that were later taken up and adapted by late Middle English writers and sixteenth century English rhetoricians.

Of particular interest to the study of morphology in these rhetorical texts are three rhetorical figures: *homoeoptoton*, *homoeoteleuton*, and *polyptoton*. A classical text that describes these figures, Donatus's *Ars Maior* was a common and influential text on rhetorical theory and practice in the medieval period. In its list of several rhetorical figures and tropes, these three patterns are defined as follows:

(12) **Homoeoptoton** est, cum in similes casus exeunt verba diversa, ut merentes flentes lacrimantes commiserantes. (**Homoeoptoton occurs when various words end in the same case**, as: merentes flentes lacrimantes commiserantes. (Ennius 1.107; Loeb ?): 'sorrowing, weeping, shedding tears, commiserating'.)

(13) **Homoeoteleuton** est, cum simili modo dictiones plurimae finiuntur, ut eos reduci quam relinqui, devehi quam deseri malui. (**Homoeoteleuton is when several utterances end in a similar fashion**, as: eos reduci quam relinqui, devehi quam deseri malui. (Ennius, Iphegenia, fragm. 9) 'I did not wish to bring them back as much as to give them up, to lead them as much as to desert them'.)

(14) **Polyptoton** est multitudo casuum varietate distincta, ut litora litoribus contraria, fluctibus undas inprecor, arma armis, pugnent ipsique nepotesque. (**Polyptoton is the use of many cases in various ways**, as: litora litoribus contraria, fluctibus undas inprecor, arma armis, pugnent ipsique nepotesque. (Aeneid 4.628) 'Shore against shore, water against wave, I pray, arms against arms, may they fight, they and their children.')

It is perhaps useful to consider briefly some PDE examples of these figures as a contrast to the classical examples above:

⁷⁶ The original Latin is cited from http://www.frapanthers.com/teachers/white/donatus_ars_%20maior.htm last accessed on July 10, 2007. In parentheses appear translations of each item cited from <http://ccat.sas.upenn.edu/jod/texts/donatus.6.english.html>, where J. Marchand is listed as a translator, last accessed on July 10, 2007.

- (a) homoeoptoton: “Suffering from air pollution? oil addiction? road congestion? gas emissions? parking frustration? The cure is on its way . . .” (Advertisement for Ann Arbor Transit Authority Buses, Fall 2007)
- (b) homoeoteleuton: “If it weren’t for happiness, I would never know sadness” (invented)
- (c) polyptoton: “M Gouhier thought that a philosophy of truth explains and demonstrates. It can only explain the explainable and demonstrate the demonstrable.” (Fafara 2003: 138)

Notice that examples (a) and (b) both rely on the repetition of a suffix. The primary difference is that homoeoteleuton repeats a suffix clause-finally, while homoeoptoton repeats a suffix at the end of each phrase in a series.⁷⁷ But practically speaking, it is often difficult to distinguish between these two figures. Some rhetoricians collapse them into the same category—i.e., any repetition of a suffixal element—while others distinguish them in different ways. The polyptoton in example (c) lines up different derivations of *explain* and *demonstrate*, including the base (bare infinitive) form, the third person singular form (base + inflectional *-s*), and the deverbal adjectival form (base + derivational *-able*). It is significant to note here that the classical examples all employ case endings, whereas PDE can include inflectional or derivational morphology.

It should be acknowledged that these figures typically occur within the same “utterance,” which usually means the same clause or sequence of clauses. They differ from other examples of suffixal and lexical paradigms (as seen in the Grocers and Goldsmiths records in Chapter 3) in that the repetition of the bases or endings does not occur across larger stretches of discourse, such as the top and bottom of a manuscript page. Because the repetition of word parts is clustered together so closely, these figures

⁷⁷ Note, though, that the Latin definition of *homoeoptoton* stipulates that the suffix must be a case ending. For historical reasons, this is difficult to achieve in PDE. So instead I provided a typical contemporary example which relies on a derivational morpheme rather than an inflection.

can be employed for various rhetorical effects. Donatus provides no commentary on the potential contextual uses of these specific figures, but other rhetorical theorists lay out descriptive commentary on these figures. And some provide preceptive or even prescriptive rules for their use in oral or (more commonly) written contexts.

Bede is the first known Englishman to adopt and adapt Donatus's ideas on rhetorical figures into his own framework for his students at Yarrow in Northumbria in 701-2 CE (Tanenhaus 1962: 237-9). His intent was to actuate Augustine's call for a method of teaching the rhetorical tropes of Scripture; he wanted to unearth the Bible's rhetorical artistry. Robert Curtius (1953) emphasizes that Bede's "principle of co-ordinating the rhetorical theory of figures with the study of the Bible prevailed and was to grow like a mustard seed" (47).⁷⁸ To achieve this co-ordination, Bede provides each definition with illustrative examples from the Bible, entirely in Latin. Homoeoteleuton is exemplified by passages from Ecclesiastes; homoeoptoton by quotes from Psalms and Ezekiel; and polyptoton by citations of Romans and Psalms (Tanenhaus 1962: 243-4). Bede provides little prescriptive commentary about the use of these forms. But he does note that all three are some of the "more prominent" examples of the "many varieties of figures" (240), and that homoeoteleuton was used often by Father Gregory and was described by Jerome as an example of "the elegant declamations of orators" (243). While Bede's primary effort may have been to elevate the rhetorical reception of the Bible, to laud not only its divine authority but also its "age and artistic composition" (240), there is a reciprocal ennobling effect on rhetoric. These rhetorical figures are not only tools for "teachers of secular eloquence" (240); they are also fit for Holy Scripture. As will be

⁷⁸ This section from Curtius is also cited in Tanenhaus (1962: 239).

demonstrated later in this chapter, the Wycliffites also believed in the appropriateness of classical rhetorical figures for vernacular Biblical language: their translation of the Bible displays a number of homoeoteleutons and polyptotons in Middle English.

These figures were not restricted to the domain of Latin in Bede's day. Old English (OE) writers also employed them, though infrequently. Jackson J. Campbell (1966) argues that some OE poets were clearly aware of learned rhetorical traditions from Latin. He finds evidence of OE poets employing "sophisticated rhetorical technique[s]" such as homoeoptoton in their original Latin verse. He also illustrates an OE use of homoeoteleuton in a short poem from "Latin-English Proverbs":

Hat acolað, hwit asolað
leof alaðap , leoht aðystrað,
aeghwaet forealdað þaes þe ece ne byð.

Because Old English verse relied on alliteration as its primary rhyming device, it is clear that the repetition of *-að* is a rhetorical figure rather than an example of regular end-rhyme. At this stage of the language, these Latin rhetorical patterns were perhaps easily importable into OE since it had a rich system of inflections with which a writer could experiment. Indeed, Campbell cites other examples of homoeoptotons in an Old English poet's rendering of Lactantius's poem (1966: 196) and in a poem by the Phoenix poet (197). It should also be noted that in both Latin and Old English, the three rhetorical figures are almost always based on *inflectional* morphology: polyptoton and homoeoptoton are, per Donatus's definition, based on nominal case, while homoeoteleuton often involves verbal inflection (though may include case or any

repeated, final sound). In discussing the specific examples from OE poetry, Campbell notes that “extremely meticulous reproduction of Latin stylistic effects in Old English is not especially frequent” (195). Indeed, certain Latin rhetorical patterns in Old English are claimed to be infrequent: in discussing the work of the Phoenix poet, he asserts that polyptoton is a “relatively unusual” rhetorical figure (195).⁷⁹ Thus, while there is strong evidence that Latin rhetorical traditions impacted English writing, many of the rhetorical figures themselves were used infrequently.

Prescriptive evidence from other medieval rhetorics provides some insight into the motivations for employing word-formation based rhetorical figures as well as their expected frequencies in texts. One of the more widespread texts⁸⁰, the *Doctrinale*, briefly suggests that polyptoton should be used to give more variety to an oration (Villadei 1993: 192). More elaborate prescriptions can be seen in the Pseudo-Ciceronian *ad Herennium*.⁸¹ It is always difficult to establish the actual popularity or circulation of such texts, but Murphy (2001a) illustrates that the “most frequently used Ciceronian books before the fifteenth century were his youthful *De inventione* . . . and the Pseudo-Ciceronian *Rhetorica ad Herennium*” (109).⁸² The author of the *ad Herennium* is particularly interested in the correct rhetorical uses of these forms. For example, after

⁷⁹ It should be acknowledged that Campbell’s observations about frequency were made in 1966, well before the era of computer-assisted corpus studies.

⁸⁰ Cf. Murphy (2001a: 148).

⁸¹ It is “pseudo” Ciceronian in that authors had assumed throughout the Middle Ages that Cicero had composed it, even though later scholars have doubted his authorship.

⁸² Murphy (2001a: 108-123) cites evidence of manuscripts throughout Europe containing the original works, translations, imitators, references, and a number of medieval commentaries on the *ad Herennium* itself.

providing definitions and examples of homoeoptotons and homoeoteleutons,⁸³ the author states that “these two figures, of which one depends on like word endings and the other on like case endings, are very much of a piece. And that is why those who use them well generally set them together in the same passage of a discourse. One should effect this in the following way . . .” (301). An example is then provided which, according to the author, exemplifies the best use of these figures—i.e., employing them in tandem. Noteworthy here are the prescriptive attitude towards rhetorical uses of words with the same endings as well as the recognition that these two figures are morphologically different yet rhetorically similar. The author emphasizes this difference after the prescriptive example, stating that “here the declinable words close with like case endings, and those lacking cases close with like terminations” (301). Unlike Donatus and Bede, the *ad Herrenium* focuses less on the clause-position of these figures and much more on their morphological difference: declinability vs. indeclinability.

An even more prescriptive assessment is provided after the explanation of polyptotons:

These last three figures—the first based on like case inflections, the second on like word endings, and the third on paronomasia—are to be used very sparingly when we speak in an actual cause, because their invention seems impossible without labour and pains. . . . Such endeavors, indeed, seem more suitable for a speech of entertainment than for use in an actual cause. Hence the speaker’s credibility, impressiveness, and seriousness are lessened by crowding these figures together. Furthermore, apart from destroying the speaker’s authority, such a style gives offense because these figures have grace and elegance, but not impressiveness and beauty. . . . If, then, we crowd these figures together, we shall seem to be taking delight in a childish style; but if we insert them infrequently and

⁸³ Homoeoptoton is called *similiter cadens*, and homoeoteleuton *similiter desinens*. Polyptoton appears as a type of *paronomasia*. The translation used here is by Harry Caplan in a 1989 reprint of the *ad Herennium*, Ed. G. P. Goold.

scatter them with variations throughout the whole discourse, we shall brighten our style agreeably with striking ornaments. (309)

The author's careful, prescriptive attention to the rhetorical use and misuse of word-formation patterns reveals several insights here. First, the length of this passage, as well as the singling out of these specific figures, suggests that word-formation may have mattered significantly in classical and medieval assessments of rhetorical effectiveness. A sparse use of these devices could heighten the agreeability of the oral or written style; overuse could seriously threaten the ethos of the rhetor. Second, this prescription corroborates Campbell's observation that certain word-formation patterns were relatively infrequent. If taken earnestly, the quote calibrates reader expectations about their use in discourse. Medieval students of this text would certainly be encouraged to employ them, though only strategically and sparsely. Modern readers would know not to approach medieval texts expecting a high frequency of these figures—at least in those texts aiming for something other than a “childish style.” This prescription is thus particularly significant for corpus studies of these figures: a corpus linguist should not discount relatively low frequencies of these figures if they were intended to be used sparsely.

Relying on the *ad Herrenium* in his own work, Geoffrey of Vinsauf provides a much different prescription for the use of word-formation in prose and verse composition. As Murphy (2001b) explains in the introduction to a translation of Geoffrey's *Poetria nova*, this medieval work “was a success even in its own author's lifetime (c. 1210). Extremely influential on Latin verse writing of the thirteenth century, it continued to exercise authority, especially in France and England, until as late as the fifteenth century. Chaucer himself, who in one famous instance referred to its author by

name, quoted one or two passages nearly verbatim” (29).⁸⁴ Despite his reliance on the rhetorical figures laid out in the *ad Herennium*, which Geoffrey playfully calls *colores*, he departs from previous approaches to the subject matter. Rather than laying out definitions with clearly labeled examples, Geoffrey begins by simply putting them all into practice in a passage of his own invention (Murphy 2001b: 73-77). Examples of homoeoptoton, homoeoteleuton, and paronomasia all appear in the same order as listed in the *ad Herennium*. Relying on a floral metaphor, Geoffrey too advocates a sparing use of such *colores*, while also stressing variety: “But let your speech flower sparingly with them, and with a variety, and not be thick with them. That fragrance is better that arises from an assortment of flowers; the vice of repetition can render insipid what has of itself a fine flavor” (77).

Even more interesting is another major departure from previous rhetorics—Geoffrey’s theory of conversions. This concept directly concerns the relationship of word-formation patterns to writing practices in the medieval period. Geoffrey begins the discussion of this theory by addressing the age-old problem of writer’s block, providing a somewhat surprising solution:

You know what is fitting and you utter things fit to be said, but perhaps led by chance, not art. Nor do you have a feel in composition for the kind of thing that you should observe at first sight, and on which you should expend effort—in other words, what the point is from which you may anticipate the direction of the effort to be made, what the source is which may beget ornament of words. Instead, your mind wanders this way and that; and the footprints of your dubious mind are aimless, like those of a blind man, groping for where or which the proper way may be, whose eye is a staff and whose guide is chance. What, then, to do? By art you may train the mind, which like an idler is drifting.

⁸⁴Cf. also Marjorie Currie Woods on the wider rhetorical impact of Vinsauf. <<http://www.oslo2000.uio.no/AIO/AIO16/group%201/Woods.pdf>>, Retrieved 16 July 2007

Select a definite ‘place.’ There are only three places: first, an expression that can be varied through tenses; next to that, an expression varied by grammatical cases alone; lastly, an expression that resists inflection. And this is the way it may be done. (89)

Geoffrey portrays the mind of the struggling writer as a drifter—one who has ideas but no direction, plan, or clear starting point. He suggests that morphological play can ground the mind of the writer and open up a clearer path to rhetorical expression. Geoffrey’s approach here is a major divergence from other rhetorical treatments of word-formation. Other authors tend to submerge morphological figures in long lists of rhetorical schema, implying that they are linguistic ornaments, mere epiphenomena to the primary “message” of the text. Geoffrey, however, flips this implication on its head: he argues that word-formation can help guide and construct that message.

Moreover, Geoffrey explicitly advocates the use of not only inflectional processes, but derivational ones. His first proposed step reads as follows: “Here is the first place: think of a verb. Let that convert into a noun, either one that derives from the same stem, or one that derives from the same stem as a verb that has the same meaning; or let it be approximated by a satisfactorily expressed synonym. . . . With this, therefore, as the basis of your effort, go about the matter as follows. You may vary the case of a particular noun, and, to it, adapt whatever sequence of construction will properly serve the subject proposed” (90). In other words, the writer should first try to convert a verb into a noun via derivational change or synonymy, then vary the cases of that noun (polyptoton), and finally adapt the syntactic constructions around these word-formations in order to evoke the subject matter. Geoffrey describes the conversion as organic growth. The noun “comes forth from the verb like a branch from a trunk, and it keeps the

flavor of its root.” But because of the slight *difference* between these words—the fact that grammatically the noun is no longer immediately “sufficient to the matter”—a “whole fire will be revived out of this spark—with the help of other closely related words and by the craft of the mind” (90). Thus, conversion has two main advantages. The lexical connection between words ensures that ideas cohere and the writing grows further. But at the same time, the grammatical difference in the morphology and syntactic functions between the verb and noun spurs the mind to generate more writing to make the converted and declined forms fit the subject at hand. Similarly, Geoffrey discusses the conversion of adjectives to nouns: “Thus, derive ‘whiteness’ from ‘white’ so that a better mode of expression may result from case variations” (92). He does not, however, discuss converting nouns to adjectives or verbs, presumably because the flexibility in case declensions would be lost.⁸⁵

Geoffrey’s approach to word-formation is unique in that he explicitly opens up space for writers to toy with derivational processes alongside inflectional ones. And he does not treat the use of these figures as merely decorative or ornamental. Rather, his theory of conversions suggests that word-formation can be used as a practical heuristic, a generative approach to writing that helps discourse, and the ideas represented by that discourse, cohere and grow.

⁸⁵ As a separate step, he recommends using periphrasis as a substitution for indeclinable words.

4.4 Social Networks and the Dissemination of Latin Rhetorical Traditions in Late Medieval England

Even though there were no English vernacular rhetorics until the sixteenth century, there is evidence that the Latin rhetorics and grammars discussed above were known and used in medieval England.⁸⁶ Confirmation of the use and diffusion of these texts can be found in the following: manuscript and catalogue evidence of the original Latin materials; commentaries on these materials; authors' citations of rhetoricians and/or their ideas; and corpus evidence of the use of rhetorical figures in vernacular writing. While a later section will present a detailed corpus-based analysis of the use of homoeoptoton and polyptoton in selected Middle English prose, here I provide a brief overview of the social networks within which the texts describing these rhetorical figures were used and diffused in medieval England. Specifically, my research has identified three distinct but overlapping networks: (a) the university system, i.e. Oxford and Cambridge; (b) the grammar school system; (c) Benedictine monasteries.

Murphy (1965) contends that England was late to develop a rhetorical interest, especially before the fifteenth century.⁸⁷ But even fifteenth-century rhetorical developments in England were sparse, with only passing references by some authors (e.g., Lydgate) and rare vernacular treatments such as that in *The Court of Sapience* in

⁸⁶ One possible reason for the lack of vernacular rhetorics may have been that ME writers felt fully informed by the available rhetorical manuals in Latin. And because they used borrowings from Latin and French on a regular basis in ME, they may have felt comfortable adapting this knowledge to the vernacular without needing the authority of an English-language rhetoric. The sudden appearance of vernacular rhetorics in the sixteenth century, then, may have coincided with the rising status of the vernacular by the early modern period.

⁸⁷ Citations in this paragraph come from various published essays collected in James J. Murphy, *Latin Rhetoric and Education in the Middle Ages and Renaissance* 2005.

1447, John Blakeney's treatment of rhetorical figures circa 1449, and David Pencaer's book of *colores* mid-fifteenth century (12-13).⁸⁸ Murphy does acknowledge that although rhetoric seemed to have no demonstrable continuous traditions at the university level in the fourteenth century—at least at Oxford—a 1431 statute required both grammar and rhetoric to be taught. According to university records, including the works of Thomas Merke (lecturer and preacher at Oxford), the *ad Herennium*, *Graecismus*, and Geoffrey are all cited as references (19). In fact, the *ad Herennium* was one of four texts mentioned as compulsory in the rhetoric sequence at Oxford (14). Clearly, rhetorical ideas from these texts were circulating in some form even if the original texts were not being translated nor regularly taught before 1431.

Other scholarly work confirms Murphy's view that texts containing rhetorical figures, whether classified in the period as grammars or rhetorics, formed a basic part of medieval education at the grammar school and university level. Nicholas Orme (1976: 22) finds in his study *Education in the West of England 1066-1548* that in the Southwest of England, the grammar school curriculum included the *Ars Minor* of Donatus, the *Doctrinale*, and the *Graecismus*. In *A History of the University of Cambridge: The University to 1546*, Damian Leader (1988) establishes that grammar studies also formed the foundation of the university-level curriculum for most students. At Cambridge, grammar studies focused on theories of meaning and signification (speculative grammar), but not without attention to syntax and word usage. The *Doctrinale* included both types of grammatical study and was "a standard text for schoolboys and young university

⁸⁸ While it would be illuminating to consult the vernacular treatises of rhetorical figures of Blakeney and Pencaer in order to see if word-formation in English is addressed, they are currently unavailable in accessible editions. According to Murphy's footnotes, they are in MSS in the British Museum: Ms. Royal 12 B XVII (Blakeney) and Ms. Harley 941 (Pencaer).

students from the thirteenth century” (114). By the sixteenth century, grammar studies shifted even further away from modal/speculative studies, showing a “new emphasis on the teaching of style . . . [which was] [m]ore concerned with classical elegance and Ciceronian word selection” than a “grammar that championed linguistic analysis” (301). From these accounts of grammar school and university curricula, it is clear that a number of texts that included rhetorical approaches to word use (including word-formation) formed a core part of academic studies at all levels in the medieval period.

But in the medieval period it is difficult to pin down how many people—and what types of people—took part in this educational system. University records were incomplete and likely underrepresented actual enrollment.⁸⁹ Leader (1988: 34-38) summarizes the numbers that can be determined at the university level:

The total number of pre-1500 members listed in A. B. Emden’s *Biographical Registers* is over 7000 for Cambridge and about 15,000 for Oxford. . . . In spite of this often scanty documentation, some general conclusions can be drawn about the size of medieval Cambridge on the basis of detailed computer evaluations of the known alumni. . . . In 1377 the university had perhaps between 400 and 700 members, while Oxford had about 1500. . . . The university expanded from that point on, and by the mid-fifteenth century numbered roughly 1200-1300 (Oxford then had about 1700) and continued to grow into the sixteenth century, closing the gap with Oxford. The important fact to note is that for most of the middle ages Cambridge probably never exceeded 600-700 members—fewer than the average modern secondary school in Britain or the United States.

In terms of the regional backgrounds of Cambridge scholars, its early members were mainly from eastern areas (Cambridgeshire, Norfolk, Suffolk, Huntingdonshire), while in the fifteenth century the number of northerners increased (37-38).⁹⁰ Oxford and

⁸⁹ Leader notes that “no complete class list for Cambridge survives before 1575” (34).

⁹⁰ Interestingly, Leader notes that “students from the south and south-east are consistently under-represented at both Oxford and Cambridge” (38).

Cambridge were both “overwhelmingly English in their recruitment,” with “only 6 per cent of its known medieval alumni from Wales, Scotland, and Ireland” at Oxford and with only one percent at Cambridge (38).

Obviously, these numbers from the university system were only a fraction of the total population of the British Isles. The grammar school system would have served even greater numbers of boys in their early teens, supporting their local communities rather than students from a variety of locales. And despite these low numbers, the potential impact of rhetoric on written language use—at least via texts circulating within the educational system—should not be underestimated. For one, it is critical to note that all education in this period fundamentally began with grammar, and thus with exposure to Latin grammatical ideas about word-formation as described earlier in this chapter.⁹¹ Moreover, Leader’s study (1988: 36) suggests that university education did not produce an entirely closed network of scholars that remained within educational institutions:

In medieval Oxford and Cambridge ‘very possibly more than half’ of the scholars never took a degree. These included those who came only for basic training in grammar and logic before pursuing common law (like More), those who left to become grammar school teachers (without degrees), and those whose financing failed. Even of those promising and well-prepared men who came up from Winchester College to New College, Oxford, one in seven left before completing two years, and of the remainder the same proportion left before taking the BA.

In other words, possibly more than half of students had loose network ties with universities, taking up studies of grammar before going back to their home communities or moving on to others. This system would potentially allow for the diffusion of both

⁹¹ Technically speaking, education may have begun for many students at “song schools” at the age of seven or eight, where the alphabet and plainsong were learned first and basic grammar soon thereafter. Cf. Leader p. 36, and Orme pp. 1-34 for a fuller discussion of medieval education.

Latin grammatical ideas and Latinate lexical items into the writing (and possibly speaking) of individuals who dispersed into different parts of England. It must be remembered that present-day knowledge of the English language from this period is entirely dependent on extant vernacular texts that were composed, compiled, and written by individuals who likely experienced exposure to Latin grammatical studies in some form or another. In many cases vernacular texts were produced by learned individuals: though the levels of learnedness obviously varied widely, the one commonality of “learning” was grammar. An important consequence here is that many Middle English developments involving borrowed Latinate morphology likely happened within this loose educational/textual network before diffusing into less learned registers.⁹²

Camargo (1999) suggests that there was an even stronger transmission of rhetorical ideas underway in medieval England, particularly around Oxford in 1400. In his work on the *Tria Sunt*, a prose treatise on the arts of poetry and prose that incorporates Geoffrey, the *ad Herennium*, and other rhetorics, he discovers that rhetorical interest was indeed underway before the fifteenth century in England. He identifies a specific network within which rhetorical ideas were diffused: “my research indicates that the enthusiasm for the *Tria sunt* was part of a growing interest in rhetoric that first becomes evident around the mid-fourteenth century among grammar teachers connected to the University of Oxford and that much of the impetus behind this interest came from the religious orders, in particular the Benedictines” (953). The Benedictine monks likely adopted rhetorical texts and practices from their training at Oxford and carried them home to train younger monks who would later attend university. While his discovery

⁹² As this dissertation and Fleischman (1977) have suggested, *-age* may be a large exception here since it seems to have emerged out of economic discourse in mercantile registers.

may explain the style of Benedictine writers such as Lydgate, Camargo also speculates that the Benedictine motivation for rhetorical training may have been due to a desire to shore up their defenses against potential heresies: Benedictine monks may have “need[ed] to train effective propagandists for the battle against Wycliffe’s heresy at Oxford” (954). Camargo’s research establishes at least one explicitly religious network in late medieval England that was motivated to use Latinate rhetoric for stylistic purposes and perhaps to advance its ideologies.⁹³ Similarly, the corpus-based study later in this chapter will show that the Wycliffites were using word-formative rhetorical figures in the vernacular for their own varied stylistic and ideological reasons.

The research in this section demonstrates that despite the gap in English vernacular rhetorics in the medieval period, interest in Latin rhetorical traditions was certainly alive and active. Even so, rhetorical interest was perhaps most influential via texts used in the grammar curricula for students in grammar schools, universities, and monasteries. As shown in previous sections in this chapter, these texts included material on word-formation processes in composition, either in Geoffrey’s discussion of conversion or in lists of rhetorical *colores* or figures. Latin lexical items and rhetorical ideas may have been disseminated through various networks in England. Three possible networks included the loose university ties of students of a majority of students at Oxford and Cambridge, the wider experiences with grammar among school boys in various regions of England, and the network between Oxford and Benedictine monasteries. It is indeed possible that Latin rhetorical traditions did impact word-formation in English via

⁹³ There thus may have been observable effects on the lexicon and derivational morphology of the English used by Benedictines, but of course most of their texts were in Latin. Still, this network is important in that it further spread rhetorical and grammatical learning beyond the walls of the university into different communities in England.

these or other networks. Indeed, in a co-written article on the status of scholarship on medieval rhetoric, both Murphy and Camargo (1990: 57) note the importance of understanding the potential impact of medieval education on writing practices: “Once the educational history of the middle ages is well charted, with or without direct studies of the place of rhetoric, it will be easier to grasp the pervasive influence that the educational backgrounds of medieval writers must surely have had on their ways of thinking, their modes of composition, and even their choices of word patterns.”

4.5 English Rhetorical Theory and Word-formation

Many medieval theories of rhetoric, including those innovated and those adopted from classical traditions, appeal to the use of word-formation in discourse. Some texts emphasize the use of polyptotons, homoeoptotons, and homoeoteleutons for decorative purposes. Some stress the variety gained by changing the morphological shape of words. Still others underscore the cohesive effects of these rhetorical figures, as well as their ability to extend, generate, and convey ideas in writing. But all of this rhetoric about rhetoric was written in Latin and based on Latin. Indeed, each explanation of the rhetorical figures, as well as the theory of conversions, depended upon the notion of declinability and (in the case of polyptoton and homoeoptoton) case endings. So how did English rhetoricians approach the rhetorical uses of word-formation? This question is particularly interesting in the history of the English language, since during the medieval period, Middle English increasingly lost the rich inflectional system formerly available in Old English. The loss of most case endings and many verb suffixes would have impacted

rhetorical thinking since rhetoric typically relies on grammatically possible constructions at a particular stage of the language.

In the rest of this chapter I argue that the promotion of rhetorical figures based on word-formation—polyptoton, homoeoptoton, and homoteleuton, in particular—encouraged the use of borrowed derivational morphology in English texts. Moreover, because these figures were all based on the variation or constancy of case endings on words, and because in the late medieval period English had lost the vast majority of its case markers, English writers were compelled to turn to derivational morphology as an outlet for morphological word play. In the following section, a corpus study provides evidence that English writers in the fourteenth and fifteenth centuries relied upon borrowed derivational lexemes to create homoeoptotons and polyptotons. In the present section, I focus on the adaptations proposed by sixteenth century rhetoricians writing in English. Their works are significant in that they not only illustrate how Latin rhetorical models should be applied to English writing, but also provide insights into the rhetoricians' perceptions of the morphological structure of certain borrowings.

I do not claim that Latin rhetorical traditions exerted a widespread influence on all usage of derivational morphology in English. But because borrowed derivational morphemes occur far less frequently than inflectional morphemes, it is clear that rhetoric had the potential to impact the usage of these “new” forms in medieval writing—that is, to guide English writers in the potential uses of borrowings (and the suffixes of these borrowings) for specific rhetorical purposes.

Vernacular rhetorics in English do not appear until the sixteenth century. Three of the major works in this era are Thomas Wilson's *The Arte of Rhetorique* (1560), Henry

Peacham's *The Garden of Eloquence* (1577; 1593), and George Puttenham's *The Arte of English Poesie* (1589).⁹⁴ One of the earliest rhetorics, Wilson's text is "the first English language version of Ciceronian rhetoric" (Murphy 2001b: 115). He borrows and anglicizes the language of the *ad Herennium*, calling homoeoteleuton "similiter desinens" or, in more prolix English, "Then the sentences are said to end like, when those wordes doe ende in like sillables which do lacke cases."⁹⁵ Homoeoptoton, or "similiter candens," is rendered as "Sentences also are said to fall like when diuers wordes in one sentence ende in like cases, and that in rime."

Because these definitions are put together in the same section and immediately followed by examples from the English vernacular, the entire passage is worth considering:

Then the sentences are said to end like, when those wordes doe ende in like sillables which do lacke cases. Thou liues wickedly, thou speakest naughtely. The rebels of Northfolke (quoth a most worthie man that made an inuectiue against them) through slauerie, shewe nobilitie: in deede miserably, in fashion cruelly, in cause deuillishly. Sentences also are said to fall like when diuers wordes in one sentence ende in like cases, and that in rime. By greate trauaile is gotten much auaile, by earnest affection men learne discretion. (underlining mine)

While it is clear that Wilson has turned to both native and borrowed derivational morphology to create these rhetorical figures in English, his views on the morphological status of these forms remains somewhat ambiguous. Here Wilson has maintained the distinction between homoeoteleuton and homoeoptoton primarily on the basis of case, though he adds the detail that the latter also "ende[s] . . . in rime." As the examples show, a useful homoeoteleutonic form seems to be *-ly*, which is clearly not perceived as a

⁹⁴ There were certainly other vernacular rhetorics in the period, such as Richard Sherry's *Treatise on Schemes and Tropes*. But I did not have ample time to consult all of them in this case-study.

⁹⁵ All citations of Wilson taken from a 1560 edition online, <<http://darkwing.uoregon.edu/~rbear/arte/arte4.htm>>, accessed on January 8, 2008.

case ending. There may be no morphological recognition of the potential suffixal endings of *slauerie* and *nobilitie*, if these were chosen for the repetition of the final sound *ie* rather than any formal similarity between *-erie* and *-itie*.⁹⁶ The ending *-tion* is, however, highlighted for its formal similarity in the words *affection* and *discretion*. And yet, it is difficult to determine its morphological status because of an ambiguity in Wilson's definition of homoeoptoton. When he writes that this figure ends "in like cases, and that in rime," does he mean that homoeoptotons can end in either like cases or rhyme? Or is it that they end in both like cases and rhyme? In the former interpretation, *trauaile/availe* might be an example of similar case endings (perhaps the final *-e* as an ablative and nominative marker?) while *affection/discretion* is a rhyme, or vice versa. Alternatively, Wilson might contend that *-tion* is both a case ending and a rhyme. If so, which morphological cases(s) might *-tion* represent? This ambiguity perhaps reflects the lack of grammatical distinctions between derivational and inflectional morphology at the time and/or the lack of fit between Latin case-based models and English nominal morphology.⁹⁷

It should be noted that Wilson provides only description, definition, and example of rhetorically based word-formation; he does not offer prescriptive advice. In stark contrast, Puttenham's *The Arte of English Poesie* conveys both definitions and claims about the effective and ineffective uses of these rhetorical figures in English—mostly for

⁹⁶ Alternatively, Wilson may have parsed these words with the ending *-ie* as a potential suffix.

⁹⁷ Curiously, polyptoton is left out of this discussion entirely, though Wilson acknowledges his intentional omission of some rhetorical figures. He writes, "There are diuers other colours of Rhetorique, to commende and set forth a sentence, by change of wordes and much varietie of speech, but I had rather offende in speaking to little, then deserue rebuke in saying to much." Polyptoton certainly qualifies as a "change of wordes" that yields a "varietie of speech." Perhaps because it was difficult for him to adapt the notion of "case change" to the grammar of sixteenth century English, Wilson may have wanted to avoid a lengthy or unclear explanation of the figure.

the sake of verse practices, but also for prose. Puttenham collapses the classical and medieval concepts of homoeoptoton and homoeoteleuton into one category, labeled *Omoiooteleton* or the “like loose.” He defines it as “a manner of speech or writing in their [the Greeks’] proses, that went by clauses, finishing the words of like tune, and might be by using like cases, tenses, and other points of consonance” (184). Implicit in this definition is the sense that the classical distinctions between declinable and indeclinable words may no longer be relevant to the English of Puttenham’s day. While previous rhetorics were usually careful to separate case-based from non-case-based word-formation patterns, Puttenham huddles them all together under one umbrella. Even so, in terms of cognition, he does not see this figure as particularly important since it “affect[s] not the minde but very little” (184). *Omoioptoton* and other figures such as *asyndeton* and *polysyndeton* are represented together as “the auricular,” as devices that improve texts only by making them more “tunable and melodious” (184).

In one example, he seems relatively neutral about the repeated use of *-ing* in a poetic line: “Weeping creeping beseeching I wan, / The love at length of Lady Lucian.” But referring to a Scottish ditty about Englishman, he shows his distaste for uses of the rhetorical figure:

Long beards hartlesse,
 Painted hoodes witlesse,
 Gay coates gracelesse,
 Make all England thriftlesse.

Which is no perfit rime in deed . . . for a rime of good simphonie should not conclude his concords with one and the same terminant sillable, as *less, less, less, less*, but with divers and like terminants, as *les, pres, mes* . . . and your clauses in prose should neither finish with the same nor with the like terminants” (185)

From a linguistic point of view, there is no acknowledgement of suffixal endings here (only “terminants” or “terminant syllable[s]”), though it is clear that Puttenham recognizes a formal similarity in multiple words ending in *-less*. He emphasizes that these terminations are, in fact, too similar. In essence, Puttenham argues for the use of end-rhyme in verse as long as the same ending is not repeated; but he argues against its use in prose entirely. He laments that “many” do not follow this advice and “use it otherwise, neglecting the Poeticall harmonie and skill” (185). One can infer from this prescriptive lament that homoeoptoton was indeed employed in the verse and prose of Puttenham’s day.

The Arte of English Poesie does not explicitly mention *polyptoton*, and there is an overt recognition that case-based rhetorical figures are not appropriate for the English language. Under the heading for a different case-based rhetorical figure called *enallage*, Puttenham argues that some classically defined rhetorical figures cannot be rendered in English:

Your figures that work *auricularly* by exchange, were more observable to the Greekes and Latines for the bravenesse of their language, over that our is, and for the multiplicite of their Grammaticall accidents, or verball affects, as I may terme them, that is to say, their divers cases, moodes, tenses, genders, with variable terminations by reason whereof, they changed not the very word, but kept the word, and changed the shape of him onely, using one case for another, or tense, or person, or gender, or number, or moode. **We, having no such varietie of accidents, have little or no use of this figure.** (182, bold emphasis mine)

Puttenham dismisses the relevance of this case-based figure because of a perceived lack of inflectional variety—that is, the “accidents” of case, tense, person, gender, number, mood—in the English language. And yet, elsewhere he introduces and praises a polyptotonic device, *traductio*, in which “ye turne and tranlace a word into many sundry

shapes as the Tailor doth his garment, and after that sort do play with him in your dittie”

(213). For Puttenham, this figure relies not on case-endings but on a mixture of

inflectional and derivational variations on English bases. He provides two examples:

Who lives in love his life is full of feares,
To lose his love, livelode or libertie
But lively sprites that young and recklesse be,
Thinke that there is no living like to theirs.

Thou weenest thy wit nought worth if other weete it not
As wel as thou thy selfe, but o thing well I wot,
Who so in earnest weenes, he doth in mine advise,
Shew himselfe witlesse, or more wittie than wise.

(213)

Puttenham explains the figure with reference to these examples, stating “Here ye see how in the former rime this word life is tranlaced into live, living, livelode: and in the latter rime this word wit is translated into weete, weene, wotte, witlesse, witty, and wise: which come all from one originall” (213-14).

Several observations can be made here. First, all word-formation patterns in these examples are native in origin. This is likely the case because the two stems, *life* and *wit*, are of native origin, and few hybrid forms of these lexemes were available to Puttenham. *Livable*, for example, is a theoretically possible word in the period, but it is not attested in the *OED* until the seventeenth century. For whatever reason, Puttenham does not provide any examples of polyptotons or homoeoptotons based on borrowed derivational morphology. Furthermore, as an alternative to Latin and case-based polyptoton, Puttenham’s figure combines derivational change (*wit* to *witless*), inflectional change (*wit* to *weenes* and *weenest*), and conversion/functional shift (*wit* to *wot*). It resembles Geoffrey’s theory of conversions in practice, but also perhaps in spirit, since he praises

the artistic craft of generating and shaping linguistic material like a tailor with a garment. Lastly, in stating that all these formations “come all from one originall,” Puttenham suggests a morphological theory similar to Mulcaster’s theory of primitives and their derivations. In this schema, there is an original or primary lexeme (such as *wit* or *life*) from which can be derived (or “tranlaced”) inflectional, derivational, and converted forms.⁹⁸

Even though Puttenham focuses on native word-formation processes in his discussion of rhetorical figures, in a different chapter entitled “Of Language” he reveals some interesting metalinguistic data on derivational endings on borrowings into English. This section is metadiscursive, even metarhetorical, in that Puttenham examines and argues for the use of certain lexical items within his own work. In describing indispensable borrowings for his own writing, he provides several lists that include derivations immediately following their bases: *Method, methodicall; Numerous, numerositee; penetrate, penetrable* (159). These juxtapositions strongly suggest his recognition of their lexical relationships, and perhaps the detachability of *-ical*, *-itee*, and *-able*. He also calls attention to a sublist of *-tion* derivatives—*declination, delineation, and dimention*—noting that these are “scholasticall termes in deed . . . and yet very proper” (159-60). It is possible he views *-tion* formations, or at least a subset of those formations, as indicative of learned discourse.

In the epigraph from a much less prescriptive work, *The Garden of Eloquence*, Peacham notes that the book contains “the Figures of Grammar and Rhetoric, from whence maye bee gathered all manner of Flowers, Coulers, Ornaments, Exornations,

⁹⁸ It is an interesting question if earlier grammarians of English typically saw primarily nouns as prototypical lexemes. Mulcaster uses *frind* as the primitive that generates all other derivatives, and Puttenham asserts that *wit* and *life* are the originals (rather than, say, their verbal infinitival equivalents).

Formes and Fashions of speech, very profitable for all those that be studious of Eloquence, and that made most Eloquent Poets and Orators, and also helpeth much for the better understanding of the holy Scriptures.” Much like Bede’s *De Schematibus et Tropis*, this book serves as a compendium of rhetorical figures for students and writers in England, though Peacham draws upon Biblical examples in the vernacular rather than Latin. And like Puttenham, Peacham illustrates the need to adapt Latin rhetorical traditions to the grammar of English.

In the 1577 edition of *Garden*, *polyptoton* does not appear as a name in the catalogue of figures. However, Peacham does list a close cousin, *paregmenon*, which is defined as follows: “when of the word going before, the word following is deryved.”⁹⁹ Note that Peacham overtly acknowledges derivational processes in English with the word “derived.” And his examples mostly involve English derivational processes:

I live a lyfe with carefull woe
it was a mervaile most merveyulous, and a wonder most wonderfull.
I will destroye the wisdom of the wyse.
For they have stumbled at the stumbling stone,
let him that exhorteth, geve attendaunce to his exhortation.

Two examples (*stumbled/stumbling*, *exhorteth/exhortation*) involve inflection. The others include phonetically conditioned conversion (*live/lyfe*), native derivational morphology (*wisdom/wyse*, *wonder/wonderfull*), and borrowed derivations (*mervaile/merveyulous*, *exhorteth/exhortation*). Here polyptotonic rhetoric is no longer described as an exclusively inflectional, case-based phenomenon; it is presented as a primarily derivational one that allows for both derivational and inflectional variation.

⁹⁹ All citations that appear without page numbers in this section are taken from the Scolar Press Facsimile of the 1577 edition of *The Garden of Eloquence*. There are no section or chapter enumerations.

Similarly, homoeoteleuton is presented as a derivational and inflectional figure, though it is restricted to two parts of speech: “when divers clauses doe ende alike by Verbes, or adverbis.” Examples predominantly involve *-ly* (“dispose evidently, fygure diversely, remember perfectly, etc.”), though there are a few examples of past participle *-ed*.

Homoeoptoton is, however, defined in terms of inflection, “when divers clauses doe ende alike by cases.” But consider the examples provided by Peacham:

he was to good men profytable: to his ennimy terrible: in vertues most
commendable, obtayning a name for ever durable
our desires are full of disquietnesse, and our society, is clogged with wearinesse
Be faythfull to thy neighbour in his pouerty, that thou mayest reioice with him in
his prosperity
riches be the nurses of sinne and iniquity, pleasure is the daughter of dishonesty,
and the guyde that leadeth to calamity: honour is the mother of worldly
pompe and vanity (emphasis mine)

Every underlined example above involves derivational morphology: borrowed forms *-able* and *-ity* predominate, while native *-ness* also makes an appearance. How are these examples of case? A later edition of the *Garden* (1593), in which someone has revised this section, seems to correct this grammatical curiosity. In this new version, homoeoptoton is described as “of the Latines” and “is a figure which endeth diverse clauses with like cases,” but the author adds that “in respect of the English tongue which is not varied by cases, we may call it setting of diverse nownes in one sentence which ende alike with the same letter or same syllable” (53). This definition is then followed by a set of examples similar to those in the earlier edition. The previous claim about the morphological status of these forms has been erased, while the grammatical differences between English and Latin have been emphasized. Despite these adjustments, both editions illustrate the fact that this rhetorical device cannot be achieved in English

without recourse to a different set of endings. As the examples make clear in both versions of the text, derivational morphology was the most expedient domain to turn to.

Overall, sixteenth-century vernacular English rhetorics show the inheritance, adaptation, and rejection of different classical and medieval approaches to word-formation. Puttenham continues in the prescriptive tradition of the *ad Herennium*, while Wilson and Peacham rely only on description and example. In their definitions and use of examples of homoeoptoton and homoeoteleuton, all three rhetoricians show an increasing move away from endings that merely sound alike and towards those that were likely morphemes. Peacham's examples are almost entirely based on words with native or borrowed suffixes. And all three authors make it clear that case-based definitions of the figures of word-formation were not serviceable for the grammar of English. The end result is a set of new rhetorical figures based increasingly on derivational morphology in English—both native and foreign.

4.6 A Corpus-Based Approach to the Rhetorical Uses of Borrowed Derivational Morphology in late Middle English

4.6.1 Rhetorical Figures in Middle English

Despite the dearth of vernacular metalinguistic commentary on word-formation before the sixteenth century in England, corpus-based studies can verify whether or not rhetorical forms were being used in different texts in Middle English. This section will provide evidence that writers in the fourteenth and fifteenth century were, in fact, employing homoeoptotons and polyptotons in English. With the decay of the inflectional system in English—particularly in nouns, which lost most of the variety of case endings

previously available in Old English—these writers turned to derivational morphology to incorporate patterned uses of words with either identical endings or identical bases. Moreover, this rhetorical wordplay encouraged the use of borrowings ending in potential suffixes, including *-able*, *-age*, *-ity*, and *-cion*. This fact is important, as it highlights some motivations for the use of these borrowed lexical items in English texts. The analysis of the evidence in this section will highlight some of the differing rhetorical purposes for the use of these lexical items.

In addition, the presence of these rhetorical figures in English provides some critical insight into the morphological status of these potential affixes in the medieval period. To take a concrete example, consider the following from the prologue to the Wycliffite Bible:

(4.1) the wexinge in riȝtwise lif of actif trewe men, the which passen to heuene, the perfec|tioun of holi men, the meditacioun of hem that ben contemplatif, and the greet ioie of contemplacioun, the hiȝest that may be in man leuyng in bodi and felynge.

In this passage, the writer combines both a homoeoptoton and a polyptoton in one clause that describes the appeal of “actif trewe men.” Specifically, *perfection*, *meditation*, and *contemplation* line up in a homoeoptotonic pattern, with repetition of *-cion*, while *contemplatif* forms a polyptoton with *contemplation*. The writer first maintains parallel structure in the two juxtaposed phrases “the perfec|tioun of holi men” and “the meditacioun of hem,” the nouns ending in *-cion* appearing as appositives before the preposition *of* followed by “holi men” and its pronominal substitution. In the next phrase he shifts placement of the final *-cion* lexeme, *contemplation*, to the object of the preposition *of* in order to parallel the preceding phase-final position of its companion

adjective, *contemplatif*. The writer presents an intricately woven pattern in which *contemplacioun* is at the intersection of both a polyptoton and homoeoptoton—in other words, its base and its ending are presented as lexically connected to words with similar bases and endings.

As the preceding example demonstrates, the writer was likely aware of the lexical connectivity, if not the morphological complexity, of nouns ending in *-cioun*. The use of homoeoptoton—a specific rhetorical manifestation of suffixal paradigms—suggests a recognition by the writer that words ending in *-cioun* have a similar form and function. In this case, *perfectioun*, *meditacioun*, and *contemplacioun* are all nominalizations of Christian actions that define the life and afterlife of righteous “actif” men. While the writer does not explicitly state that *-cioun* nominalizes these actions, the proximity and similar use of these lexical items heightens the potential that readers and listeners may internalize this analogical pattern. Furthermore, the polyptoton with *contemplatif* and *contemplacioun* suggests the morphological complexity and decomposability of these words: *contemplat-* is a stem, while *-if* and *-cioun* are detachable endings. An important point here is that the polyptoton not only indicates the writer’s awareness of morphological composition, but by putting *contemplatif* and *contemplacioun* so close together, it also potentially impacts the reader’s ability to analyze the suffix as a detachable unit of language.

This specific example points to the larger argument of this section: polyptotons and homoeoptotons, while not necessarily indicative of the actual productivity of suffixal forms in the medieval period, are a significant element in characterizing the *perceived* productivity and viability of endings that were potential suffixes in English. Focusing on

a quantitative and qualitative account of rhetorical figures that incorporate borrowed derivational endings, this section posits that all examples of polyptotons and homoeoptotons reflect and impact the perceived productivity of affixes. In particular, this section catalogues key examples of figures involving *-able*, *-age*, *-ity*, *-cion*, and *-ness* and considers the possible rhetorical and stylistic motivations for using these figures in late medieval texts. The goal is to demonstrate that these patterns did occur in late medieval English writing. These data, moreover, provide inferential support for establishing that these forms were emergently productive suffixes in late ME, despite the absence of vernacular metalinguistic material and the infrequency of new coinages and hybrid forms in the period.

4.6.2 Methodological Considerations

The data in this section were drawn from the Compendium of Middle English (CME). The University of Michigan interface was used, specifically the proximity search. Based on contemporary definitions and descriptions of the rhetorical figures in the medieval period, the majority of which imply that these figures occur within the same clause or in juxtaposed clauses, the parameter of the proximity searches was set to capture co-occurrences within 40 characters. This setting rules out other types of lexical and suffixal paradigms—i.e., those that span paragraphs or larger sections of discourse—but it can be reasonably expected to return most possible polyptotons and homoeoptotons. Only the most common orthographic representations of each suffix were searched: <-able, -ite, -nesse, -cioun, -age>. While this decision certainly excludes other

possible data, the goal of this study is to discuss identifiable and representative examples, rather than to provide an exhaustive catalogue of all rhetorical figures.

To limit the data to manageable but representative numbers, the following texts were chosen for searches for homoeoptotons: *Three Kings of Cologne*; *Thirde Order of Seynt Franceys for the brethren and susters of the Order of Penitentis*; *The Stonor letters and papers, 1290-1483*; *Mandeville's travels : the Egerton and Cotton versions*; *An apology for Lollard doctrines, attributed to Wicliffe*; *An English chronicle of the reigns of Richard II, Henry IV, Henry V, and Henry VI written before the year 1471*; *The English works of Wyclif*; *The governance of England: otherwise called The difference between an absolute and a limited monarchy*; *Select English works of John Wyclif* (Wycliffite Gospels); and the Wycliffite Bible. These are all prose works; poetry was excluded from the study since end-rhyme is usually indistinguishable from homoeoptotonic patterns.¹⁰⁰ There is a variety of texts represented, including historical and political writing, literature, and letters, though religious materials from the Wycliffites predominate.

A range of prose works was chosen in order to explore how widespread the use of homoeoptotons and polyptotons was in the ME period. Moreover, texts such as the Wycliffite Bible are a particular focus in this chapter because they, compared to the records of the Grocers and Goldsmiths, had a much wider and much more public readership. In fact, the target audience of the Bible (and perhaps of other prose works such as *Mandeville's Travels*) was likely monolinguals with only a passing familiarity with French and Latin. This audience may have been more or less familiar with particular derivatives; *marriage* was likely to have been less of a hard word than *contemplacion*. But I argue that the audience's exposure to homoeoptotons and

¹⁰⁰ End-rhyme and derivational suffixation will be discussed at length in the following chapter.

polyptotons that use borrowed derivations likely increased the analyzability of borrowed suffixes among the audience reading or hearing these texts.

Data extraction for polyptotons proved much more difficult, as it required a needle-in-a-haystack approach. There are no a priori clues to suggest which types of lexemes will co-occur with lexemes sharing the same base. Plus, initial trials proved that polyptotons were relatively infrequent. For these reasons, the entire CME was searched, and over thirty stems/bases were considered. Bases were selected based on my intuitions on the most likely and frequent lexemes as suggested by previous corpus searches and lists of words in the suffix entries of the Middle English Dictionary. Because it is virtually impossible to count all possible polyptotons, there was no aggregate statistical accounting attempted.

For the purposes of this study, it should be noted that homoeteleutons and homoeoptotons have been grouped under the umbrella term *homoeoptoton*. Since the Latin distinction relied primarily on case, the difference between terms collapses when applied to medieval vernacular English. Plus, since the Latin and English rhetoricians identified *homoeoptoton* as a nominal phenomenon—and most of these corpus searches concern nouns—*homoeoptoton* is the better default.

It was not always clear whether or not a co-occurrence should count as a proper homoeoptoton. Consider the following two examples:

(4.2) it mey then be advised be the counsell, how such a person mey be rewarded with office, money, mariage, ffraunches, priuelage, or such oþer thynges
(*Governaunce*)

(4.3) This is the herytage of the lynage of the sones of Zabulon (Bible)

In example (4.2), it is possible though unlikely that there is a homoeoptoton with *mariage* and *privelage*. The sequencing of words does not suggest any obvious patterning, nor is there an immediate juxtaposition of lexemes. Example (4.3) is also debatable, though in this study it was counted as a homoeoptoton because both lexical items exist within the same noun phrase (“the herytage of the lynage”) and seem intentionally homophonous, or could reasonably be seen or heard to be homophonous.¹⁰¹

4.6.3 Homoeoptotons: A Quantitative Assessment

It is valuable to know how generally common and frequent homoeoptotons were in Middle English. The prescriptions in the *ad Herennium* and Puttenham suggest that writers were to employ the figure infrequently in order to avoid excessive stylistic decoration. Indeed, this study finds that homoeoptotons involving derivational endings do occur in Middle English texts, with small but significant frequency. The following chart provides a count of homoeoptotons with different affixes in the largest text in the CME, the Wycliffite Bible¹⁰²:

	Total Number of Homoeoptotons	Total Number of Different Lexemes Used	Lexical Breadth
<i>-able</i>	8	10	1.25
<i>-age</i>	8	5	0.625
<i>-cioun</i>	61	54	0.885
<i>-ite</i>	9	9	1.00
<i>-ness</i>	154	81	0.526

Table 4.2: Count of homoeoptotons and lexical variety in Wycliffite Bible

¹⁰¹ Fundamentally, the decision whether to count an item as a rhetorical figure was based primarily on researcher intuitions about language that could be reasonably construed by a reader as rhetorically motivated and intentionally constructed by the writer. My estimates of polpytotons and homoeoptotons are thus conservative.

¹⁰² There were not enough data to justify a presentation of frequency counts and lexical diversity in other texts from the CME. For example, there was only one instance of an *-age* homoeoptoton in each manuscript of *Mandeville’s Travels*, and only one instance of a *-cion* homoeoptoton in the *Apology for Lollard Doctrines*.

The first column indicates the total number of homoeoptotons found in the entire Middle English text of the Bible, including the prologues, comments, and the verse translations. The second column provides the total number of different lexemes, while the third provides a measure of “lexical breadth”—the ratio of total lexemes to total homoeoptotons employing those lexemes. In theory, this number could range from zero to infinity, if one could imagine a homoeoptoton with an infinite string of unique lexemes. A more realistic ceiling is two or three, since most homoeoptotons contain two or three different lexemes. This study assumes that a higher frequency of homoeoptotons (column 1) and a higher lexical breadth score (column 3) correlate with a higher perceived productivity of the suffixes, though the latter score likely becomes more significantly correlated with perceived productivity as the values in column 1 increase. In other words, an increase either in the absolute frequency of homoeoptotons or in the lexical diversity of derived forms increases the likelihood that the ending could be perceived as a potentially productive affix.

For example, if the values for *-age* and *-ness* above are compared for the Wycliffite Bible, *-ness* could arguably be seen as more productive than *-age* since its absolute frequency is much higher, despite the similar values in lexical breadth. In fact, *-ness* far outscores the other endings in terms of absolute frequency of homoeoptotons; this fact is unsurprising since it was an actually productive suffix in the period. What is more surprising is the relatively low frequency of *-able* homoeoptotons. This affix is one of the most productive and frequently occurring suffixes in borrowings in Middle English (Dalton-Puffer 1996: 183-184), and its high lexical breadth may reflect this.

Also noteworthy is the relatively high scores of *-cioun*, which has a far higher frequency of homoeoptotons than its borrowed peers, in addition to a high lexical breadth. The variety of forms is likely a result of the specific register—Biblical text and commentary—and the motivations of the Wycliffites themselves. One of their primary goals was to translate and disseminate the Bible in vernacular English, but not necessarily to anglicize or paraphrase (with native vocabulary) important religious terms from Latin. One thus observes a wide set of religious (and specifically Christian) borrowings ending in *-cioun*, such as *transmygracioun*, *dampnacioun*, *mynistracioun*, *resurreccioun*, and *incarnacioun*, which received further emphasis by being placed in homoeoptotons. There may in fact be a pedagogical motivation for such use of homoeoptotons—that is, as a method of foregrounding important and less familiar concepts and words for the reader. This issue will be considered further in the following qualitative analysis of specific examples of each type of homoeoptoton.

4.6.4 A Qualitative Approach to Homoeoptotons with Borrowed Derivational Endings

In each subsection below, I provide specific examples of homoeoptotons from the CME that involve the borrowed derivational endings *-age*, *-able*, *-ite*, and *-cioun*. Various rhetorical motivations for the use of these forms are discussed, as well as the types of texts and contexts in which they appear. Ultimately, this evidence suggests that Middle English writers and readers may have recognized a formal similarity and structure in lexical items with these endings. In turn, this recognition of analogical forms may have increased the likelihood that these endings were perceived as potentially productive suffixes in the late medieval period.

-able

The majority of the homoeoptotons involving *-able* emphasize antonymic or synonymic relationships between lexemes. The following examples from the Bible highlight the similarity of meaning between pairs of *-able* lexemes:

(4.4) Hou myche more an abhominable and an vnprofitable man, that drinketh as wattris wickid|nesse?

(4.5) But God, of his grete merci, ʒeue to vs grace to lyue wel, and to seie the truthe in couenable manere, and acceptable to God and his puple

(4.6) He was swete[swete; that is, he was amy|able and fa|uorable to wickid men.]

(4.7) whanne thei ben abhominable, and vn|bileueful, and repreuable to al good werk

The use of synonymy may have several functions: emphasis and intensification in (4.4) and (4.7); maintaining parallel descriptors across phrases, as in (4.5); and clarification and elaboration of definition in (4.6). A possible effect of such synonymic sequencing is that *-able* could be seen as attachable to bases of similar meaning, such as *coven-/accept-* and *abhomin-/reprev-*, though it is equally possible the lexemes could be seen as mutually substitutable and non-decomposable words.

Likewise, antonymic examples also appear in the Bible (4.8) and in the English works of Wyclif (4.9):

(4.8) The power of erthe is in the hond of God, and al the wickidnesse of hethene men is abho|mynable; and he schal reise a profitable gouernour at a tyme on it.

(4.9) lord, siþ prelatiſ witte not where here preiere be acceptable or dampnable, whi magnyfien þei it so moche & sillen it so dere?

The homoeoptoton of *-able* lexemes in (4.8) helps the two clauses cohere while emphasizing the semantic contrast signaled in the bases of *abhomyable* (describing heathen men) and *profitable* (describing the work of God). Example (4.9) sets up an absolute binary between prayer that is *acceptable* or *dampnable*. The apparent contrast in semantics of the bases of these proximate words may increase the perception that *-able* can attach to different types of verbal stems: *abhomy-*, *profit-*, *accept-*, and *dampn-*.

Two more complex examples, which combine synonymy and antonymy, are also noteworthy:

(4.10) poyntis of here reule ꝛif it be resonable & profitable, & ꝛif it be vnresonable & vnprofitable late no man bynde hym (Wyclif)

(4.11) netheles thilke chaungeablete, is onely in creaturis, for God bi vnchaungeable wille, makith chaungeable thingis. (Bible)

In both examples, the homoeoptotonic play with *-able* helps different clauses cohere around particular concepts—reasonability and profitability in (4.10) and changeability in (4.11). But each example also includes a polyptoton: the prefix *un-* is attached to lexemes in both examples, and *-ite* is attached to *chaungeable* in *chaungeablete* in (4.11). While *-able* is seen attached to only one base (*chaunge*) in (4.11), the full decomposability of *vnresonable* & *vnprofitable* is suggested in (4.10). The initial homoeoptoton between *resonable* and *profitable* may indicate composed forms [reson[able]] and [profit[able]], while the polyptoton adds *un-* to each structure, yielding [un[reson[able]]] and [un[profit[able]]].

-age

The few examples of *-age* homoeoptotons mostly rely on the pairing of two lexical items, and these pairs reflect the thematic interests of each type of text employing the figures. Mandeville pairs *passage* with *voyage* once, though the pairing manifests differently in the Egerton and Cotton manuscripts:

(4.12) straunge cuntreez bathe by water and by land, and semely ware to fall to men þat wald make þat vayage, þerfore few men assays þat passage (Egerton)

(4.13) And for als moche as it is longe tyme passed þat þer was no generall passage no vyage ouer the see (Cotton)

These pairings appear to present a type of synonymy or equivalence between these two *-age* items. Fittingly for *Mandeville's Travels*, these *-age* forms foreground the concepts of travel and journey.¹⁰³

In the *goverance of England*—a fifteenth century text interested in the types and purposes of English monarchy—Fortescue employs *-age* forms in homoeoptotons that signify two types of taxes or tolls paid:

(4.14) off is yerely borne, bi cause it is not estimable, and the kynge hath therefore þe subsidie off pondage and tonnage.

(4.15) be that reason pondage and tonnage mey not be rekenned as parcell off the revenues wich the kynge hath ffor the mayntenance . . .

While not exact synonyms, *pondage* and *tonnage* are part of a lexical set of *-age* forms in Middle English that denote fees or tolls, as seen in the records of the Grocers discussed in

¹⁰³ It should be noted that *voyage*, which came into English very late in the thirteenth century according to the *MED*, does not have an available stem in Middle English. For this reason, the perceived decomposability of *voyage* may have been less likely.

Chapter 2. It is possible that *pondage and tonnage* is itself an idiom in the period. Even though the *MED* entry for *tonnage* lists this phrase as an example, a corpus proximity search of the entire CME returns no other pairings of the two words. The lack of examples may be due to the scarcity of economic records in the CME; otherwise, it suggests that this was not a common idiom.

In Biblical examples, *lynage* appears in all but one homoeoptoton. The most common pairing is *lynage* and *heritage*:

(4.16) another lynage taken to wyues, shulen folwe her possessioun, and translatid to another lynage, of oure herytage shal be lassid

(4.17) sone of Jesse, of the lynage of Juda, eritage to hym, and to the sed of hym

(4.18) be thou conuertid, for thi ser|uauntis, the lynages of thin eritage.

This juxtaposition may be the result of simple synonymic (redundant) pairing, since *heritage* and *lynage* are close in meaning. This pairing is unsurprising, since the Bible is thematically concerned with presenting and delineating ancestry. And semantic doublings are not unusual in medieval prose. But how can one be certain this is a homoeoptotonic pairing rather than one based on rhyme? There is really no clear-cut way to distinguish between rhyme and rhetoric as motivations in these cases, because homoeoptotons always rhyme. However, it is reasonable to say that all such examples are potential homoeoptotons as long as at least one of the lexemes is analyzable in English. Because *lyne* occurs in the Bible, it is possible for speakers to analyze the suffix in this construction and analogize it to *heritage*, decomposing it as a suffix *-age* plus a stem *herit-* (possibly familiar in ME *inherit*).¹⁰⁴

¹⁰⁴ Obviously, it is easier to make a stronger case for a homoeoptoton when all lexemes are significantly analyzable (e.g., a pairing such as *usage* and *servage*). But it is also arguable that even a juxtaposition of

Other homoeoptotons with *-age* are employed primarily for stylistic variation in the Apocalypse:

(4.19) and power was ȝouun to hym in to ech lynage, and puple, and langage, and folk

(4.20) and on ech folk, and lynage, and langage, and puple

Example (4.19) presents a parallel structure, ABAB, in which the first and third elements are alliterated *-age* forms and the second and fourth elements are synonyms for people.

Example (4.20) inverts this structure into a chiasmus, BAAB, in which the *-age* items form the center of the structure. While there is no direct evidence that *-age* is seen as an independent morpheme, the stylistic variation reveals the writer's recognition that there is a significant structural similarity in *lynage* and *langage*.¹⁰⁵

A search of homoeoptotons finds that there were rhetorical motivations for foregrounding different items ending in *-age*. These motivations include thematic emphasis and stylistic variation. While these rhetorical figures are relatively infrequent, they do call attention to the structural similarity of lexemes with this ending.

-ity

In this study, homoeoptotons with *-ity* rely on mostly religious lexis, particularly words that convey abstract spiritual qualities or conditions. In fact, with the exception of Wynkyn de Worde's mention of the phrase "in spyritualite & temporalite" in the *Three*

two weakly analyzable derivatives (e.g., *langage* and *heritage*) might still be homoeoptotonic, either because the writer recognizes they are derivatives of the same type or because the reader is compelled to analogize them because of their similar form.

¹⁰⁵ The recognition may be no more than phonological similarity. Even so, this is a necessary step in analogical analysis.

Kings of Cologne, all other examples come from a variety of Wycliffite texts, including the gospels, the *Apology for Lollard Doctrines*, Wyclif's English texts, and the Bible.

The *Apology* provides several examples of rhetorical figures with *-ity*, including the following:

(4.21) and to calle hem aȝen to þe lord God, fadir of alle, and in to þe vnite and prosperite of body, and cam to serue and not be seruid, and to ȝif his lif raumsum for mani

(4.22) ben correctid of oþer prouastis wiþ correccoun comyng of charite, and for þe diuersite of synnis.

(4.23) men in word, in leuing, in charite, in feiþ, in chastite; take to reding, and to exorting, and to theching, and to be stonding in hem

(4.24) large palayce, nor gedre not baggis to gidre, nor wast not þe goodis in vanite, nor in superfluite, bere him not hiȝe of þe facultees of þe kirk, nor gif not to wendingis

These examples foreground a variety of abstract religious lexemes in *-ity*, including virtues (*charity*, *chastity*) and vices (*vanite*, *superfluite*). Note, too, that several of these homoeoptotons are combined with other devices: polyptotons *serue/seruid* in (4.21) and *correctid/correccoun* in (4.22), and another homoeoptoton *reding/exorting/theching/stonding* in (4.23). It is also possible that *facultees* is seen as an extension of the *-ity* homoeoptoton in (4.24). There is little doubt that this text exhibits intentional rhetorical structuring based on the word-endings, particularly those involving borrowings. The Bible similarly presents such tight rhetorical structuring:

(4.25) sumtyme dyuynys weren ful hooly and deuout, and dispisiden outtirly the world, and lyueden as aungels in meeknesse, clennesse, souereyn chastite, and charite, and tauȝten treuly Goddis lawe in werk and word

Here two pairs of virtues—one ending in *-ness* and one in *-ity*—are set side by side for emphasis.¹⁰⁶ This juxtaposition may suggest a parallel morphological structure in these words: i.e., if *-ness* was seen as a suffix that could attach to different bases, perhaps *-ity* was as well.

There is other evidence of homoeoptotons involving the juxtaposition of *-ness* and *-ity* in the English works of Wyclif:

(4.26) þe mynystris owe to reseceyue hem benygneþly & bi charite, and haue þei so muche famularite, or homlynese, aboute hem þat þei may seie . . .

(4.27) mely gentil wommen, schulden lerne mekenesse, chastite, charite, sobirnesse & schamefastenesse

(4.28) namely in þes seuene, feiþ, hope, & charite, & mekenesse, chastite, sobirnesse, & brynnyng desir of riȝtwisnesse.

In example (4.26), *charite* is linked to *famularite*, which is immediately glossed as *homlynese*. This is direct evidence of the perception of semantic equivalence between an *-ity* word a *-ness* word in Middle English; Wyclif believes *homlynese* is an acceptable substitute for *famularite*. It is also evidence that *famularite* was not fully naturalized, since Wyclif felt the need to gloss it. In examples (4.27) and (4.28), it is debatable whether or not there are genuine homoeoptotons. However, it can be argued that there is perhaps an intentional lining up and mixing of *-ity* and *-ness* forms because of similar semantics and morphological structure. Thus, the virtues of *chastite* and *charite* are nestled in the middle of *mekenesse*, *sobirnesse*, and *schamefastenesse* in (4.27), and they are intermingled with *mekenesse*, *sobirnesse*, and *riȝtwisnesse* in (4.28). By creating such equivalences between borrowed and native forms, Wyclif further naturalizes borrowings that signify spiritual virtues. The end result for readers and listeners is that

¹⁰⁶ Note too the alliterated pairs *taughten treuly* and *werk and word*.

certain *-ity* forms seem more familiar, perhaps as familiar as semantically similar forms ending in *-ness*.¹⁰⁷

-cioun

In this study of homoeoptotons, *-cioun* exhibits the widest lexical range and highest frequency among the borrowed derivational endings examined. As mentioned above, the terms are predominantly religious Christian lexemes. But there are more general terms from legal, political, sociological, and other registers, including *proposicioun*, *conclusioun*, *condicioun*, *correccion*, *enformacioun*, *signyfycacioun*, *nacioun*, and *occasioun*.

Many of the rhetorical figures with *-cioun* in the Bible are employed for reasons already identified, including definitional synonymy (4.29), parallel synonymy (4.30), parallel antonymy (4.31), and non-synonymous parallelism (4.32):

(4.29) nether gete Ʒe perdicioun; that is, dampnacioun of helle

(4.30) If not thi relikes in to good, if Y aƷen cam not to thee in tyme of affliccioun, and in tyme of tribulacioun and of anguysh, aƷen the enemye.

(4.31) which the Lord Ʒaf to me into edifi|cacioun, and not into distruccioun

(4.32) bi so miche we ben deemed more able to Goddis visita|cioun. Joon knew bi Goddis reuelacioun . . .

In one case, multiple functions are brought together in one homoeoptoton:

(4.33) But it is seid bifore, this new generacioun is sette in remedie aƷens the old generacioun; for the firste generacioun brouƷte vs to dampnacioun, and the secunde bringith vs to saluacioun and blis; that brouƷte vs out of paradijs, this bringith vs into paradijs. (Bible)

¹⁰⁷ It should also be noted that this study found non-religious *-ity* forms in homoeteleutons, including *quality*, *quantity*, and *diversity*.

Here the word *generacioun* is repeated—connecting it lexically to the antonyms *dampnacioun* and *saluacioun*—to emphasize the generational shift brought about by the coming of Christ.

In *Three Kings of Cologne*, there is a commonly repeated sequence involving *passioun*, *resurreccioun* and *ascencioun*. Here are two instances of the six variations that appear in the text:

(4.34) and with grete ioye preched to þe bysshopys and to þe pepil þe childehode of god, his passioun, his resurreccioun and his ascencioun, and all þe werkys of crist while he was in erþe

(4.35) lyfe for saluacioun of all mankynde, scholde go and preche þe passyoun of Cryst and hys resurreccioun and hys ascencioun to þes .iiij. worschippful kyngis þat souȝt god allmyȝty in Bethleem

In (4.35), the use of *saluacioun* hints at and lexically connects to the *-cioun* pattern of the repeated phrase, which clearly lines up three of the most important events in Christian theology—Jesus’s suffering, resurrection, and ascension into heaven. There is likely a pedagogical motivation behind the repetition of this rhetorical figure. By tightly structuring the phrase around similar endings and repeating it numerous times, the writer makes it easier for a reader or listener to recall these lexemes, and to recall them in sequence. It turns what might have otherwise been “hard” borrowings into memorable, familiar, reiterable, and perhaps more sensible words as they reappear in different contexts throughout the text. It is possible this was indicative of a wider pattern in Middle English religious discourse, but this specific pattern does not show up elsewhere in the CME.

Several of the Biblical examples combine homoeoptotonic and polyptotonic patterns involving *-cioun*, such as example (4.1) discussed at the beginning of this section. Other examples from the Bible include the following:

(4.36) Forwhi if the myn|istracioun of dampnacioun is in glorie, moche more the mynisterie, `or seruynge', of riȝtwysnesse is plenteuous in glorie.

(4.37) For if the mynystracioun of dampnacioun was in glorie, myche more the mynysterie

(4.38) for the corrupcioun of affeccioun cor|rumpith the dom of resoun, and to encrees|ing of her ma|lis

Combinations of homoeoptotons and polyptotons, while extremely rare, are the most revelatory types of evidence for determining morphological structure. In (4.36) and (4.37), the polyptoton *mynistracioun/mynisterie* suggests a common stem *mynistr-*, which implies that *-acioun* and *-erie* are detachable entities. The implication of the independent status of *-acioun* is then immediately backed up by the proximate presence of another lexeme, *dampnacioun*, which too may imply a stem *dampn-* and suffix *-acioun*. Similarly in (4.38), *corrupcioun/corruptith* may prime *corrup-*, *-ith*, and *-cioun*, the last of which is also seen in *affeccioun*. The use of these rhetorical figures thus provides strong evidence that the writer recognized the suffixal status of *-cioun*. And the proximity of similar bases and similar endings increases the likelihood that readers, too, might internalize this pattern.¹⁰⁸

¹⁰⁸ Bybee might say here that the representation of *-cioun* is strengthened when put into contexts in which lexemes containing it have the same ending. Hay would argue that the frequency of the stems/bases relative to morphologically complex forms would also bear on the readers' ability to see these as composed forms. In other words, if *damn* or *corru(m)p* were as or more frequent than *damnacioun* and *corrupcioun*, then the reader would be even more likely to strengthen the mental representation of the decomposed forms (as opposed to the whole word forms). Chapter 6 will address these issues in more detail.

4.6.5 Polyptotons

In addition to the polyptons that appeared alongside homoeoptotons, a number of single polyptotons were identified in this study. Each of these examples provides further evidence that the endings of some borrowings were perceived as potentially detachable units.

In this study, the lexeme *profit* is unique in that it appears in a number of polyptotons in a wide variety of texts, particularly with the lexeme *profitable*. Consider the following examples:

(4.39) And the seid chamberleyns to endure in that office as they truly feithfully and profitable behave them, to the profite of the seid cite and comynalte of the same. (Ordinances of the English Gilds)

(4.40) Rebelle as a litille kyng, obeyshaunt as a pecok, gret speker without profit. Profitable as a bee, vnbounden as a boore, strong as a bole. (Secreta Secretorum)

(4.41) . . . but þey tretede more of discord and stryf þat was among hem self þan of þe comyn profit; and ʒif any good counsaile and profitable were i-ʒeue, anon enemyes schulde wite for al; (Polychronicon)

All three examples employ polyptotons to create cohesion between phrases and clauses. In example (4.39) from a Worcester ordinance in the later fifteenth century, *profite* is introduced in order to specify who will benefit from the profitable behavior of the chamberlains, as described in the preceding clause. Examples (4.40) and (4.41) exhibit a kind of transitional cohesion reminiscent of the word-formative play described in Geoffrey's theory of conversions. Hence, in (4.40) *profit* is converted into an adjective (*profitable*) to initiate the subsequent phrase. Likewise, in (4.41) the theme of profitability is carried forward from one clause to another via the polyptoton. While

these polyptotons might have been employed for cohesive purposes, the foregrounding of *profit/profitable* emphasizes the potential detachability of *-able*.

A more rhetorically and morphologically complex example appears in the *Apology for Lollard Doctrines*:

(4.42) for þer is not þat mai be put to mak it perfitar or compendiosar, for it is in a word of charite profitablar, for non oþer law profitib, not but in as miche as it meue to þis.

The polyptoton *profitablar/profitib* suggests *profit-* as a stem and *-ith* as a suffix, but what of *-ablar*? On its own, this sequence might be undecomposable. But since *profitablar* is also part of a homoeoptoton with *perfitar* and *compendiosar*, the suffix *-ar* is more evident, in turn making *-abl-* more evidently discrete. In another complex scenario in a different text, a polyptoton with *profitable* is combined with another polyptoton involving *-ite*:

(4.43) If for to haue religioun and religiosite set to the comoun lawe of God maad of lawe of kinde and of sacramentis is leeful, good, and profitable, whi mai not this good and profit sufficientli be performed and fillid bi oon or ij. or a fewe of suche religions had and vsid in the chirche?

(Repressor of over much blaming of the clergy)

As in the preceding examples, the detachability of *-able* is suggested by the second polyptoton. But in the first figure, it is not easy to parse *-ite*, since *-osite* attaches to the shared stem *religi-* and there are no other proximate forms ending in *-ous* or *-ite*. As examples (4.42) and (4.43) demonstrate, decomposability depends in part on all clues available in the lexical or suffixal patterns in the immediate context surrounding a lexical item.

Profit/profitable is not the only type of polyptoton involving *-able*. This study also found a fourteenth-century example based on *charitable*:

(4.44) And therfor, here is vnto you good ensaumple to be charitable, and to use the werkes of charite, as ye haue herde hefore of two ladyes and of the good Raab
(Book of the Knight of La Tour-Landry)

Since this text is a translation from French, *charite* and *charitable* were likely borrowed directly from French. But as the polyptoton above suggests, *-able* may have been seen as a detachable suffix in vernacular English writing. Indeed, the placement of borrowings in overtly rhetorical structures in the Middle English vernacular likely contributed to language users' sense of a potential productivity of a number of borrowed affixes.

Polyptotons involving other affixes similarly show potential detachability in English. In addition to the previous examples involving combined homoeoptotons and polyptotons with *-(c)ioun*, there were some instances of singular polyptotons with this affix:

(4.45) The man is cause of alle wo,
Why this world is divided so.
Division, the gospell seith,
On hous upon another leith.

(4.46) al the lond is desolat bi desolacioun

Stressing a theme on the divisions of humanity in his prologue to the *Confessio Amantis*, Gower in example (4.45) carries the newly introduced concept of a world “divided” into the following line, transforming it into the noun *Division*, which becomes the primary topic. In example (4.46) from the book of Jeremiah in the Bible, the polyptoton may seem like redundancy, but its likely rhetorical purpose is to emphasize or intensify the

emotional sense of the lexical root *desolat-*. The morphological effect, whether intentional or not, is the more evident detachability of *-cioun*.

Polyptotons with *-age* were infrequent, though several examples with *pilgrimage* appear in the CME:

(4.47) Þe þridde resoun is myȝti & stronge. þat springeþ wiþ oþir in Goddis lawe/ þat suche as parten hem bi hem silf. from comune lijf of oþir men/ schulden be algatis in þis weye. as straungers þat ben fer from home/ & pilgrimes in her pilgrimage. (*Lantern of Light*)

(4.48) wherbi thei schulden the more mynde haue of him, maden a bodili pilgrimage, euen lijk to the bodily pilgrimagis whiche of deuout and weel gouerned pilgrimes ben now woned be doon. (*The repressor of over much blaming of the clergy*)

(4.49) as if the pilgrime bere openli visibili in his hond to alle men whiche schal meete a signe bitokenyng openli that he goith into such a place in pilgrimage, which signe is an ymage of wex or of tre or of sum metal,)—wherfore a ful good and a resonable cause it is to ech pilgrime, which wolde make his pilgrimage vndir the ije. or iije. bifore weel approued entent (*The repressor of over much blaming of the clergy*)

In (4.47), the polyptoton functions as a rhetorical flourish to end a lengthy, multi-clause sentence on the idea of pilgrimage. In (4.48) and (4.49), the base *pilgrim* is varied in both derivation (with *-age*) and with different inflections (for singular and plural forms of both lexemes *pilgrim* and *pilgrimage*). This is likely a form of topic control, to maintain the reader's and/or writer's (i.e. Reginald Pecock's) focus throughout each passage on the central idea of the pilgrimage. The polyptonic play allows Pecock to repeat the concept while still varying its form. This technique may employ *-age* as one of several suffixes to attach to the base *pilgrim*. If not, Pecock and the reader are at least likely to realize the lexical connection between *pilgrim* and *pilgrimage* in these examples.

This study located only two examples of polyptotons with *-ite*. One of them is discussed above in example (4.11), where the proximity of *chaungeable* and *chaungeablete* implies *-ity* was a detachable unit. In the Polychronicon, a similar situation is found with a different pair of lexemes:

(4.50) In the thrydde euery parcialle province is discussede, till hit be comen to Breteyne the last prouince, as vn to a specialite moste specialle for whom his present storye was made.

This polyptoton functions similarly to (4.46) and (4.47), where the rhetorical intent is not cohesion but rather emphasis and flourish. Again, the tight proximity of the lexemes *specialite* and *specialle* make the decomposability of *specialite* more transparent. It is evident that the ending *-ite* is a primary differential between the nominal status of *specialite* and the adjectival function of *specialle*.¹⁰⁹

4.6.6 Discussion of Corpus Study Results and Analysis

This study finds that in the fourteenth and fifteenth centuries, English writers employed both homoeoptotons and polyptotons in a variety of texts. As predicted by the prescriptions laid out in Latin and sixteenth-century vernacular English rhetorics, these figures were used sparingly, though sometimes in tandem for greater rhetorical force. Significantly, this study discovers that Middle English writers were already adapting the case-based models of word-formation to the grammar of late medieval English. Before the vernacular rhetoricians noted the increasing shift from inflectionally based figures in Latin to derivational models in English, writers in the fourteenth and fifteenth century were creating textual patterns based around lexemes ending in the same forms and/or

¹⁰⁹ Of course, syntax is also a critical component that signifies grammatical function in this (and perhaps every) context.

lexemes sharing the same base. A key set of lexemes involved in this process were borrowed derivations, including those ending in *-able*, *-cioun*, *-ity*, and *-age*.

Furthermore, the observed use of a number of homoeoptotons and polyptotons in specifically Wycliffite texts reveals at least one late Middle English social network within which morphologically complex Latin lexemes were spread in the vernacular. Like Bede, composers of the Wycliffite Bible believed these rhetorical figures were fit for holy scripture. But they extended the use of these devices into vernacular religious language. This fact may be somewhat surprising since, as Auksi (1975: 10) points out, Wyclif himself was skeptical about rhetoric: it was “superficial, ornamental, and generally hypocritical.”¹¹⁰ By analyzing syntax and rhetorical figures in Wyclif’s sermons, Hargreaves (1966: 12-13) corroborates Wyclif’s advocacy of a plain style. This approach to linguistic expression, which differed from that of the Benedictines and other religious orders, discouraged the use of most formal rhetoric. But according to Hargreaves’s study, the plain style did allow for two types of rhetoric—rhetorical questions and figures of repetition, which included homoeoptoton and polyptoton.

Repetition was thus an indispensable rhetorical device for the Wycliffites, and it encouraged them to employ Latin borrowings with similar endings and with similar bases in their writing. Explaining some of their motivations for employing figures of repetition, Cigman (1989), Volk-Birke (1991), and Peikola (1994) argue that antonymic pairings were a key characteristic of Wycliffite texts for both stylistic and ideological reasons. Cigman (1989: 484) suggests that textual polarizations reinforce the Wycliffites’ dualistic worldview, which held that there were few, true believers in Christ

¹¹⁰ These and other sources in this and the following paragraph were first identified in an excellent survey of studies on Wycliffite discourse, Peikola (1994).

opposed to many, false men. The Wycliffite interest in dualism may be reflected in antonymic homoeoptotonic pairings, such as *abhomyable/profitable* and *acceptable/dampnable*. Even so, in repeating lexemes with the same ending, the Wycliffites relied even more on synonymy and other parallelisms; the motivation for repetition cannot be explained by a dualistic ideology alone. Their primary rhetorical interest may have been lexical pedagogy—that is, they intended to help their readers learn and remember words of similar meaning and form (e.g. *perdicioun/dampnacioun*, *abominable/reprevable*). Overall, by foregrounding such lexemes as *passioun*, *resurreccioun*, and *dampnacioun* in rhetorical figures, the Wycliffites attempt to make significant Christian concepts less hard and more memorable for the literate and listening public in late medieval England. And, of course, this linguistic foregrounding has morphological consequences, as it makes the decomposability of the borrowings into bases and affixes more transparent.

A study of rhetorical phenomena based on these borrowed derivations is necessarily a study of both lexis and morphology in Middle English. Sometimes the research questions in these areas overlap; other times their primary interests are markedly different. On the lexical end, this study has found a number of rhetorical motivations for the use of borrowed lexemes with potentially suffixal endings in English.

Homoeoptotons were employed for a variety of reasons, including thematic emphasis, intensification, definition, stylistic variation, synonymy, antonymy, or other parallelisms. Polyptotons were used most often for cohesion, transitions, and non-redundant topic control spanning multiple clauses, but occasionally for emphasis or rhetorical flourishes. Contemporary theorists such as Geoffrey hint at only some of these motivations; a

detailed qualitative study of actual writing practices finds a broader range of rhetorical purposes. Once these motivations are documented and understood, a lexical analyst can then identify part, though by no means all, of the writerly impetus to borrow certain types of lexemes from Latin or French when composing Middle English texts. Ultimately, while most lexical studies explain the motivations for borrowing strictly on the basis of semantics and cultural contact, this study expands our sense of the driving forces behind borrowing as a linguistic process. Rhetoric, particularly in learned registers, was a key motivating force behind the use of Latinate suffixed lexemes.

On the morphological end, homoeoptotons and polyptotons from the corpus can be treated as types of indirect evidence of potential morphological structure. Considered alongside contemporary metalinguistic evidence, the corpus data help to identify moments in which derived borrowings might have been perceived as decomposable by writers, readers, and/or listeners. Specifically, a homoeoptoton—as a species of suffixal paradigm—foregrounds a pattern in which one ending is attached to multiple possible bases. When encountering or producing this figure, writers or readers may recognize a similarity and regularity in words containing that ending; the implied lexical breadth may increase the perception that the ending is a productive suffix. Conversely, a polypton—as a type of lexical paradigm—foregrounds a pattern in which multiple endings are attached to one base. Such proximate forms in a polyptoton suggest the detachability of the ending. Furthermore, morphological decomposability is most transparent in rare cases where both a polyptoton and homoeoptoton are used, and when these figures share at least one lexeme. This situation suggests the ending is both detachable and re-attachable to different bases.

Applying this theory to the analysis of borrowed lexemes, this study discovers that *-able*, *-age*, *-ity*, and *-cioun* were perceived by some writers, and likely some readers, as potentially productive suffixes in Middle English. This is not a claim about actual productivity, but rather perceived productivity. This measure likely varies by person, text, and affix. For example, the qualitative and quantitative data suggest—based on frequency of overall rhetorical figures, lexical breadth, and the few examples of combined homoeoptotons and polyptotons—that *-cioun* likely had a higher perceived productivity than the other borrowed forms, at least for those writing or reading the Wycliffite Bible. Still, the perceived productivity of *-ness* was likely greater than all borrowed forms, an unsurprising claim backed by the quantitative account.

But why does “perceived productivity” even matter in this analysis? In the case of borrowed morphology in the medieval period, it is difficult to measure actual productivity. Hybrid forms of the pattern “native base + Latinate affix” are rare, and genuine coinages and derivations in ME are hard to find and identify, particularly for the suffixes *-cioun* and *-ity*. In addition, absolute frequency counts and mathematical assessments of “actual productivity,” while valuable, are only descriptive. They do not address questions of linguistic explanation—namely, *how* units of language become increasingly perceived as productive affixes. By no means does the present corpus-based study provide a comprehensive answer to this question. But it details one set of factors that contributed to the perceived morphemic status and productivity of borrowed suffixes in late medieval English. And significantly, it demonstrates that these rhetorical factors were not limited to the relatively small communities of the London Grocers and Goldsmiths. On the contrary, morphologically conscious language use occurred in a

variety of texts intended for more public audiences, particularly those of the Wycliffites, who actively disseminated their texts widely in England.

4.7 Conclusions

This chapter combines accounts of theory and practice—that is, contemporary metalinguistic data and corpus data, respectively—to describe and understand the rhetorical uses of word-formation and, specifically, borrowed derivational morphemes from 1300-1600 in England. The following conclusions have been reached:

(1) Medieval grammars show a lack of vernacular metalinguistic cataloguing or recognition of derivational morphology in English, except for *-ly*, as observed in a late Middle English translation of a little *Donet*. It was not until Mulcaster in the sixteenth century that one finds a catalogue of derivational morphemes and direct evidence of the perceived morphological structure of borrowings.

(2) Grammars and rhetorics in the period reveal a blurry distinction between inflectional and derivational morphology, as well as a sometimes fuzzy understanding of case. But by the sixteenth century, rhetoricians realized that Latin rhetorical traditions based on case were not a good fit for the grammar of English. As a consequence, they turned to derivational morphology to adapt homoeoptotons and polyptotons to the English language.

(3) Despite the lack of vernacular rhetorics in the medieval period, there is strong evidence of continuing rhetorical interest in word-formation. On the one hand, there was a production and circulation of Latin-based rhetorical scholarship that promoted and prescribed the use of rhetorical figures involving word-formation. On the other hand,

there is sufficient corpus evidence from the fourteenth and fifteenth centuries to suggest that word-formation-based rhetoric was practiced in a number of English texts. At the same time, one must heed James Murphy's caveat (1964: 15-16) about the notion of rhetorical influence. While it is entirely possible that these Latin traditions influenced and encouraged English writers' experimentation with word-formation based rhetorical figures, it may be just as likely that writers happened to be using language patterns they discovered on their own without knowledge of the Latin traditions. In any case, the metalinguistic and corpus data both demonstrate a relatively wide interest in the period in the strategic use of lexical patterns for various rhetorical effects in written compositions.

(4) The corpus evidence suggests that, because late ME writers consciously employed rhetorical figures with *-ity*, *-age*, *-able*, and *-cioun*, they likely perceived these suffixes to be independent linguistic units that were potentially productive. In other words, their metalinguistic awareness of morphology implies their perception of the analyzability of these suffixes in English. It should be noted, however, that this evidence is only suggestive rather than conclusive. Without direct vernacular accounts of morphological composition from the period, it is difficult to pin down with certainty how metalinguistically aware ME writers were. And while the implicit evidence is strong, there is no explicit evidence that ME writers, facing a crumbling inflectional system, consciously turned to borrowed derivational morphology to create rhetorical figures.

(5) The corpus evidence also suggests that, even though readers of prose texts were not necessarily metalinguistically aware of the rhetorical uses of morphology, the frequent use of these rhetorical figures may have increased their ability to analyze these suffixes as productive units of language. Examples of homoeoptotons suggest analogical

similarities between lexemes, and the potential ability of the endings to attach to a variety of stems. The higher this lexical breadth, the higher the perceived productivity. Polypotons demonstrate the separability of suffixes from their bases—i.e., the decomposability of borrowed derivations. The more often readers and listeners encountered such co-occurrences in writing or speech, the more analyzable the borrowed morphology became. Even so, without the ability to test native ME speakers, it is impossible to determine the levels of morphological decomposability among readers based on this evidence alone. It is only possible to suggest that exposure to these rhetorical patterns likely increased the perceived analyzability of lexemes among readers and listeners.

(5) The evidence and analysis in this chapter builds towards a notion of perceived rather than actual productivity when assessing the status of borrowed derivational morphology in English 1300-1600. Implicit in this claim is that absolute frequencies and counts of hapax legomena may not be as helpful in historical contexts in which there are spotty, incomplete, and short records, few hybrid forms, and few identifiable coinages. Moreover, measures of actual productivity are descriptive rather than explanatory. To uncover the reasons why certain endings on borrowings came to be perceived as potentially productive suffixes, measures must be developed that identify the mechanisms by which complex morphological can become more transparently decomposable. This chapter identifies one of those mechanisms—the rhetorically motivated co-occurrences of lexemes of like bases or like suffixes. Future chapters will explore the relationships between absolute frequencies, relative frequencies, lexical breadth, and morphological transparency.

Chapter 5

End-Rhymed Poetry, Naturalization, and Perceived Morphological Productivity in Late Medieval England

In terms of text selection, poetry is rarely a first choice for linguists investigating language phenomena. The genre is certainly indispensable in studies of sound, including metrics and phonology.¹¹¹ But because of its highly structured and sometimes atypical diction and grammatical patterns, it is often treated as a highly marked register. A linguist once recommended to the present author that, if at all possible, poetry be excluded from historical studies since it presents grammatically “weird” constructions that are unlikely to reflect everyday language use. This is not to say that poetry has been deemed unhelpful by all linguists; those working on historical reconstruction in a number of languages often turn to poetry for insights on phenomena such as sound change. Without a doubt, it is wise to acknowledge the idiosyncrasies of poetic discourse and avoid assumptions about its general representativeness of typical linguistic behavior. But poetry should not be dismissed so readily; it should not be portrayed as valuable only for historical phonologists or for those who have no other available text-types to examine in a given period. As the following chapter will illustrate, end-rhymed poetry from the late medieval period turns out to be informative when addressing questions regarding borrowed derivational morphology.

¹¹¹ Consider the LINGUIST List discussion of the pronunciation of *thou* in the seventeenth century and beyond, which relies in part on evidence from poetry (specifically, words that are rhymed with *thou*): <<http://www.linguistlist.org/issues/7/7-1473.html>>.

Two of the most popular¹¹² late fourteenth-century poets, Chaucer and Gower, were interested in Continental poetic forms and used a relatively high number words borrowed from Latin and/or French.¹¹³ And two of their successors in the early fifteenth century, Hoccleve and Lydgate, continued and extended Chaucerian poetic practices. All four of these poets were motivated to use borrowed derivations for a variety of reasons: the semantics of the lexemes, their prosodic qualities, their usefulness as words signaling an aureate or high style in the vernacular. The poetic utility of borrowed derivations was partly a result of these poets' shift away from native alliterative verse practices towards forms that emphasized end rhyme. Borrowings with endings such as *-able*, *-ite*, and *-cion* provided vernacular poets with a new stock of multisyllabic words all ending in the same sonic sequences. Some of these forms allowed for feminine rhymes, where the last syllable would be unstressed (*-able*); some allowed for masculine rhymes, with stress on the final syllable (*-ite*, *-cion*).

Although the derivatives were chosen by these poets for their phonological and semantic properties, this word choice had morphological consequences. The most obvious effect is an increase in the absolute frequencies of different morphological types used by a specific set of English writers—i.e., those producing courtly poetic discourse in

¹¹² *Popularity* is obviously a subjective term. Here I simply mean that, among poets in the ME period, Chaucer and Gower were certainly two of the most widely read. I do not mean to suggest that poetry as a whole was as widespread among ME audiences as prose works such as the Wycliffite Bible. But poetry was certainly more publicly disseminated than community-specific genres such as guild records (discussed in Chapter 3).

¹¹³ Here I simply mean that many of the words in their English works have etymons in Latin and/or French. The use of these words may have been a result of direct borrowing from the source language—e.g., *sublimation* borrowed from Latin. Others, especially those in Anglo-French (e.g., *brocage*), may have been available to Chaucer and Gower in their spoken language since these poets were bilingual. I assume that both types of derivatives in these poets' written English texts are “borrowings,” though I also acknowledge that this is a simplification. Neither poet may have borrowed AF lexemes if these terms were already in their linguistic repertoire. I speak of borrowings from the point of view of a mostly monolingually English reader or listener to their poems, so that any derivative with an etymon in French and/or Latin is a borrowing in English.

the vernacular in the late medieval period. This increase in the use of borrowed derivations was part of a larger trend in the late fourteenth century: a number of emerging vernacular prose genres (such as the sermons and Biblical prose discussed in Chapter 4) also began to use significant frequencies of derivatives from French and Latin. Even though this was a general trend in the period, writers likely had motivations for using borrowed derivations that were particular to each genre. One of the particular motivations for poets, for example, may have arisen from aesthetics and formal concern; borrowed derivations made for useful end-rhyming devices. This chapter provides a small case-study that explores this possibility.

Moreover, different ME vernacular genres foregrounded borrowed derivatives in distinct ways. Recall that one of the characteristics of late ME Biblical prose was the salience of derivations in rhetorical patterns such as homoeoptotons and polyptotons. In contrast to prose, end-rhymed poetry makes its formal structure transparent visually (through lineation) and audibly (through metrical patterns and rhyme schemes). Because poetry used borrowed derivations frequently as end-rhymes, these borrowings receive a type of foregrounding particular to this genre. And the potential effects of the use of derivations in these specific poetic contexts on poetic audiences deserve further investigation. Granted, audiences for poets such as Chaucer and Gower were likely literate, some likely fully bilingual and some likely monolingual. And many of them had likely encountered a number of borrowed derivatives in other contexts (e.g., religious terms such as *salvation* were likely encountered when listening to a sermon). But how did the particular poetic uses of borrowed derivatives in poetry reflect the naturalization

of borrowings and affect the analyzability of suffixes within the poetry-reading community?

Visually and audibly, derivations received more salience and emphasis when in poetic contexts, particularly in end-rhyme position, as observed in the following excerpt from the beginning of Chaucer's *The Friar's Tale*:

(5.1) Whilom ther was dwellynge in my contree
An Erchedekene a man of heigh degree
That boldely dide execucioun
In punysshynge of fornicacioun
Of wicchecraft and eek of bawderye
Of diffamacioun and Auowtrye
(*Canterbury Tales*, my emphasis)

From this example, several questions about the naturalization and perceived productivity of *-cion* can be posed. Does the close proximity of *execucioun* and *fornicacioun* in the couplet impact the salience, transparency, and therefore perceived productivity of the suffix, much like the homoeoptotonic prose patterns observed in Chapter 4? Does the difference in positional occurrence—i.e., *diffamacioun*'s occurrence as a non-end-rhyme vs. those derivations appearing as rhymes—signify differences in the levels of naturalization of the different lexemes? More broadly, what do the type and positional frequencies of such *-cion* derivatives in a wider sample of poetic discourse reveal about its naturalization and productivity relative to other suffixes (both native and borrowed)?

To explore these and other questions, this chapter offers a small case study of the use of four suffixes (*-ness*, *-ite*, *-age*, *-cion*)¹¹⁴ in a corpus of late Middle English rhymed

¹¹⁴ These suffixes were chosen for several reasons. All four have been studied in previous chapters of this dissertation, so they were selected again in order to allow for comparisons in their use in different genres. All four represent relatively frequent nominal types in the period; Mersand (1939) in particular notes that Latinate/Romance nominals form a core part of Chaucer's poetic vocabulary. The native suffix (*-ness*) was

poetry (Chaucer's *Canterbury Tales*, Gower's *Confessio Amantis*, Hoccleve's *Regement of Princes*, and Lydgate's *Reson and Sensuallyte*).¹¹⁵ To compare the morphological status of these endings in the corpus, the study develops measures of productivity that are generally applicable to analyses of suffixation within any register. These measures depend on assessments of various frequencies. The analysis first focuses on token counts: absolute frequencies provide general evidence about the representation strengths of lexeme types, but do not necessarily impact the transparency of suffixes themselves. To assess the potential productivity of suffixes, the analysis turns to factors that would have impacted the decomposability of different lexemes—namely, type frequencies and the ratios of bases and derivatives. Lexical fields are considered in order to provide a more nuanced understanding of the lexeme groups most likely to contribute to the perceived productivities of each suffix. By adapting the methods of Harald Baayen and Jennifer Hay to this historical period, this study identifies one procedure for assessing the relative productivities of suffixes within individual registers in earlier periods of the language. It also identifies the specific lexemes of each type which were most likely to contribute to the perceived transparency of each suffix within this genre.

Moreover, this chapter argues that there are specific facts about the development of these suffixes in ME that are particular to the genre of poetry. For example, an examination of positional occurrence—i.e., whether or not lexemes occur line-finally—provides potentially revealing information about both the relative naturalization of different derivations and the aesthetic motivations for using words with these endings in

again chosen as a control variable so that relative comparisons could be made between it and the borrowed endings.

¹¹⁵ See the following section for a discussion of the choice of these four texts for the corpus.

the first place. And an analysis of the use of borrowed derivatives in rhymed couplets demonstrates the effects of poetic structure on the salience and transparency of suffixes.

Features such as the transparency of derivatives and the analyzability of suffixes are particularly important when trying to answer the following question: what linguistic mechanisms exist within poetic discourse to suggest whether a lexeme such as *usage* was perceived as a borrowing or an English derivation? There are several ways to approach this question, particularly in terms of whose perception is being analyzed. From the point of view of the ME poet and their bilingual readers, *usage* may not be a borrowing at all because the term was likely used often in their linguistic repertoire (in both French- and English-speaking contexts). But poetic audiences were not all bilingual. There is manuscript evidence that court poetry was marked for oral reading (Echard 1999), so some portion of the audiences must have been barely literate or illiterate. And, presumably, some were mostly monolingual. For a monolingual reader or listener, the ability to perceive *usage* as an English derivational process would depend on several factors—in particular, the analyzability of the suffix. From contemporary studies of morphological processing such as Hay (2003), it is known that this analyzability depends in large part on how much more frequently the base (*use*) appears in language compared to its derivative (*usage*). In this chapter I suggest that, in order for processes to be perceived as English derivations by monolingual audiences of particular genres, there must be features of language use that compel readers and listeners to decompose derivatives. Three such features—type diversity, base-derivative ratios, and end-rhyming couplets—will be explored.

Ultimately, this study discovers that the Middle English poets represented in the corpus were strongly motivated to use derivatives ending in *-cion*, and to a lesser extent *-ite*, because they served as particularly useful end-rhymes. The suffix *-age* was more naturalized and likely seen as more potentially productive than *-ite* or *-cion*. Even so, usage patterns suggest that popular Middle English poetry may have contributed, at least in small part, to the analyzability and perceived productivity of all three suffixes—at least within communities that would have been exposed to these texts (most likely upper- and upper middle class readers and listeners). Overall, this chapter finds that there are register-specific types of evidence and register-specific effects on morphological processes that must be accounted for when characterizing the emergence of borrowed derivational suffixes in English.

5.1 Previous Studies and Text Selection

To date, there have been few comprehensive studies of poetry and borrowed derivational morphology in the history of English. Fisiak (1965) offers one chapter on derivational morphology in Chaucer, though the description offered is a catalogue of affixes with a brief feature analysis. There is no accompanying discussion of the effects on morphological use due to particulars of the poetic register or even to Chaucerian idiosyncrasies. Donner (1978) has explored Chaucer's word-play, but the poet's use of borrowed derivational morphology is only a small part of Donner's general analysis. The studies most relevant to the questions posed in this chapter have been lexicographic in nature, and they too have been almost singularly focused on the vocabulary of Chaucer. Mersand (1939) provides an early statistical analysis of the use of Romance lexemes in Chaucer. He estimates that 60% of nouns in *The Canterbury Tales* are of Romance

origin (1939: 117), and that in most of Chaucer's works, the percentage of Romance words used as rhymes ranges from approximately 30% to 55% (1939: 87-8). He also discovers some specific poetic effects on Chaucer's lexicon: (a) Chaucer tended to use a higher percentage of Romance lexemes when translating from Latin than from French (1939: 97); and (b) he used higher percentages of Romance loans when writing tales than when writing allegories (1939:99). Mersand's study is helpful primarily because it identifies various features that affected the use of borrowings in Chaucer's verse and lays out a range of expected Romance usage. But his study cannot necessarily be extrapolated to Middle English poetry more generally, and he does not provide specific statistical counts of Romance derivations.¹¹⁶

Cannon (1998) and Hailey (2007) also present lexicographic studies of Chaucerian language. Hailey's work is interesting, since he proposes that Chaucer had an effect on the lexical diffusion of a number new terms in Middle English, many of them borrowed derivatives. He tracks lexemes which have first attestations in the *MED* in either the *Cursor mundi* or the *Ayenbite of Inwit* and second or third attestations in Chaucer, noting that the senses of the terms originated by Chaucer frequently appear as the primary definitions in the *MED* and are cited often by subsequent authors. Hailey attributes this lexicographic phenomenon to the fact that Chaucer was one of the most widely read writers in the period, whose vocabulary had an impact on later writers. Combing through his list of terms that were taken up by Chaucer and diffused into other texts, I found two *-ite* lexemes (*quantite*, *magnanimite*) and many *-cion* derivatives (*abuscion*, *dissencion*, *generacion*, *extorcion*, *satisfaccion*, *significacion*,

¹¹⁶ He does provide an appendix of Romance words appearing in any works by Chaucer, yet he does not provide counts for any words occurring more than four times.

corrupcioun, possessioun, imaginacioun, detraccioun, conversacion, complexioun, compassioun, porcioun). There were also a number of words with other borrowed affixes, including *-aunce* (e.g. *aboundaunce, distemperaunce*), *-ous* (e.g., *riotous, suspecious*), and *-ify* (e.g., *fructifien, glorifien*).¹¹⁷ Altogether, a significant portion of Chaucer's innovations and early adoptions—at least 13% (or 45 out of 330) in Hailey's survey—consists of borrowed derivations. And Hailey suggests that Chaucer may have had an impact in the diffusion of many (if not most) of these lexemes. Providing the example of Chaucer's use of *imaginacioun*, Hailey (2007: 19-20) argues that

Chaucer is the first cited author for nine of the remaining fourteen senses [of *imaginacioun*], including the primary sense 1a [from the *MED*], 'the faculty of forming mental images from sense data.' This sense and three others . . . are all particularly productive, with numerous subsequent citations for each, and all nine Chaucerian senses of the word have later citations. I certainly would not argue that for each individual sense Chaucer is the direct influence on all subsequent users of that meaning of the word; the processes of reborrowing and recoinage are not limited to Chaucer. But I would assert that when the same phenomenon is observed in numerous entries, it is reasonable to conclude that Chaucer's writing did have a real effect in expanding the expressive capacity of the lexicon.

While Hailey certainly identifies a few Chaucerian derivational innovations such as *imaginacion*, it is best to consider Chaucer's use of derivations less as a case of origination and diffusion and more as evidence that Chaucer was one of several early adopters of a number of derivations borrowed from French and Latin. Hailey is perhaps too enthusiastic in claiming Chaucer as an innovator. His citation of *extorcion*, for

¹¹⁷ Native derivational innovations also appeared, including forms with *-ness* (e.g., *sobrenesse, stableness*) and *-hede* (e.g., *unmanhede*).

example, ignores the fact that several other writers (e.g., Trevisa; the rolls of Parliament; etc.) were also using the lexeme contemporaneously with Chaucer in the 1390s.¹¹⁸

Ultimately, this chapter is less interested in tracing diffusion—that is, who used which derivations first and which authors likely adopted which lexemes from whom. Instead, the focus is on the fact ME poets such as Chaucer used relatively high frequencies of borrowed derivations in vernacular poetry, many of which were relatively new in the language. Some derivatives (e.g., *marriage* (1325)¹¹⁹, *charite* (1160)) were likely very familiar to poetic audiences, while others (*imaginacion* (1390), *calcination* (1393)) may not have been so familiar. And because several ME poets use such diverse ranges of borrowed derivations in their writing, I explore the following three issues: (1) ME poets' varied motivations for using frequent numbers of borrowed derivations in their verse; (2) evidence of naturalization that can be gleaned from the positional distributions of derivatives within verse; and (3) the potential impact on the analyzability and perceived productivity of borrowed suffixes in English when poetic audiences are exposed to frequent numbers of derivatives in salient poetic patterns.

Like Chaucer, Gower also used a significant number of borrowed derivations in his English verse. Yonekura (1991) provides a comprehensive list of first attestations from the *OED* attributed to Gower's *Confessio Amantis*. He suggests that Gower too may have been influential in expanding the English vocabulary, though again it is difficult to assess just how much writers were directly influenced by reading Gower's work. Appearing in Yonekura's list of 459 words, which include first attestations of new

¹¹⁸ The *MED* dates Chaucer's use as 1390, though the primary sense is attributed to Trevisa in 1398. These dates are too close to claim with any certainty that Chaucer's use somehow preceded and influenced Trevisa's use.

¹¹⁹ First attestation date, according to the *MED*.

senses of older words in the language, are derivatives ending in *-age* (*gaignage, pilage, herbage, visage*), *-ite* (*adversite, auctorite, congruite, fraternite, nativite, unite, virginite*), and *-cion* (*approbacion, calculacion, congelacion, deificacion, deputacion, distallacion, incantacioun, proliferacion, revolucion, subfumigacioun, sublimacion, substitucion, supplantacion, commendacion, conclusion, constitucion, demonstracion, descencion, disposicion, division, generacion, impression, interpretacion, invocacion, meditacion, operacion, prolacion, proporcion, question, supplicacioun*). Yonekura's study suggests that a range of relatively new borrowed derivations in English appear in Gower's vernacular verse.

Because they were two of the more widely distributed texts in the medieval period, Chaucer's *Canterbury Tales* and Gower's *Confessio Amantis* were both selected for this study's corpus. The popularity of these works can be seen in the number of surviving manuscripts that contain these texts: in terms of manuscript circulation, Edwards and Pearsall (1989) find that complete copies of the *Canterbury Tales* exist in at least 57 manuscripts, while the *Confessio* resides in at least 40.¹²⁰ The authors comment specifically on the geographical diffusion of varied copies of the *Canterbury Tales*: "it is the variety of kinds of book-making that is remarkable in manuscripts of the *Tales*, reflecting in part at least the geographically diversified centres of production for copies" (261). In terms of reception, Fox (1968) and Trigg (2006) also confirm Chaucer's influence on writers and readers from the fifteenth century and beyond. Echard (1999) and Coleman (2002) provide evidence suggesting that Gower was read orally in a number of well-educated and less well-educated communities; educated prelectors likely

¹²⁰ These figures are likely conservative, since Edwards and Pearsall count only those manuscripts which are complete or "may be presumed to have been once complete" (1989: 271). Thus, they do not account for the circulation of excerpts of these tales, which may have had an even wider circulation.

facilitated readings, though cheaper manuscripts (with the Latin excised) suggest private reading may have also occurred (Echard 1999: 70-71).

Because of the circulation and reception of the *Canterbury Tales* and the *Confessio*, the impact of these texts on the morphology of borrowed derivations should be evaluated. To reduce the effects of poetic idiosyncrasies and make broader generalizations about rhymed Middle English poetry possible, I have also added Hoccleve's *Regement of Princes* and Lydgate's *Reson and Sensuallyte* to the corpus. These early fifteenth-century poets are commonly considered the successor generation to Chaucer and Gower. Fisher (1992:1178) argues that Hoccleve and Lydgate were both instrumental in the "initiation of a plan to cultivate English as the official and prestige language of the nation," which led to the Chancery's shift to English and (eventually) the emergence of a vernacular standard. This plan depended on both poets' closeness to the Lancastrian court, their interest in promoting and circulating Chaucer's vernacular work, and their commitment to writing original verse in English. While their reception in contemporary and later generations was less influential than Chaucer (Trigg 2006: 303-304), the work of both poets is still significant. Edwards and Pearsall count at least 42 complete copies of the *Regement* in various manuscripts. While they unfortunately do not provide a count for *Reson and Sensuallyte*, they identify 30 copies of Lydgate's *Fall of Princes*.¹²¹ Even so, Kahin (1941) finds that sixteenth-century poet Edmund Spenser relied on Lydgate's *Reson and Sensuallyte* for his own work, so this text had some circulation and reception. Ultimately, because *Fall of Princes* was not digitally accessible, *Reson* was chosen for its availability. Both it and the *Regement* are valuable

¹²¹ It can probably be assumed that the circulation of *Reson* was less than *Fall of Princes*, which is commonly considered one of Lydgate's most popular works.

for two primary reasons: they offer further examples of end-rhymed verse practices in the period that reflect usage patterns of borrowed derivations, and they exemplify the work of people actively engaged in promoting and elevating the use of English in fifteenth-century England.

5.2 Methods: General Considerations

To approach these texts from a quantitative and qualitative perspective, editions were chosen from the Compendium of Middle English's Corpus of Middle English Prose and Verse (CMEPV). While digitized versions of several different manuscripts of the *Canterbury Tales* are available in the CMEPV, the Ellesmere¹²² was chosen because it is often seen as one of the most complete and definitive versions.¹²³ The prose sections of the *Canterbury Tales*—namely, the *Tale of Melibee* and the *Parson's Tale*—were not considered. The only version of the *Confessio* in the CMEPV is from Macaulay's *The Complete Works of John Gower*. Because it does not contain Gower's Latin verse insertions—and these needed to be consulted—the qualitative analysis also considered the *Confessio* at the Rochester TEAMS site.¹²⁴

Four suffixes were chosen for this study: three are from borrowed derivations (-age, -ity, -cion) and one from native formations (-ness). The quantitative and qualitative accounts of -ness serve as a basis for comparisons in usage patterns between one native and several non-native forms. Searches were conducted using a University of

¹²² The use of derivations likely varied manuscript to manuscript, though it is difficult to know (without designing a full study comparing manuscripts thoroughly) how much the use of derivatives changed on a line-to-line basis. Because this was designed as a small case-study to raise questions about derivations in English poetry, I did not conduct such a comparison and chose the Ellesmere as a methodological simplification. But future studies of derivations in poetry should certainly consider the variable use of derivatives among different manuscripts of the same text.

¹²³ The *Riverside Chaucer*, for example, is largely based on the Ellesmere.

¹²⁴ <<http://www.library.rochester.edu/camelot/teams/rpcabk1fr.htm>>

Michigan web-based retrieval that specifically allowed for string sequences that can occur anywhere in a word.

Spelling variation proved to be a complicating factor in the study design, and several decisions were made to capture the primary orthographic representations of each suffix in each text. After some initial test searches, <nesse> and <age> were determined to be the standard representations of *-ness* and *-age*, respectively. For *-ity*, the sequences <itee>, <ytee>, <etee>, <ite>, <yte> were all searched. The primary orthographic forms of *-cion* were determined to be <cion> and <cioun>, though other graphic representations were examined, including <sion>, <xion>, and <tion>, and all the preceding sequences with a <y> in place of <i> and an <ou> in place of <o>.¹²⁵

Plural forms of each affix were factored into the total counts for each ending. If a token included a suffix followed by other inflectional and derivational suffixes, it was not retrieved in searches (e.g., *charitable* was not counted for *-ite*).

Certain tokens ending in <age> and <nesse> were excluded from this study. The general principle for including a particular lexical item was the following: if a form was etymologically derived using an affix (as confirmed in the *OED* or *MED*) and was a non-proper noun, it was included in the study. Thus, even though lexemes such as *image*, *menage*, and *vernage* had the potential to be interpreted as *age* formations by ME readers, they were not included in this study. Moreover, *witnesse* was not included in the counts because it does not follow the morphological pattern of all other contemporary *-ness* formations. Unlike *cursednesse* or *hoolynesse*, for example, it is not a deadjectival

¹²⁵ These spellings consist of most of the attested spellings found in the *MED*. Even so, my searches missed certain rare spellings: e.g., <con> for *-cion*. Such spellings were tested on the corpus. But because they were string retrievals that could occur anywhere in the word, they generated far too many irrelevant forms to make their study practical.

nominal. It was also already functioning as both a noun and a verb in the ME period, a grammatical function uncommon for most *-ness* formatives. Granted, as a relatively frequent lexeme, it may have contributed to the overall analyzability of other *-ness* formations. It appears twenty-six times in Gower (including tokens of the compound *falswitnesse*), for example. But because of differences in its etymological makeup and grammatical behavior, it was not included in the aggregate counts of *-nesse* in this study.

Because there were many different smaller analyses of the poetry data, each with different methodological concerns, the specific details of each quantitative and qualitative approach appears in the individual sections below.

5.3 Token Counts: Absolute Frequencies

Absolute token frequencies are typically dismissed in scholarly accounts of morphological productivity. Baayen's numerous studies of hapax legomena (Baayen 1989, 1992, 1993; also summarized in Bauer 2005), find that productive processes tend to be characterized as having low frequencies of a broader range of types rather than higher frequencies of fewer types. Cognitive Grammar (Tuggy 2005) and frequency-based theories of morphology (Bybee 2001) suggest that morphologically complex words are more likely to be stored and retrieved by speakers as whole words as their frequency of use increases.

Even so, it is not immediately clear that these conclusions about token frequencies and morphology are entirely relevant to the linguistic situation of borrowed derivational morphology in Middle English. Most PDE studies of productivity approach suffixes as already established linguistic units in the mind—either part of a rule or a schema. While

some Middle English speakers (e.g., those who were bi- or trilingual) may have stored such representations of borrowed suffixes, many were likely encountering a number of these derivatives with these endings for the first time. In other words, these derivatives were in a stage of vocabulary acquisition that helped speakers produce the very rules or schemas that allowed them to recognize these endings as potentially productive units. Language acquisition studies, such as those described in Chapter 2, may thus offer some insights relevant to this period. Unfortunately, very few of these studies have explored the effects of frequency in any great detail. Clark (1993) finds that type frequency impacts learners' ability to analyze derivations into roots and affixes. Although her study does not evaluate this variable, Lardiere (2006) suspects that frequency affects second language learners' ability to recognize derivationally related words and their use in different syntactic contexts. Jarmulowicz (2002) discovers that token frequencies of *-cion* and *-ity* do affect children's abilities to learn prosodic rules associated particularly with those affixes; she speculates that "rule development" of derivational morphemes is "based on frequency of exposure"—i.e., higher frequencies enable stronger or faster development—both in terms of tokens and types.

In light of these studies, I assume that token frequency matters in accounts of borrowed derivational morphology in a limited sense. For speakers to learn a new morphological rule, a certain level of derivatives must exist in usage so that those forms can be analogized. But because absolute token frequency has not been found to reflect productive processes, it will not be considered a direct measure of suffixal productivity. Moreover, in studying the use of relatively new lexemes diachronically, it is important to provide a general descriptive account of the texts and authors who were more or less

likely to use different borrowed derivations. Such an account provides a rough picture of patterns of diffusion and distribution within the corpus, helping to answer the “who is using what and why?” question central to corpus linguistic inquiry.

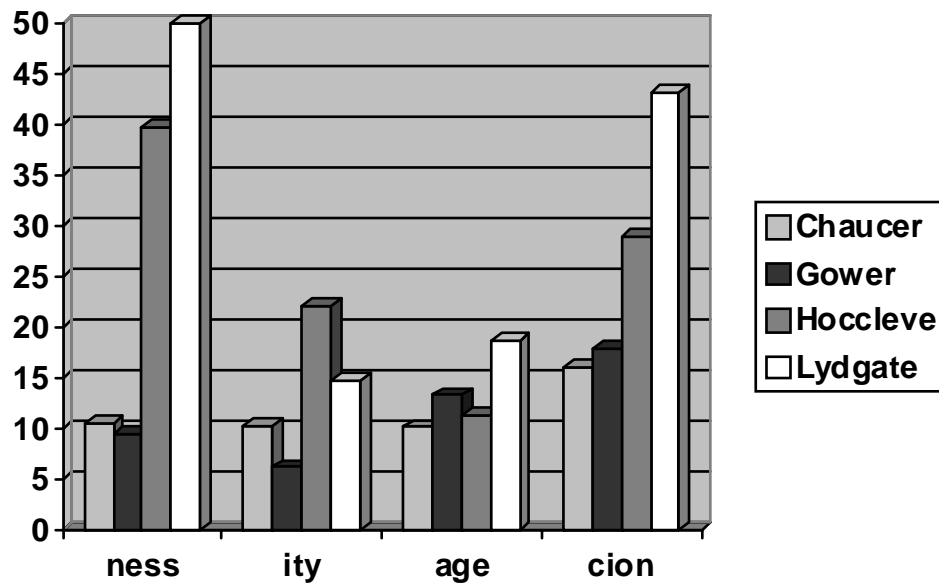
Table 5.1 below provides the total token counts for each poet in the corpus; normalized counts appear in parentheses. Graph 5.1 represents a side-by-side comparison of normalized word-counts¹²⁶:

	Chaucer	Gower	Hoccleve	Lydgate
<i>-ness</i>	216 (10.5)	197 (9.5)	177 (39.9)	203 (50.0)
<i>-ite</i>	210 (10.2)	128 (6.2)	98 (22.1)	60 (14.8)
<i>-age</i>	208 (10.1)	272 (13.1)	52 (11.7)	76 (18.7)
<i>-cion</i>	331 (16.1)	372 (17.9)	129 (29.1)	176 (43.4)

Table 5.1: Absolute frequencies of suffix types for each poet, with numbers normalized to occurrences per 10,000 words in parentheses

¹²⁶ The total word counts for each text are as follows: Chaucer’s *Canterbury Tales* (205,703), Gower’s *Confessio* (207,378), Hoccleve’s *Regement* (44,354), and Lydgate’s *Reson* (40,600).

Graph 5.1: Occurrences of tokens of each suffix type for every 10,000 words



The graph demonstrates that Chaucer and Gower tended to trend together in their rates of use of all four affixes, while Lydgate and Hoccleve were typically more likely to use much higher rates of derivatives. There are statistically significant differences¹²⁷ between Chaucer's and Gower's rates of *-ity* and *-age*, but for the most part these differences are slight compared to differences between these two poets and Hoccleve/Lydgate. The only exception to this general pattern concerns the suffix *-age*, which Chaucer, Gower, and Hoccleve employ at rates similar to one another and significantly less than Lydgate. Some scholars might speculate that the general differences between the earlier (Chaucer, Gower) and later (Hoccleve, Lydgate) generations is attributable to their differing commitments to "aureate style." Denton Fox (1968: 388-9) explains this possibility as follows: "the theory is that Chaucer studied, and followed, the rules recommending

¹²⁷ Chi-square tests show significance between Chaucer's and Gower's use of *-ity* ($p = 0.000$) and *-age* ($p = 0.003$).

ornate diction which were laid down in most of the medieval treatises on poetry, and that the fifteenth-century poets imitated and exaggerated his practice.” While Fox rightly doubts that the fifteenth-century poets’ diction was necessarily dependent on Chaucer’s own practice, the data above suggest that Hoccleve and Lydgate did employ substantially higher rates of borrowed derivatives in their poetry than did Chaucer or Gower. But the data also demonstrate that the fifteenth-century poets also used remarkably higher rates of *-ness* derivatives. An interesting possibility here is that the high style developed by Hoccleve and Lydgate might have depended not on Latinisms solely, but on polysyllabic and morphologically complex lexemes more generally.¹²⁸

The graph also shows that, among the borrowed derivatives, *-cion* was consistently the most frequently used borrowed derivative type for all four poets. It was even more frequent than *-ness* in Chaucer and Gower. As will be seen later in this chapter, its relatively high frequency may have been due to both its attractiveness as a useful end-rhyming device and the variety of lexical fields from which its derivatives could be drawn.

5.4 Suffix Types: Frequencies and Semantics

The following three sub-sections provide a quantitative and qualitative examination of the diversity of lexemes under investigation. The first subsection develops the notion of *lexical density* in order to account for similarities and differences in the use of these suffixes among the four poets of this study. Because type frequencies alone provide only limited insight into questions of productivity, the second subsection adds an analysis of relative frequencies of bases and derivatives to determine which

¹²⁸ This hypothesis would need to be confirmed by further studies of lexemes in Hoccleve’s and Lydgate’s work, in addition to other fifteenth-century vernacular poets.

suffixes were most likely to be perceived as productive and which individual types were most likely to be seen as decomposable. The final subsection provides a qualitative, semantic analysis of the various types in order to determine the most prominent semantic motivations for using each suffix.

5.4.1 Type Frequencies and Lexical Density

The total number of distinct types of each suffix for each poet appears in Table 5.2 below:

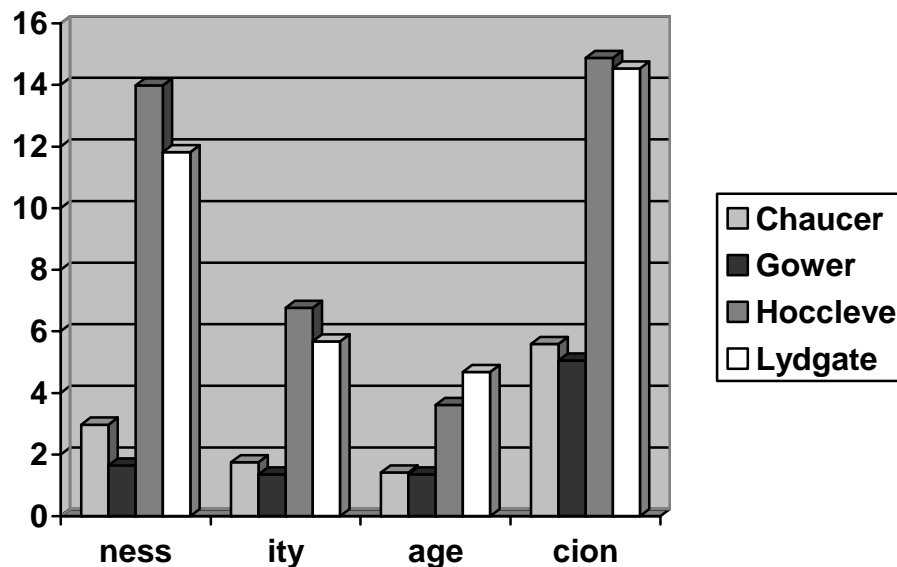
	Chaucer	Gower	Hoccleve	Lydgate
<i>-ness</i>	61	34	62	48
<i>-ity</i>	36	28	30	23
<i>-age</i>	29	28	16	19
<i>-cion</i>	115	105	66	59

Table 5.2: Total number of types for each poet

It is possible to assume that a greater number of types implies a higher likelihood that a suffix will be transparent and decomposable for language users associated with each text (i.e., the poet and his readers/listeners). If so, then on first glance the chart suggests that these affixes may have seemed most decomposable in Chaucer, and that high lexical diversity contributed to *-cion*'s transparency more than for the other affixes. However, total word count must also impact the effects of such diversity. For example, compare Gower's use of 28 *-ity* types to Hoccleve's 30 types. Intuitively, even though the number

of types used is roughly the same for each poet, it would seem that a reader would be more likely to recognize analogous *-ity* forms in Hoccleve than in Gower because of differences in overall word count. Specifically, a reader would encounter, on average, approximately 7 different *-ity* derivatives for every 10,000 words of Hoccleve compared to only 1 different *-ity* derivative for every 10,000 words of Gower. In other words, based on type frequency exposure alone, *-ity* would be more likely to be seen as transparent and productive in Hoccleve than in Gower, despite the fact that both poets use a similar number of *-ity* types overall. To examine this factor for all suffixes in all poets' works, consider Graph 5.2 below, which presents the normalized counts of types for each poet and suffix:

Graph 5.2: Lexical density scores, measured as number of types per 10,000 words



Each value can be considered a *lexical density score*, the proportion of total types adjusted to 10,000 words of text by each poet. Because type frequency has been found to

correlate with productivity in present-day studies of frequency and morphology¹²⁹, I hypothesize the following: a higher lexical density score correlates with an increased likelihood of perceived decomposability, while lower scores may suggest a decreased likelihood that type diversity impacts transparency.¹³⁰

According to these scores, it is clear that Chaucer and Gower trend together in their rates of use of different types of these suffixes. The only statistically significant difference between them concerns *-ness*; a chi-square test between these poets' use of this suffix yields a p-value of .005. While type frequency is not typically considered a criterion for evaluating stylistic similarity, it is interesting to consider the possibility that these poets—who are sometimes described as stylistically similar—may have used derivational suffix types in comparable amounts. Similarly, Hoccleve and Lydgate trend together. Chi-square tests show no statistically significant differences between these two poets' lexical density scores for any of the four suffixes.

The most evident difference in the graph is the consistently higher scores for Lydgate and Hoccleve compared to Gower and Chaucer. Hoccleve and Lydgate exhibit higher rates of diverse usage of these suffixes, so to speak. This disparity may be a result of differences in word count more than any other factor. Even so, the effects on transparency in these texts might be significantly different. If morphological transparency is a function of lexical diversity of types, then Hoccleve and Lydgate may have been even more likely to prompt readers to see these derivatives as decomposable

¹²⁹ Cf. Bybee (2001).

¹³⁰ It may be easier to achieve a higher density in texts with fewer words, especially because there was likely a limited set of likely-to-be-used derivations with each suffix in this period. Of course, this is a conclusion driven by practical considerations rather than theories, since hypothetically (in a generative framework) there could have been limitless possible derivations with these suffixes that were never recorded.

than Chaucer and Gower were. According to these data, then, *-cion* and *-ness* may have been generally more likely to have increased transparency than *-ity* and *-age* due to the effects of lexical density alone, at least within the poetic corpus assembled for the present study.

While Bybee (2001) affirms the effects of such type frequency on transparency and perceived productivity of morphemes, Hay and Baayen (2002) and Baayen (2009)¹³¹ point out that type frequency alone cannot serve as a direct indicator of productivity. Type frequencies certainly reinforce analogical connections between forms, but they must be considered alongside more direct measures of decomposability—namely, accounts of the relative frequencies of bases and derivatives. Thus, lexical density is a significant feature in accounting for potential differences in the perceived productivities of suffixes in different texts, but it should always be a supplement to other considerations, such as base-derivative ratios, which are discussed in the following section.

5.4.2 Relative Frequencies

In his numerous studies, Harald Baayen has argued that there are correlations between lexical frequencies and morphological productivity. Combining their methodologies to analyze the relationship between frequencies and productivity, Hay and Baayen (2002) argue the following:

It certainly appears to be the case that type frequency alone cannot predict productivity. What is crucially missing from any analysis focussing on type frequency alone is any information about how decomposable the types are. Not all

¹³¹ Baayen, R. H. (in press). Corpus linguistics in morphology: morphological productivity. To appear in Ludeling, A., Kyto, M. and McEnery, T., *Handbook of Corpus Linguistics* (Handbuecher zur Sprach- und Kommunikationswissenschaft, De Gruyter).
<<http://www.ualberta.ca/~baayen/publications/BaayenCorpusLinguistics2006.pdf>>

words contribute equally to the productivity of an affix. (Hay and Baayen 2002: 25-27).

This study and Hay (2003) find that the most significant variable correlating with productivity is the ratio of bases and their derivatives. As has been discussed in Chapters 1 and 2, this ratio captures the likelihood that different lexemes will be processed as either whole words (*darkness*) or decomposed words (the lexeme *dark* + the suffix *ness*). If a base is used far more frequently than its derivative by language users, then their model predicts that the derivative is likely to be parsed into its constituent morphemes. If instead the derivative appears far more often than the base, then the derivative is likely to be accessed as a whole word. These differences have consequences for the productivity of various affixes. The more often language users encounter decomposable words, the stronger the mental representation of the suffix as a separable linguistic unit that can produce new words. This means that suffixes with a broader range of decomposable forms are more likely to be productive than those with a narrower range.

If this model is applied to the diachronic development of borrowed derivational suffixes in English, then it can perhaps shed light on at least one of the forces that led to the varying productivities of different affixes. This section provides a quantitative account of this force—the ratios of frequencies of bases to derivatives—within the work of these four poets. My hypothesis is that, because borrowed affixes did not necessarily come into English as independent, productive units of language, usage patterns of derivatives and bases in different registers might have led to the eventual perceived productivities of these suffixes. Hay's and Baayen's methods allow for a quantitative

assessment of the sorts of claims made by earlier scholars of English suffixation, such as Gadde (1910: 70).¹³²

To fit the model to the data in this study, I have adapted Hay's and Baayen's methods in several ways. While the authors do not restrict their frequency counts to any one genre, I have focused on base/derivative comparisons within individual registers. This section discusses these ratios within rhymed poetry in late Middle English, whereas Chapter 6 presents a more comprehensive analysis of these ratios in personal correspondence and medical texts in late Middle and Early Modern English. As such, the results in the section should be considered as only a rough estimate of the decomposability of derivations in similarly rhymed poetic discourse from this period.¹³³ Moreover, for methodological simplification, I have taken Hay's proposal (2003) for a dividing line in distinguishing decomposable vs. undecomposable forms, rather than the statistically determined "parsing line" based on the corpus used in Hay and Baayen (2002). Hay (2003) assumes that ratios above one—that is, whenever bases are more frequent than their derivatives—implies decomposability. And the higher the ratio, the stronger the likelihood of decomposability. Hay and Baayen (2002: 15-16) find that the parsing threshold for their PDE data is likely to be slightly higher than this point, but they also acknowledge that there is no absolute threshold for morphological parsing. Instead, it is best to think of these ratios as existing on a continuum, where higher ratios imply high likelihoods that language users will decompose the derivatives and lower ratios (values approaching zero) imply users likely treat lexemes as whole words.

¹³² For more on Gadde's hypothesis about bases, derivatives, and productivity in the history, see section 5.4.1.

¹³³ Additional patterns that may have increased decomposability and that are particular to poetic discourse will be considered later in this chapter.

For this study, twelve pairs of bases and derivatives were chosen for each suffix type. Particularly for the borrowed affixes, many of the derivatives did not have corresponding bases attested in the *OED* or *MED* for this period or earlier stages of the language. And in some cases the use of a derivative seemed particular to only one poet. To reduce the effects of the idiosyncrasies of individual poets and to ensure there were ratios to measure, derivative/base pairs were thus chosen based on the following two criteria: (1) the derivative and/or base occurred in at least three poetic texts; and (2) the derivative had a corresponding attested base form in one of the major historical dictionaries. Criterion (1) unfortunately could not be satisfied in all cases to meet a quota of twelve, especially for the suffix *-age*. Hence, the derivatives *possibilitie*, *solempnitee*, *cosynage*, *costage*, *dotage*, *baronage*, *pilgrimage*, *usage*, and *vassellage*, which all met criterion (2), were also included. All inflected forms of a base were included in the token counts, but not other derived forms (e.g., for *servage* the verbs *serveth* and *served* were counted but not *servyse* or *servaunt*). The count was also potentially conservative in that it included only those occurrences of bases that shared a semantic relationship with the derivative—thus, for *lynage* the base *lyn*₁ ‘familial line’ was counted while *lyn*₂ ‘line of compass/direction’ was not.¹³⁴

Tables 5.3a-d below present the base-derivative ratios for each suffix. Within each chart the ratios are ranked from highest to lowest, with a bold line separating those derivatives with ratios greater than one from those with ratios less than one and greater than or equal to zero. Lexemes above the line are considered the most likely to be

¹³⁴ As expected, spelling variation in ME proved to be one limitation of this study. While I cannot claim to have produced an exhaustive count of all occurrences of lexical bases in the corpus, I employed wild card searches and expected spelling variations into the search strings as much as possible (e.g., *dark* and *derknesse* could be captured by <d*rk*>, both <god*> and <good*> were used to retrieve *good* and *goodness*, etc.)

decomposed into morphological units by readers/listeners; those below the line are the most likely to be processed as whole words.

-NESS	Base/Derivative Totals	Ratio Values
goodnesse	772/16	48.3
derknesse	49/5	9.80
worthynesse	286/41	6.98
gladnesse	232/43	5.40
clennesse	61/12	5.08
doubleness	39/9	4.33
mekenesse	29/9	3.22
bitternesse	19/10	1.90
ydelnesse	34/28	1.21
hevynesse	18/32	0.563
ryghtwisnesse	1/20	0.050
soothfastnesse	0/17	0

Table 5.3a: Base-derivative ratios for *-ness*

-ITE	Base/Derivative Totals	Ratio Values
diversitee	76/9	8.44
possibilittee	7/2	3.50
benignitee	33/12	2.75
scarsete	8/3	2.67
moralitee	9/4	2.25
solempnitee	8/10	0.800
liberalitee	5/7	0.714
virginittee	11/22	0.500
chastitee	14/38	0.368
auctoritee	3/23	0.130
adversitee	1/36	0.028
prosperitee	0/34	0

Table 5.3b: Base-derivative ratios for *-ite*

-AGE	Base/Derivative Totals	Ratio Values
cariage	21/1	21.0
servage	172/13	13.2
usage	51/4	12.8
passage	186/18	10.3
cosynage	32/6	5.33
costage	10/5	2.00
pilgrimage	3/11	0.273
lynage	10/38	0.263
dotage	1/5	0.200
mariage	5/65	0.077
baronage	0/3	0
vassellage	0/1	0

Table 5.3c: Base-derivative ratios for *-age*

-CION	Base/Derivative Totals	Ratio Values
multiplicacion	18/3	6.00
dampnacion	18/4	4.50
destruccion	39/18	2.17
correccion	12/10	1.20
entencion	24/20	1.20
division	22/19	1.16
ocupacion	5/8	0.625
disposicion	13/26	0.500
conclusion	26/58	0.448
ymaginacion	6/21	0.286
presumpcion	2/9	0.222
confusion	2/17	0.118

Table 5.3d: Base-derivative ratios for *-cion*

These data confirm intuitions that *-ness* would be the most likely candidate in this group to exhibit a number of high base/derivative ratios for different lexemes—in other words, that it would be the suffix most likely to be perceived as a constituent of decomposable lexemes. It not only has the highest range of scores, with *goodnesse*

showing a ratio of 48.3 and the majority of lexemes scoring above 3. It also has only three of the twelve derivatives sampled with scores less than one, with two of those words being relatively old words in the language such as *ryghtwisnesse* and *soothfastnesse*. The sample provides evidence that, in terms of reader/listener perception, *-ness* was likely seen as a productive unit in courtly poetic discourse from this period.

Scores for the other lexemes suggest more weakly perceived productivities. After *-ness*, the next highest scoring suffix seems to be *-age*, with 5 of the 12 lexemes scoring above five. Most of the high scoring *-age* lexemes are deverbal, while the less decomposable forms tend to be denominal. It may be possible that the deverbal pattern was contributing more to the perceived productivity of the suffix in this period, but this hypothesis would need to be tested by further analyses of ratios in other registers.

Despite several high-scoring lexemes, it should be noted that many of the frequently occurring lexemes identified in this study would have had decomposability scores of zero because the *-age* derivatives have no attested stems: e.g., *avantage*, *heritage*, *viage*. Any claims of productivity for this affix in this period, such those expressed in Burnley (1992), should be tempered by an acknowledgement that many of its most frequent forms were used without accompanying bases.

The suffixes *-ite* and *-cion* have the overall lowest scores, though several lexemes such as *diversitee*, *multiplicacion*, and *dampnacion* have values above four. Like *-age*, many of the *-ite* lexemes do not even qualify for the base/derivative analysis because there were no attested bases in the period (e.g., *charite*, *dignite*, *nativite*, *quantite*). And many of the *-cion* lexemes, especially those corresponding to verbs ending in *-ate* (e.g., *demonstracion*, *generacion*, *operacion*), did not have attested bases before the sixteenth

century. In fact, as the data above indicate, it is likely that other subclasses of *-cion* derivatives such as the *divide/division* and *damn/damnacion* patterns were the initial types of derivatives to increase the suffix's perceived productivity. If these sorts of values can be corroborated in other fifteenth-century registers, then these base/derivative ratios may have reinforced the possible decomposition of the *-ate* types in later generations (specifically in the sixteenth century). In other words, speakers may have perceived words such as *demonstrate* not as a borrowing but as a justifiably English back-formation of *demonstration*.¹³⁵

The overall analysis in this subsection is limited by the fact that a large number of derivatives either had no attested bases in the period or occurred too infrequently in the corpus to be measured. But the most valuable aspect of this sort of study—which applies contemporary morphological theory and analysis to diachronic questions—is its specific identification of the lexemes that were most likely to contribute to the perceived productivity of each suffix in a particular register. The base/derivative ratios of relatively frequent lexemes within these poems, such as *diversitee*, *benignitee*, *servage*, *passage*, *destruction*, and *entencion*, would have helped to construct readers' and listeners' perception that these affixes may have been productive units in English. To build stronger conclusions about the usefulness of base/derivative ratios as measures of diachronic variation in suffixal productivity, Chapter 5 presents a more comprehensive analysis of base/derivative ratios within other registers from the mid-fourteenth to mid-sixteenth centuries.

¹³⁵ It is impossible to know whether speakers were using *-ate* verbs initially as borrowings or as back-formations. At the same time, it is intriguing to consider that specific base/derivative pairs such as *damn/damnacion* may have led the way for later speakers to back-form from words such as *demonstration*.

5.4.3 Lexical Diversity and Semantic Motivations

To complement the preceding quantitative analyses of type frequencies, this section provides a qualitative analysis of the different suffix types employed by the four poets in this study. The analysis finds that many of the derivatives of each suffix inhabit particular lexical fields, and that the use of derivatives from specific discourses suggests some of the semantic motivations for the poets' employment of these particular derivatives. To assess the relative productivities and potential semantic equivalences of different suffixes, it also takes account of hybrid formations and competing forms. In addition to serving as a descriptive overview of the semantic classes of the derivations used in these poetic works, the section also establishes for each suffix the lexical fields which contributed most to its usage in this type of poetry.

Perhaps unsurprisingly, Christian terminology supplies a substantial number of derivations, both native and borrowed, in the corpus. Many *-ness* derivatives in all four texts, for example, have religious valences; they are typically nominalizations of adjectives connoting virtues or vices. Examples include *unkindnesse*, *wikkidnesse*, *drunkennesse*, *ydelnesse*, *lustynesse*, *Hethenesse*, *unbuxomnesse*, *unclennesse*, *clennesse*, *goodnesse*, *ryhtwisnesse*, *holsumnesse*, *meknesse*, *holinesse*, *sobrenesse*. But Chaucer's derivations include some more innovative forms that do not signify religion, such as *newfangelnesse* and *mazednesse*. Other than a single example with *-age*, all other hybrids formations found in this study were formed with *-ness*, including *buxomnesse* (Gower, Hoccleve), *pitousnesse* (Gower), *mazednesse* (Chaucer), *likerousnesse* (Chaucer), *doubleness* (Lydgate, Chaucer).

Derivatives with *-ite* are also typically taken from religious discourse (*charite*, *virginite*, *Trinitee*, *nativite*, *prodegalite*, *humylitee*, *Cristyenytee*, *benyngnite*). But they also include traits and general characteristics without religious denotations (*diversite*, *femynynytee*, *prolixitee*, *notabilitee*, *curiosite*, *sensibilite*, *quanyte*). When the *-ness* and *-ite* data were compared, two pairs of genuinely competing lexemes were identified: (1) *scarsetee* (Chaucer, Hoccleve) v. *skarsnesse* (Gower); and (2) *chastite* vs. *chaastnesse* (Chaucer). There seem to be no apparent denotative or connotative differences, so these lexemes were perhaps chosen because of prosodic differences (i.e., the number of syllables in each competing form).

Lexemes with *-age* come from a variety of discourses. Some signify taxes and other monetary matters (*costage*, *taillage*, *arrerage*). Others describe various dwellings (*herbergage*, *messuage*), or words associated with travel by water (*rivage*, *lodemenage*). Many denote collectives, either related to family (*cousinage*, *heritage*, *marriage*) or feudalism (*baronage*, *vassellage*, *servage*, *truage*). There is one hybrid form, *lodemenage*, but all other *-age* lexemes are based on borrowed word stock.

Lexemes in *-cion* are far more varied than lexemes with the other endings, with between two to three times as many different *-cion* derivatives as there are *-ity* or *-age* types for all four poets. Part of this rich lexical diversity must have been due to the number of discourses from which *-cion* formations were drawn. Some observable lexical sets in the data are listed in Table 5.4 below:

	Chaucer	Gower	Hoccleve	Lydgate
Religious terms	savacioun absolucion redempcion persecucion dampnacion	justificacion salvacion devocion absolucion contricioun	savacioun dampnacioun fornicacioun dileccioun resurreccioun	perfeccion devocioun
Legal terms	cavillacion jurisdiccion	deputacion substitucion constitucion excusacioun	probacioun abusion excusacioun	iurisdiccion accusacion collusion
Scholarly/ Clerical terms	deliberacioun meditacioun	consideracion meditacioun enformacion	significacion contradiccion	demonstracion interpretacion
Scientific terms	declynacion calcinacion albificacion citrinacion	sublimacion calcinacion fixacion	n/a	calculacion computacion

Table 5.4: Examples of *-cion* lexemes from different lexical fields

Of course, these lexical fields do overlap. *Deliberacioun* has legal valences, *meditacioun* has religious meanings, etc. From a morpho-semantic point of view, a word ending in *-cion* is particularly useful for a poet because it is a nominalization of an action, resulting in one word of a few syllables. By using *-cion* derivatives, poets can convey processes and actions compactly and synthetically when needed, rather than relying on longer paraphrases. Specific examples of such poetic motivations will be qualitatively explored later in this chapter.

Besides the two competing pairs of *-ness* and *-ite*, the only other potentially competing pair of forms in this study was *perfytnesse* (Lydgate) v. *perfeccion* (all 4 poets). The latter derivative was the more frequent of the two. It is possible these derivatives were synonymous, though in Lydgate there appears to be a shade of difference in meaning made clear in context:

(5.2) A man him self so to governe,
And for to do hys bysy peyne,
For to acheve and atteyne
Vnto so high perfeccion

(5.3) For no man lyst now to tourne
To Vertu nor to perfytnesse,
But to delyt and ydelnesse.

It may have been possible to substitute either derivative in each example. However, the first usage emphasizes that *perfeccion* is a result of achievable action, while the second example highlights *perfytnesse* as an abstract quality man can “tourne” to rather than create through his own agency. Lydgate’s strategic choice of *-cion* and *-ness* derivatives in this example reveals some differentiation in the semantic functions of these suffixes, the former signifying the result of human action and the latter indicating an abstract idealization outside of human experience.¹³⁶

Overall, a qualitative analysis of lexical types confirms that there were few competing native and derived forms and only one hybrid of type Germanic base + Romance suffix. Much like the data in the Grocers and Goldsmiths records in Chapter 2, the results from the poetry study find that only *-ness* and *-age* occur in hybrids, while *-cion* and *-ite* appear only on Romance bases. These data indicate that *-ness* has the

¹³⁶ Unfortunately, it was impossible to test whether or not there was a consistent distinction between these lexemes elsewhere in Lydgate, for there were no other occurrences of these derivatives within the text.

widest range of productivity and that *-cion* and *-ite* are restricted to specific subsets of borrowings from particular lexical fields. The suffix *-age* is mostly restricted to borrowed bases, though it can productively attach to at least one native stem (in *lodemenage*).

Moreover, the analysis in this section identifies the lexical fields that these poets drew upon when using different borrowings ending in *-cion*, *-age*, and *-ite*. While these fields can be identified by inspecting lexemes in the *MED* and *OED* alone, such a study does not reveal any information regarding actual patterns of usage—i.e., the specific lexical fields used in particular genres such as court poetry. By considering the primary fields used for each suffix, one may draw a somewhat facile conclusion: the reliance on these fields provides evidence for the semantic motivations for the use of different suffixes. For example, it seems easy (and perhaps tautological) to claim that because many of the poets used a number of religious lexemes ending in *-ite* and *-cion*, that the use of derivatives of these types was semantically motivated by the poets' desire to express religious themes in their poetry. While this supposition is likely true (though uncontroversial), it is possible to generate a more nuanced account of the semantic motivations for the use of these suffixes in verse by inspecting the data more closely. Consider the following list, which itemizes those lexemes for each suffix type which occurred in the work of all four poets:

- ity:** *adversite, auctorite, chastite, dignite, diversite, equite, felicite, humilite, nativite, prosperite, superfluite, virginite*
- age:** *avantage, corage, heritage, langage, lynage, servage, viage*
- cion:** *affeccion, conclusion, condicion, confusion, corrupcion, destruccion, devocion, discrecion, disposicion, eleccion, entencion, mencion, ocupacion, perfeccion, possession, presumpcioun, question, subieccion*

This list catalogues the most distributed derivatives in the corpus. Unsurprisingly, many of the words ending in *-ite* and *-cion* come from religious lexical fields. This may indicate nothing more than the fact that all four medieval poems treated religious themes in great detail. But note that the majority of the most broadly disseminated *-cion* derivatives are terms denoting cognitive processes, including reasoning (*conclusion*, *confusion*, *discrecion*, *entencion*, *question*) and affect (*affeccion*, *disposicion*). Legal and scientific terms do not appear to be the most distributed types of *-cion* derivatives within the corpus. These usage patterns likely reflect the fact that all four poets relied on meditative and rhetorically aware language when treating a variety of themes—religious or otherwise.

Thus, when assessing semantic motivations for lexical usage of these *-cion* derivatives, it is important to supplement a simple identification of semantic categories with a more nuanced account of the most generally distributed forms in the corpus. This additional information allows one to determine which categories were most likely to contribute to the use of different derivatives. In the case of *-cion*, it turns out that derivatives signifying cognitive processes were more widely employed than those denoting religious actions. And no terms from scientific or legal fields were used by all four poets. However, because the corpus is relatively small, one must not assume that such a distribution is necessarily typical of all ME poetry. More research on this matter is needed.

Another interesting finding is that the most commonly distributed *-age* derivatives in the poetry corpus do not come from economic discourse. Recall from Chapter 3 that Fleischman (1987) suggests that *-age* derivatives in this period were primarily employed

to denote either economic transactions (such as those fees listed in the ledgers of the Grocers' records) or feudal relationships. In the poetry corpus, the primary semantic field for *-age* is terminology that defines social rank and relationships (*avantage*, *heritage*, *lynage*, *servage*). None of the *-age* lexemes denoting duties or fees were used by all four poets, with the exception of *avantage* signifying a financial advantage (though this was not its only meaning). There is likely a register-specific explanation here, in that these poems often dealt with feudal themes and/or social rank explicitly (e.g., Chaucer's myriad of pilgrims from different estates). While all four poets do address economic concerns, they were far less likely to use specific terms for economic transactions, such as those found in the Grocers' records. It is possible to speculate here that different registers contributed to the development of *-age* in distinct ways during the early fifteenth century: account books were most likely to impact the productivity of *-age* via the use of words for fees and duties, while poems may have been more likely to impact the suffix's perceived transparency via lexemes denoting social rank. Again, however, such speculation can be confirmed only with more research on a wider body of poetry in the period.

Ultimately, by considering the lexical fields of the most diffused derivatives in the corpus, it is thus possible to determine which semantic categories were contributing most to the use and spread of derivations within poetry represented by the corpus: for *-ite*, it was religious terminology expressing virtues and vices; for *-age*, terms denoting social rank and relationships; and for *-cion*, lexemes signifying cognitive processes and, to a lesser extent, religious actions.

5.5 Borrowed Derivatives as End-Rhymes

The preceding sections have presented a quantitative and qualitative analysis of tokens and types—including frequency measures and considerations of semantic fields—in order to assess the relative productivities of different suffixes in the corpus and to identify some of the potential motivations for the use and spread of different types of borrowed derivatives. These measures may be generally applied to any text type in order to gain further insight into the development and perceived productivity of different suffixes. In the remainder of this chapter, the discussion turns to features specific to poetic texts. These features, such as positional distributions within the poetic line and couplet structures, provide valuable information about morphological processes. By analyzing these genre-specific qualities, I locate further evidence for the differing motivations for the use of each suffix types as well as the relative levels of naturalization and perceived productivity for different suffixes.

5.5.1 Positional Distributions

While not the first poets to rely primarily on end rhyme, Chaucer and Gower were certainly two of the most influential figures in popularizing rhymed verse forms in the late fourteenth century, with Hoccleve and Lydgate maintaining this practice into the following century. In a shift away from native English alliterative traditions, Chaucer experimented with different rhyme schemes in the *Canterbury Tales*, from couplets to rhyme royal. Hoccleve too preferred rhyme royal for the *Regement*, while Gower in the *Confessio* and Lydgate in *Reason* relied strictly on couplets. Several scholars have postulated why these and other poets fed into the movement adopting end rhyme over

alliteration as the primary rhyming device.¹³⁷ Harmon (1997) emphasizes the morphosyntactic changes from Old to Middle English. The increasingly analytic nature of Middle English created more openness to verse forms with different prosodies and rhyme schemes. In his studies of “Pearl,” which mixes alliteration and end-rhyme, Wimsatt (1996: 14) discovers that the poetic skill required to produce end-rhymed verse has a direct effect on the poet’s use of borrowings from other languages:

[A]s the requirements of the prosody increase, so does the proportion of words of non-English etymology increase. We may hypothesize that the stressed words in Pearl that involve no rhyme, neither alliteration nor end-rhyme, represent the most natural word choice of the poet. Alliteration (initial rhyme), involving a single sound, requires a somewhat larger exertion of artistry. And end-rhyme, consisting of a sequence of vowels and consonants, requires still more. Consequently, the use of both French and Norse words increases as the artistic requirements increase.

Wimsatt stresses the fact that by using end rhyme, the Middle English poet is compelled to reach into non-native word stock. He must find enough varied vowel and consonant sequences in order to secure both the sound and sense of the versification.

Similarly, the present study finds that when borrowed derivatives are employed in Middle English rhymed verse, they appear primarily in the end rhyme structures of the poem. In other words, while these Latinate and French derivatives certainly have important semantic and thematic functions, they primarily serve as building blocks within the poetic architecture of the poems themselves.¹³⁸

¹³⁷ I am grateful to Baba Brinkman, whose unpublished paper on the history of rhyme in English included a helpful bibliography. Retrieved from <<http://www.babasword.com/writing/essays/historyofrhyme.pdf>>

¹³⁸ Another variable to consider here is the effect of translation on the use of derivatives in English texts. Translated portions of poems may have used higher frequencies of borrowed derivatives than non-translated ones. And there may have been motivation to keep the original words in end-rhyme position of

To design a study of this phenomenon, I conducted a count of the positional occurrences of *-ness*, *-ite*, *-age*, and *-cion* in the poetry corpus. Position was considered a binary variable: derivatives were classified as either “end-rhyme” or “non-end-rhyme.” Derivatives were counted within each individual poetic work in order to establish ranges for the percentages of derivatives of each suffix type occurring as end-rhymes. Separation of poets also helped to ensure that no single poet was too idiosyncratic in his derivational usage. Tables 5.5a-5.5d below provide the total token counts and percentages of tokens in end-rhyme positions for each suffix type within each poetic work:

Chaucer	Total # Tokens	Total # Tokens in End Rhyme Position	Percentage of Use in End Rhyme Position
<i>-ness</i>	216	148	68.5%
<i>-ity</i>	210	177	84.3%
<i>-age</i>	208	149	71.6%
<i>-cion</i>	331	286	86.4%

Table 5.5a: End-rhyme percentages for Chaucer

Gower	Total # Tokens	Total # Tokens in End Rhyme Position	Percentage of Use in End Rhyme Position
<i>-ness</i>	197	135	68.5%
<i>-ity</i>	128	97	75.8%
<i>-age</i>	272	210	77.2%
<i>-cion</i>	372	335	90.1%

Table 5.5b: End-rhyme percentages for Gower

the translations if the English poet was intentionally creating a translation structurally close to the original. I did not consider this variable in this study, though I readily acknowledge that it, too, may have influenced the frequent use of derivations as end-rhymes in court poetry.

Hoccleve	Total # Tokens	Total # Tokens in End Rhyme Position	Percentage of Use in End Rhyme Position
<i>-ness</i>	177	128	72.3%
<i>-ity</i>	98	62	63.3%
<i>-age</i>	52	35	67.3%
<i>-cion</i>	129	109	84.5%

Table 5.5c: End-rhyme percentages for Hoccleve

Lydgate	Total # Tokens	Total # Tokens in End Rhyme Position	Percentage of Use in End Rhyme Position
<i>-ness</i>	203	159	78.3%
<i>-ity</i>	60	56	93.3%
<i>-age</i>	76	69	90.8%
<i>-cion</i>	176	172	97.7%

Table 5.5d: End-rhyme percentages for Lydgate

To test for statistically significant differences between two poets' positional use of the same suffix and between two different suffixes used by the same poet, I ran these numbers through a binary logistic regression.¹³⁹ Interestingly, there are no statistically significant differences in the four poets' use of *-ness* as an end-rhyme. The suffix is used as an end-rhyme in percentages ranging from 68.5% to 78.3% of the time. The lack of significant variation may be due to the fact that this was a native derivation type that would have been less marked for the sorts of aesthetic considerations discovered in Wimsatt's study of borrowings. If so, then it is possible that this is a normal distribution

¹³⁹ The statistical software SPSS was used to produce p-values for all pair-wise comparisons. Position was considered the dependent variable, with poet (text) and suffix type the independent variables. A main-effects model (without interactions between independent variables) was attempted first, but was later replaced with a model that included interactions after the latter was determined to be a better fit for these data. When interactions were added, it produced a saturated model. While not a perfect fit, the model with poet and suffix interactions had significantly less deviance than the model without interactions. Because each regression produced six distinct p-values, I applied a Bonferroni adjustment to reduce measurement errors and evaluate statistical significance more strictly.

range for the use of naturalized, open-class, morphologically complex words as end-rhymes. Further research of the positional occurrences of other lexemes (e.g., non-derived native nominals) is needed to confirm this hypothesis. But for purposes of comparison between native and borrowed lexis in the present study, this range for *-ness* can be tentatively assumed to represent positional distributions of unmarked derivatives.

Among the four poets, only Lydgate's use of *-age* is significantly different. He employs derivatives with this affix over 90% of the time as end-rhymes, while the other poets do so between 67.3% and 77.2% of the time. Thus, in most of the corpus *-age* is distributed similarly to *-ness*, with the exception of Lydgate, who uses *-age* significantly more often as an end-rhyme. The results for *-ite* are similarly mixed. Chaucer and Lydgate employ *-ite* a significantly high number of times as an end-rhyme (84.3% and 93.3%, respectively), while Gower and Hoccleve use it within the same range as *-ness*.

The suffix most evidently marked for use as an end-rhyme in this study is *-cion*, which all four poets used in percentages ranging from 84.5% (Hoccleve) to as high as 97.7% (Lydgate). In general, *-cion* is far more likely to occur as an end-rhyme than *-ness*.¹⁴⁰ In contrast, there is no significant difference between the use of *-age* and *-ness* as an end-rhyme for any of the poets. The suffix *-ite* is used significantly more than *-ness* only in Chaucer, though Lydgate is a borderline case.¹⁴¹ In comparing the three borrowed affixes with one another, *-ite* and *-age* are used similarly as end-rhymes in all poets but Chaucer, who uses *-ite* almost 13% more often than *-age* at the end of poetic

¹⁴⁰ Although the difference between Hoccleve's use of *-cion* and *-ness* did not qualify for statistical significance under the Bonferroni adjustment, it was a borderline case: the p-value 0.013 was barely more than the qualifying score of 0.01. The actual percentages for Hoccleve, 84.5% (*-cion*) and 72.3% (*-ness*), seem sufficiently different to consider this difference significant.

¹⁴¹ See preceding footnote, since the p-value there is also 0.013 compared to a Bonferroni-adjusted qualifying score of 0.010.

lines. For all poets, *-cion* is consistently used more often than *-age* and *-ite* as an end-rhyme, even when percentages for *-age* and *-ite* are already significantly high.

Overall, this statistical analysis of the position of derivatives in Middle English rhymed poetry reveals that poets were highly motivated to use *-cion* derivatives because they made for useful end-rhymes. Some poets were also motivated to use *-ite* in significantly high numbers as an end-rhyme, though such motivation was weaker than that for *-cion*. And even though *-age* derivatives could be marked as useful end-rhymes (e.g., in Lydgate), they generally were used at the same rates as *-ness* derivatives. If these distributions more generally represent those found in most Middle English rhymed poetry, then this evidence suggests that *-age* was the most naturalized suffix since it most closely follows native patterns of distribution. In contrast, *-cion* was the least naturalized form, with *-ite* somewhere between *-age* and *-cion* on the naturalization scale. This hypothesis deserves closer scrutiny.

5.5.2 Naturalization

There is an interesting corollary to Wimsatt's study: since concerns about aesthetic structure dictate poets' positional distribution of lexemes in their poems, it should be possible to examine those distributions to gain more insight into how those poets were differentiating the available lexicon. Specifically, if elements perceived as foreign are far more likely to appear as end-rhymes than in other positions, then a possible corollary is that lexemes appearing in non-end-rhyme position were likely more naturalized than those that appeared only as end-rhymes. This section provides a qualitative and quantitative account of the positional occurrences of the various borrowed

lexeme types for each suffix in order to identify derivations that may have seemed less marked as foreign elements in the lexicon. To nuance claims made about relative levels of naturalization, it also identifies the lexical fields of each suffix type that appear to be the most naturalized. Ultimately, the quantitative analysis of the aggregate of lexemes suggests that *-age* is significantly more naturalized than *-ity* or *-cion*.¹⁴²

A complete list of lexemes that occur in non-end-rhyme position in the corpus appears below.

-age: *avantage, beverage, brocage, corage, costage, cosynage, damage, dotage, gaignage, herbergage, heritage, hostage, langage, lynage, mariage, message, passage, pilgrimage, plumage, servage, taillage, tarage, truage, usage, viage, village, visage*

-ite: *adversite, auctorite, charite, chastite, dignite, diversite, equite, felicite, humilite, liberalite, magnanimite, moralite, necessite, privetee, prosperite, quantite, sensualite, superfluite, tranquilite, vanite, virginite*

-cion: *ablucion, accion, affeccion, avision, collacion, compassion, complexion, conclusion, condicion, confeccion, confusion, consideracion, constellacion, correccion, destruccion, devocion, discrecion, disposicion, division, entencion, equacion, exalacion, excepcion, execucion, extorcion, formacion, habitacion, illusion, impression, mediacion, mencion, mutacion, nacion, oppression, passion, perfeccion, persecucion, porcion, possession, presumpcion, proteccion, question, remission, repleccion, reputacion, revelacion, salutacion, savacion, solucion, subjeccion, tribulacion, ymaginacion*

Many of the above *-age* lexemes signify economic value (*brocage, costage, gaignage, taillage, truage*). They may have been seen as more naturalized than terms such as

¹⁴² It is also possible to consider naturalization from a phonological perspective--namely, to examine the stress patterns of derivatives as indicated in verse. This study did not consider this variable, however, since metrical choices may have influenced the placement of stress, particularly in borrowings that might have had alternate pronunciations in the period (e.g., Anglocized *mérciable* vs. French *merciâble*). Chaucer tends to prefer the French pattern in his verse. But was this due to metrical considerations, or did it reflect his everyday English pronunciation of all of these lexemes? The answer is unknowable. In any case, one should not automatically assume that because Chaucer generally applied French stress patterns to borrowed derivations that all of these borrowings were automatically and equally considered unnaturalized in English.

arrerage, which appears only as an end rhyme. But why would *taillage* necessarily be more naturalized than *arrerage*? Part of the reason may be due to time-depth; the *MED* states that *taillage* entered the language as early as 1300, while *arrerage* does not appear until later in the fourteenth century. There does seem to be a general tendency for older lexemes in the language to appear in non-end-rhyme position, though this does not consistently hold true. For the *-age* derivatives, for example, lexemes such as *avantage*, *beverage*, *hostage*, *langage*, *mariage*, *message*, *passage*, *servage*, and *truage* are attested as early as 1300. But a few *-age* lexemes that appear as non-end-rhymes, including *brocage*, *dotage*, *gainage*, *plumage*, and *tarage*, are not attested until the late fourteenth or early fifteenth centuries. In fact, many of them are first attested in the work of the poets in this study. And some of the lexemes that appear only as end-rhymes (*barnage*, *rivage*) are attested as early as 1300. Time-depth does not correlate with line position in the case of every derivative, though older words, in general, appear in non-end-rhyme positions while newer ones (e.g., *tapinage*, *cavillacion*) tend to appear only as end-rhymes.

Moreover, time-depth, as measured by first attestations, may be a somewhat misleading variable at times. Two of the more frequent *-cion* forms used by all four poets, *occupacion* and *eleccion*, appear only as end-rhymes. Glancing at their first attestation dates, 1300 and 1325, it may seem somewhat surprising that these lexemes are used multiple times by poets only in end-rhyme position. However, the citation entries reveal that each of these lexemes is first cited in only one or two contexts early in the fourteenth century. They are not cited again until the end of the century, when they suddenly appear in a number of contexts. Even though one might claim, based on first

attestation dates, that these lexemes have “been in the language” for almost a century by the time the poets use them, there is no evidence from dictionaries alone that speakers were regularly using them throughout the period. The effect of time-depth on naturalization likely depended on how frequently lexemes were used after they were first attested, and perhaps how widespread they were in the language after their first uses. The most naturalized forms are likely those words which exhibit frequent usage in a number of contexts over a significant length of time. This is an area where corpus studies can work fruitfully with historical dictionaries—to characterize more fully the relationship between time-depth, frequency, and naturalization—but an in-depth investigation of this topic is outside the scope of this dissertation.

Thus, time of entry into the language cannot, in and of itself, predict which forms will become more or less naturalized. Frequency of use in the period, including in oral contexts unknowable to modern scholars, was also likely to have had an effect.¹⁴³ Many of the other *-age* derivatives above are certainly some of the more frequently used lexemes ending with this suffix (*corage, langage, message, passage*). Some communities, such as the Grocers described in Chapter 3, were using many of the *-age* forms that signified economic values with some frequency in their writing. But since all of the economic *-age* lexemes, other than *costage*, appear infrequently in the poetic corpus, the reason for their appearance as potentially more naturalized forms remains an open question.

If one assumes that poetic position does correlate with naturalization, then it is possible to examine certain lexical patterns among the most and least naturalized

¹⁴³ For more on the relationship between frequency, time-depth, and naturalization, see section 6.5.1 on glossing and naturalization in medieval medical texts.

lexemes. The clear majority of the more naturalized *-ite* forms are words denoting values and vices (*charite, chastite, dignite, diversite, equite, felicite, humilite, liberalite, magnanimite, moralite, sensualite, superfluite, tranquilite, vanite, virginite*). Their use can be explained by the fact that Christian morality was a prominent theme in all of the four works of this corpus. Moreover, the positional distribution does distinguish these words from more marked lexemes, such as *prolixite* and *pussilamite*, which appear only as end rhymes. So the list above may indicate those *-ite* forms which had been most naturalized in vernacular medieval religious discourse in this period.

The most naturalized lexemes ending in *-cion* come from a variety of discourses, though the majority come from religious and scholarly (cognitive) lexical fields. Interestingly, according to the positional distributions in the poems, there does seem to be some differentiation of lexemes within specific discourses. The terms *ablution, constellacion, and equacion* appear in non-end rhyme position, while the majority of scientific and mathematical terms appear only as end rhymes (e.g., *albificacion, calcinacion, calculacion, citrinacion, computacion*).¹⁴⁴ Similarly, there seems to be only one legal term (*extorcion*) that appears in non-end-rhyme position. The remaining terms (e.g., *cavillacion, jurisdiccion, deputacion, excusacion, probacioun, abusion, accusasion, collusion*) occur only at the ends of poetic lines. Thus, according to these data, it can be

¹⁴⁴ Again, time depth in the language cannot explain this difference, since all of these words have their first attestations in either Chaucer, Gower, or Lydgate. Moreover, it should be noted that most of these lexemes occur exactly once in the corpus. Thus, while it seems significant that these items *as a set* tend to occur only line-finally, this observation must be tempered by the fact that individual lexemes from this lexical field are occurring at low frequencies. But looking at the positional tendencies of the lexical field as a whole, the data suggest that a good portion of *-cion* borrowings from Latinate scientific discourse may have been perceived as less naturalized than a few items such as *constellacion*.

speculated that derived lexemes from scientific and legal discourses were generally less naturalized than those from religious and clerical lexical fields.¹⁴⁵

When calculating the percentage of lexeme types that appear only as end-rhymes in the corpus, it becomes evident that there are significant differences in the naturalization among the three borrowed suffix types. Before examining these data, one might hypothesize that based on the productivity patterns in the ME period as outlined in Dalton-Puffer (1996), Lloyd (2005), Anderson (2000) and earlier chapters in this dissertation, *-age* would be more likely to be naturalized than *-ity* and *-cion*. This hypothesis is grounded in the fact that *-age* has been shown to produce a significant number of hybrid forms in ME, while *-ity* and *-cion* have not. To explore the distributions of naturalized forms as evidenced in their positions within poetic lines, Table 5.6 provides a row-by-row comparison of the percentages of lexemes of each type that appear only in end-rhyme position:

	Total Number Distinct Types	Total Number of Distinct Types Appearing Only as End Rhymes	Percentage of Types Appearing Only as End Rhymes
<i>-age</i>	44	17	38.6%
<i>-ite</i>	55	34	61.8%
<i>-cion</i>	201	149	74.1%

Table 5.6: Percentages of types appearing only in end-rhyme position for each suffix

According to the chart, *-age* lexemes are the least likely to appear exclusively as end-rhymes in the poetic corpus. Derivatives ending in *-ite* and *-cion*, on the other hand, are much more likely to occur only at the ends of poetic lines. More specifically, the

¹⁴⁵ One might also expect that the lexical field of religion would generate higher numbers of naturalized forms than other fields (such as science or law), perhaps because the lexemes were used more frequently in this discourse, and/or a wider range of speakers were exposed to them on a regular basis (e.g., attendance at weekly sermons, viewing public performances of mystery or morality plays, etc.).

percentage of *-cion* derivatives appearing only as end-rhymes is approximately twice as much as the percentage of *-age* derivatives. These differences seem to mirror the differences in base/derivative ratios, since *-age* also seemed to have more decomposable lexemes than *-ite* or *-cion*. It also confirms the initial hypothesis that, because *-age* forms produce hybrid forms with native bases while *-ity* and *-cion* do not, the suffix is likely more naturalized than the other two nominals. This pattern seems to hold in a number of genres, including poetry. Ultimately, the data in this section suggest that *-age* derivatives were generally much more naturalized than *-ite* and *-cion*—a result that lends support to Burnley’s (1992) claim that *-age* was “fully assimilated” in this period.

5.5.3 Motivations

There is at least one caveat to the preceding analysis: one should not assume that a derivative is equally likely to occur in every part of a poetic line. The fact that only open class words tend to occur in end rhyme position may inflate the percentages of occurrences of all types of nominals at the ends of lines. In other words, there may have been a structural-grammatical force that compelled poets to place recently borrowed derivations in end-rhyme position before anywhere else. Still, this force would have applied equally to all nominal types, and the data in the preceding subsections make it clear that *-cion* and to a lesser extent *-ite* were used significantly more often as end-rhymes than *-ness*. Moreover, on certain occasions the poets did choose to place derivatives before the end rhyme. In one case, two non-end-rhymed derivatives were placed within the same line:

(5.4) The mayde hath broght men to blisse aboue
The world hath wist what it is worth certeyn
Deuocion of Chastitee to loue
(Chaucer)

The poets clearly had a choice about where to place these derived forms within the poetic line. The percentages for *-cion* and *-ite* in Table 5.5 are so high, and often higher than those for *-ness*, that it seems safe to assume these poets were deliberately placing the majority of them in end-rhyme position.

So what factors were driving this decision to use derivatives predominantly as end-rhymes? The ending *-cion* deserves particular attention since it is the most frequently occurring end-rhyming derivative in this study. Part of the motivation may be prosodic, since *-cion* derivatives are all at least trisyllabic (and most of four or more syllables) and could be placed at the end of lines to create a sequence of iambs. Both *-cion* and *-ite* may have been particularly convenient for poets since they guaranteed final-syllable stress; any time poets wanted to create a masculine rhyme, they had a well of lexemes from which to draw. But this is also true of *-ness* forms with odd numbers of syllables (e.g., *bitternesse*, *worthiness*). Prosody was a likely impetus, but there must have been other motivations driving the high use of *-cion* in final positions.

One possibility is that *-cion* (and to a lesser extent *-ite*) may have signaled a “Latinized” sound in Middle English, particularly when it is accentuated at the ends of verse lines. For example, Lydgate’s frequent use of *-cion* derivatives—97% of which occurred as end-rhymes—may have helped him communicate an aureate style to his readers. Lydgate’s rhyme scheme would have given even more salience to *-cion* derivatives, in turn emphasizing the Latinized sonicity of the suffix. From this

perspective, the positional placement of borrowed derivatives can be considered an additional feature of poetic style in this period.

In some cases, the reader can witness the process of borrowing¹⁴⁶ overtly Latinate derivatives into the vernacular of the poem. In Book 1 of the *Confessio*, for example, Gower first introduces the concept of *presumption*, as a specific form of the sin of pride, in one of his Latin insertions:

(5.5) *Omnia scire putat, set se Presumpcio nescit,
Nec sibi consimilem quem putat esse parem
Qui magis astutus reputat se vincere bellum,
In laqueos Veneris forcius ipse cadit.
Sepe Cupido virum sibi qui presumit amantem
Fallit, et in vacuas spes redit ipsa vias*
(Book 1, b/w ll. 1882 and 1883, my emphasis in underlining)

As signaled in this insertion, presumption will become a primary theme in this section. Gower first translates the Latinate concept of presumption into the noun *surquiderie* in most of the subsequent vernacular verses. But when he comes to the exemplum of Capaneus one hundred lines after this Latin insertion, he brings the vice of presumption into the rhyme scheme itself:

(5.6) And upon such presumpcioun
He held this proude opinioun

By using *presumpcioun* in his vernacular, Gower has made a direct textual link between the Latin and English language portions of his poem. He increases the Latinity of the

¹⁴⁶ Here I am using a slightly different sense of *borrowing* to describe a case in which a poet seems to have taken a lexeme from Latin and anglicized it deliberately within his own text—both for thematic and prosodic reasons. In a more typical linguistic sense, *presumpcioun* is also a borrowing in that its source language is Latin. Gower was clearly an early adopter of this lexeme; the *OED* cites only the *Ancrene Riwle* and *Ayenbite* as earlier citations.

poetic structure since *presumpcioun* has immediately recognizable Latinate valences: it was dragged from Latinate text and embedded into an English rhyme scheme. At the same time, he also naturalizes that borrowing by pairing it with the rhymed and alliterated gloss “proude opinioun,” which consists of a native adjective and a likely more familiar¹⁴⁷ borrowing. As this example suggests, Gower may have been motivated to use a high percentage of *-cion* forms as end rhymes for thematic, etymological, and sonic reasons. Indeed, throughout the *Confessio*, Gower draws attention to the Latinity of his poem through lexical means, emphasizing the connectedness of his poetic narrative to many of his classical sources (e.g., Ovid). It may be possible that his and the other poets’ lexical choices attempted to manage the risks of using the vernacular; the salience of Latinate end rhymes was intended to maintain the prestige of the poems and to remind readers of the poems’ classical resonances and commitment to high-minded Christian themes such as the embrace of virtues and the avoidance of vices.

Another possibility, which was detailed in the previous section on lexical diversity and type frequencies, is that *-cion* forms offered a variety of semantic choices for the Middle English poet since they came from a number of semantic fields (including legal, religious, and scientific discourses). Indeed, there is qualitative evidence that all three borrowed derivatives in this study were used as end-rhymes in order to emphasize certain topics. Since a line break and a rhyme draw emphasis to the final word of a poetic line, poets may have wanted to highlight many of these lexemes for thematic reasons. For example, Chaucer relies on rhymed *-ite* derivatives with Christian valences to emphasize the Wife of Bath’s rejection of idealized notions of feminine sexuality:

¹⁴⁷ I assume *opinion* was more familiar in the period based on frequency: *opinion* occurs roughly twice as often as *presumpcion* in the Corpus of Middle English Prose and Verse. For Gower’s readers, it was likely more familiar as well, since he uses *opinion* eight times compared to only one occurrence of *presumpcion*.

- (5.7) And many a seint sith the world bigan
 Yet lyued they euere in perfit chastitee
 I nyl nat enuye no virginitee
 Lat hem be breed of pured whete seed

Similarly, the verse of her prologue and tale employs many *-age* derivatives as end rhymes signifying social relationships and, in particular, marriage: *mariage*, *costage*, *parage*, *heritage*, *lynage*. These terms were particularly important to emphasize, since one of the primary themes of the prologue and tale is women's sovereignty over their sexuality and relationships.

As observed in Chapter 4's analysis of rhetorical figures in vernacular prose, borrowed derivatives were often used to establish antonymic relationships between lexemes. Middle English poets also employed this pattern in end rhyme position.

Consider the following examples:

- (5.8) Prydē þe noght for no prosperitee,
 Ne heuye þe for non aduersite.
 (Hoccleve)
- (5.9) Whan he withstandeth oure temptacioun
 It is cause of his sauacioun
 (Chaucer)
- (5.10) Ther scholde no corrupcioun
 Engendre upon that unite:
 Bot for ther is diversite
 Withinne himself, he may noght laste
 (Gower)
- (5.11) The hihe almyhti Trinite,
 Which is o god in unite
 (Gower)

Examples (5.8) and (5.10) contrast almost exact antonyms, while (5.9) and (5.11) showcase near antonyms. In fact, (5.11) sets up the seeming contrast *trinite/unite* in order to foreground the paradoxical quality of Christian theism—that the trinity is only “o god.” Such antonymic contrasts occurred most often with *-ite* derivatives in the corpus. Indeed, by foregrounding *-ite* lexemes as end-rhymes in examples (5.10) and (5.11), Gower demonstrates his interest in the struggle between unity and division, which is seen throughout the *Confessio*.

Synonymic relationships between borrowed derivatives were also occasionally foregrounded in end-rhyme position:

(5.12) I put al the surplusage
In thyn ovne eleccion
After thy discrecion,
To chese or leve, sith thow art free
(Lydgate)

(5.13) And if thou were of such lignage,
That thou to me were of parage
(Gower)

And sometimes an end-rhymed derivative was preceded by a synonym that was likely less hard (and more naturalized) than the borrowing:

(5.14) ffirst, he seith, it is better seek to be,
Of a sekenesse or infirmite
(Hoccleve)

(5.15) Vnder the yok of honeste,
In clennesse and chastite
(Chaucer)

In examples (5.14) and (5.15), the poet likely chose to place the borrowing at the end of the line because it was a convenient rhyme that matched the ending desired in the

preceding line. Each borrowing was then paired intralinearly with a near synonym, perhaps because the synonym was a native, less “hard” form. This phenomenon was not frequent in the corpus. But when it did occur, it typically involved *-ite* and *-ness* derivations.

The analysis in this and the preceding two subsections has demonstrated that derivatives ending *-ite* and especially *-cion* were borrowed into vernacular verse primarily for poetic-structural purposes; they were deliberately placed into end rhymes for prosodic, etymological, and semantic/thematic reasons. Derivatives ending in *-age* were also employed as end-rhymes, but with generally less frequency than *-ite* or *-cion*. In some (or perhaps all) cases, the overall intent was to emphasize these borrowings for aesthetic purposes. An intended or unintended effect was to naturalize them into the poetic vernacular, while using them to signal the poems’ overt connections to the source languages. Of course, the most general explanation for the usefulness of all of these derivatives is practical in nature: the lexemes all provide numerous possibilities for creating rhymes—with native words, with other borrowings, or even with each other. The morphological consequences of these different types of rhymes will be discussed in the following subsection.

5.5.4 Salience, Analyzability, and Morphology

In this section, I argue that the decision to place borrowed derivatives primarily in end rhyme positions in Middle English had morphological consequences. Specifically, it increased the salience of these derivatives. And when multiple derivatives were rhymed together, readers and listeners were more easily able to analyze these forms as morphologically complex words with potentially separable suffixes. This type of

salience is particular to the genre, and it supplements the effects on morphological decomposability due to the relative frequencies of bases and their derivatives. This section will lay out a theoretical description of the levels of salience and analyzability encouraged by different patterns of rhyme.

There are three types of rhyming patterns that may potentially impact the analyzability of derivatives: (1) a derivative rhymed with a non-derivative; (2) a derivative rhymed with another derivative with the same ending in non-consecutive poetic lines; and (3) derivatives with the same ending rhymed in a couplet. I hypothesize that the couplet pattern is the most likely rhyme scheme to increase the transparency of affixes. Consider the examples below:

(5.16) He spak touchende of Mariage.
The king knowende his hih lignage
(Gower)

(5.17) Tak Avarice and tak also
The vice of Prodegalite;
Betwen hem Liberalite,
Which is the vertu of Largesse
(Gower)

(5.18) Virginitee is greet perfeccion
And continence eek with deuocion
(Chaucer)

In all of these examples, derivatives of the same ending from the same lexical fields are juxtaposed with one another in the rhyme scheme. In (5.16), Gower pairs two terms denoting familial relations, *Mariage* and *lignage*. From a visual perspective, the proximity of derivatives in this couplet gives them more salience as a connected pair of words. And from an oral perspective, the rhyme creates a sonic link between the two.

The semantic, sonic, and visual connections between these words all help to create a moment of potential morphological reanalysis: specifically, that *-age* may be a detachable part of *Mariage* and *lignage*. Moreover, the availability and textual occurrences of bases *mari* and *lyn* in this poem (and in the period at large) likely aided such analysis of *mariage* into [mari[-age]] and *lignage* into [lin[-age]]. Similarly in examples (5.17) and (5.18), *Prodegalite/Liberalite* and *perfeccion/deuocion* are placed into highly salient positions in the poem. In the former case, *-ite* is potentially analyzable as a suffix attached to stems *Prodegal-* and *Liberal-*, whereas *-cion* may be seen as attached to stems *perfec-* and *devo(c)-*. Even though stems such as *devote* or *prodigal* are not attested in the *OED* until the sixteenth century, the analysis in these examples may have been facilitated by the availability of *liberal* and *perfect* in the Middle English lexicon.¹⁴⁸ In fact, the use of *prodegalite* and *deuocion* in such salient contexts in the fifteenth century and beyond—i.e., whenever they co-occurred with analogous analyzable derivations in poetry, prose, or formal oral contexts—may have eventually helped encourage the use of those stems as regular words in the language.¹⁴⁹

In any case, as demonstrated in the preceding examples, end-rhymed derivatives in a couplet are in a highly salient context that potentially encourages an increased morphological transparency of the endings. The effect is similar to that observed in homoeoptotons in prose (cf. Chapter 4), though perhaps even stronger because of the visual and sonic reinforcement in the lineation and prosody of the poem. A more extreme

¹⁴⁸ The morphological transparency of *-ite*, *-age*, and *-cion* in examples (5.16)-(5.18) was likely aided by the availability of attested bases in the Middle English period. These sorts of examples would have a higher likelihood of decomposability than rhymes such as *corage/viage*, whose derivatives had no accompanying bases in English.

¹⁴⁹ While speculative, this theory would suggest that a process akin to back-formation was one of the sources of the eventual use of words such as *prodegal* and *devote* in English, alongside the more obvious sources (such as direct borrowing).

example of this effect can be found in Gower's scientific borrowings of words ending in *-cion*:

(5.19) Ferst of the distillacion,
Forth with the congelacion,
Solucion, descencion,
And kepe in his entencion
The point of sublimacion,
And forth with calcinacion
Of veray aprobacion
Do that ther be fixacion
(Gower)

This passage is unusual for Gower, in that he rarely repeats the same rhyme in contiguous couplets. He presents this as a set-piece of mostly alchemical terms with the exact same termination, rhyming them with non-scientifically technical lexemes with the same ending (*entencion*, *aprobacion*). And he even folds in a line-medial rhyme with *solucion*. The saturation of *-cion* derivatives strongly compels the reader or listener to perceive the ending as a suffix that can attach to a number of different verbal bases, many of which would have been lesser known to non-alchemists (e.g., *sublime*, *calcine*), but some of which may have been more familiar (e.g., *entend*, *aprove*). In fact, the decomposability of the scientific derivatives was likely facilitated by the inclusion of *entencion*, which has been shown to be one of the decomposable lexemes ending in *-cion* (see Table 5.3d above).

The effect of rhymed couplets on perceived decomposability likely depends on their overall frequency in verse. Among the borrowed derivatives in the corpus, *-cion* exhibits the highest frequency with 294 total couplets. The suffix *-age* has the next highest number with 126. And there are only 25 total couplets with *-ite*. Thus, if the

salience of end-rhymed couplets does impact decomposability of derivatives, the effect would be greatest for *-cion* and the least for *-ite*.

Rhymed derivatives do not always occur in couplets in the corpus. Hoccleve and Chaucer occasionally separate a paired rhyme with an intervening, different rhyme (e.g., the *a* rhymes in rhyme royal, which follow the *ababbcc* pattern). When pairs of derivatives are rhymed in such contexts, they may be slightly less morphologically transparent than those in couplets, simply because the visual or aural distance between derivatives makes the analogous structure between forms less immediately apparent for the reader or listener. Even so, this poetic pattern still makes the derivatives more salient than occurrences in less marked contexts. And it invites the reader to make semantic and structural comparisons between derivatives. Example (5.20) illustrates this possibility:

(5.20) O Sowdanesse roote of Iniquitee
Virago thou Semyrame the secounde
O serpent vnder femynnytee
Lik to the serpent depe in helle ybounde
(Chaucer)

The end rhyme pairs *iniquitee* with *femynnytee*; this pairing emphasizes the contrast between the Sowdanesse's interior and her exterior. Because the rhyme connects the two lexemes to one another, the reader may be able to parse the morphological structures into [iniqu-[itee]] and [femynyn[-ytee]]. The latter may be more easily decomposed since *feminine* was also used in the period. In the former case, the etymological connections between the stem *iniqu-* and *equ-* (cf. *equite*) were likely far more opaque. Example (5.21) presents a similar situation:

(5.21) The gold eek þat for hir redempcioun
Purveyed was, for-ȝaf he vtterly,

In help and increes and promocioun
Of hir wedlok. and whan Iudibal sy . . .
(Hoccleve)

This rhyme is slightly less salient than a couplet, yet *redempcioun* occurs reasonably close enough to *promocioun* to promote potential decomposition. The analyzability might have been aided by the availability of the base *promote* in the period. It occurs three times in Hoccleve, compared to two uses of *promocion*. The base *redeem* is not attested until a little later in the period; the *MED* lists Hoccleve's 1430 usage as the first. But the eventual use of the base (as either a borrowing or a back-formation) may have been encouraged by the increased decomposability of *redempcion* in such contexts.

Example (5.22) presents a context in which *-ite* may have been more transparent because of the end rhyme *humanitee/necessite*, whose stems are both attested in English at that time (i.e., the word *human(e)* and the stem *necess-* in *necesarie*):

(5.22) O noble Markys youre humanitee.
Asseureth vs to yeue vs hardinesse
As ofte as tyme is of necessitee
That we to yow mowe telle oure heuynesse
(Chaucer)

Even more remarkable here is Chaucer's juxtaposition of native and borrowed morphologies; he intermingles *-ness* and *-ite* derivatives in an *abab* pattern. It is possible that Chaucer recognized the similar semantics and morphological structure of the native and borrowed patterns (deadjectival nominalizations, where the base adjective is a general quality or characteristic). But even if he did not, the presence of a very similar but more decomposable native morphological suffix (*-ness*) may have reinforced the transparency of *-itee*.

Not all rhymed derivatives result in a more transparent affix. Consider the following examples:

(5.23) Now herkneth quod the Millere alle and some
But first I make a protestacioun
That I am dronke I knowe it by my soun
(Chaucer)

(5.24) For feere and let hire wympel falle
Nyh to the welle upon therbage.
This Leoun in his wilde rage
A beste, which that he fond oute
(Gower)

In (5.23), Chaucer employs rhymes *protestacioun* with *soun* for a humorous effect. By starting the rhyme with *protestacioun*, he makes the reader expect a continuance of formal register in the remainder of the clause in the subsequent line. Instead, the reader encounters self-aware debauchery, which helps define the Miller's character before he begins his fabliau. Chaucer's placement of this *-cion* form before the line break certainly adds to its salience in the poem. But the fact that it rhymes with *soun* does not make *-cioun* any more transparent. In (5.24), Gower puts *herbage* into the rhyme scheme so that he can foreground *rage*, one of seven deadly sins that serve as a primary focus of the *Confessio*. But like the preceding example, the connection between *herbage* and *rage* does not trigger any recognition of the decomposability of *herbage*. This is largely due to the unanalyzability of *rage*, since detaching *-age* from this word would leave a clear non-stem **r-*.

The qualitative analysis in this subsection has demonstrated the following: while end-rhymes increase the salience of all derivatives placed at the ends of poetic lines, only those derivatives that rhyme with one another become potentially more morphologically transparent in that context. And it is likely that couplets, which visually and/or aurally

juxtapose two different types of derivatives in the same suffix in highly salient and proximate positions, would have increased the transparency of that suffix even more than other rhyming patterns. Based on frequency of occurrence in the corpus, this “couplet effect” would have been greatest for *-cion* and weakest for *-ite*. Furthermore, suffixal analyzability in these rhymed derivatives is reinforced whenever the possible stems of their stems are extant in the language. Because the majority of borrowed derivatives were used in end-rhyme positions, it is possible that rhymed verse in Middle English contributed—at least in small part—to the decomposability of borrowed derivatives and the emergent productivities of suffixes such as *-age*, *-ite*, and *-cion*.

5.6 Conclusions

Presenting a case study of the use of selected nominal suffixes in a sample of Middle English verse, this chapter develops a framework for assessing the naturalization of borrowed derivatives and the perceived productivities of their morphemes in late medieval rhymed poetry. Token frequencies reveal general patterns of use. They do not indicate levels of productivity, but they help identify the texts which were most likely to use different derivative types, as well as the suffix types most likely to be exposed to readers and listeners within these texts. Lexical density scores, which measure the frequencies of a varied number of derivative types standardized to a particular word count, allow for comparisons between texts and between suffix types. Lower lexical density scores suggest forms that are more likely to be opaque for readers of a particular text. Higher scores suggest the possibility of the increased decomposability of lexemes that are newly encountered by language users; or, in a connectionist framework, higher scores reinforce representations of decomposable derivatives that are already mentally

stored. But lexical density scores are a secondary rather than primary measure of productivity. They are a supplement to base/derivative ratios, which identify the specific lexeme types most likely to affect perceived decomposability. They also provide an overall sense of an affix's productivity within a particular register or community. The salience and potential decomposability of derivatives is also impacted by the juxtaposition of lexemes of the same suffix type in rhyming couplets. And an analysis of derivatives that occur in non-end-rhyme position within the poetic line distinguishes between more and less naturalized forms, providing a way to rank suffixes by their overall level of naturalization in the language.

In applying this framework, the following conclusions can be drawn regarding borrowed suffixes in the Middle English rhymed verse represented in my corpus:

- (1) In terms of overall tokens, *-cion* is by far the most frequently used borrowed suffix in the work of all four poets. In Chaucer and Gower, it is even more frequently used than native suffix *-ness*. Moreover, it exhibits the broadest range of types among all suffixes for all poets in the study. Even so, it is the least naturalized suffix, and base-derivative ratios indicate that only a few of its widely used derivatives were decomposable. It was likely perceived as one of the least productive borrowed suffixes, though its highly frequent use in rhymed couplets might have increased its salience and decomposability in poetic contexts.
- (2) *-age* is used much less frequently than *-cion*, and it has the lowest lexical density scores (i.e., the narrowest range of unique derivatives) out of all suffixes in the study. And yet, it is by far the most naturalized of the borrowed derivatives. As evidenced in its base-derivative ratios, it also has slightly more perceived productivity than *-ite* or *-cion*, though much less than *-ness*. This evidence corroborates Burnley's (1992) claim that *-age* was assimilated into the language at this time—at least in terms of poetic language. It also suggests that the naturalization of derivational types does not always correlate with every measure of perceived productivity, since *-age* has the lowest lexical density scores but the highest indication of naturalization among the borrowed suffixes investigated.
- (3) The suffix *-ite* rests somewhere between *-age* and *-cion*. It is more naturalized than *-cion*, but far less naturalized than *-age*. It has a much narrower range of types than *-cion*, but slightly more than *-age*. Its perceived productivity was likely close to that for *-cion*, less than *-age*, and much less than *-ness*. The effect

of couplets on its salience and decomposability was likely very small, since it appeared in only 25 total couplets (compared to 126 for *-age* and 294 for *-cion*).

Many of the poetic motivations for using derivatives were identified. A pivotal argument of this chapter is that Middle English poets were driven to employ borrowed derivatives because they made for useful end-rhymes. This fact is unequivocally true for *-cion*, which is used as end-rhyme in high (and in some cases, extremely high) percentages. The suffix *-age* is used in less noteworthy percentages overall. Other than Lydgate, it inhabits the same range of percentages as *-ness*, though it must be acknowledged that it is consistently used as an end-rhyme more than two-thirds of the time (and in Lydgate's case, over 90% of the time). In general, *-ite* had percentages of end-rhyme similar to or significantly more than *-age*, but always less than *-cion*.

While poets were motivated to use borrowed derivatives for their distinct prosodic qualities, they were also attracted to them for semantic reasons. To establish certain characters or themes, poets drew upon these derivatives because they inhabited lexical fields that were useful for poetic diction. The handiest *-ite* derivatives came from religious discourse; *-age*, from terminology signifying social rank and relationships; and *-cion*, from lexical fields concerning Christianity and cognitive processes.

The preceding conclusions about perceived productivities, naturalization, and motivations for the use of borrowed derivatives certainly hold for the texts chosen for this study, and they may be true for the poets' other works and/or for Middle English rhymed verse more generally. To put these results in a wider context, it would be useful to study more nominal suffix types, both native and borrowed, to compare these findings to those targeting other suffixes in similar text types. I would not presume to forecast the

characteristics of other suffixes based solely on the behavior of the four suffixes in this study; I echo Cowie's (1998) sentiment that suffixes tend to have their own individual histories. But, considering the influence of Chaucer and his contemporaries on other poets, it is reasonable to hypothesize that much of the aureate, rhymed poetry in late Middle English was likely to exhibit distributions and motivated uses of *-ness*, *-age*, *-ite*, and *-cion* similar to those found in this study. Of course, further research of derivational patterns in other poems is needed to evaluate such a hypothesis.

Perhaps the most broadly applicable contribution of this chapter is its insistence that poetry has much to offer diachronic analyses of morphology. Quite typically in historical studies, poetic texts are actively sought out only for phonological evidence (e.g., prosodic patterns), or only if there are insufficient prose sources available in a particular period. This study demonstrates that poetry should not necessarily be so begrudged. While ME poetry may not have influenced the spread of borrowed derivations among speakers on a massive scale, it certainly reflected a more general trend in the late ME vernacular in its use of a frequent number and range of lexemes ending in *-ite*, *-cion*, and *-age*. The audience of this poetry may have been already familiar with many of these lexemes (especially those from religious discourse), but they may have been less familiar with a significant number of derivations (those from scientific and legal discourses, those first attested in the poetry of this period, etc.) But no matter how familiar they were with these lexemes, the poets' use of these derivatives increased the audience's exposure to a range of these derivatives. And the effects of such increased exposure on the transparency of the derivatives and the analyzability of their suffixes should be studied in this ME register as much as any other.

Like the previous two chapters, the present study demonstrates that there are certain explanations of language use that can be discovered only by investigating particular registers. If the language of these poets reflected and/or affected at least some aspects of the language of their day, then it is valuable to know, for purposes of linguistic explanation, the forces most likely to motivate the use of these derivations in the first place (e.g., all four poets' undeniable affinity for *-cion* as an end-rhyme). And some evidential types in this study were completely register-specific: positional occurrence within the poetic line, for example, was found to be an essential tool when assessing the levels of naturalization of different borrowed lexemes. While aspects of the framework laid out here can be usefully adapted to other register studies, the methodology emphasizes that poetry has a significant role to play in lexicographic and morphological studies, especially those focused on borrowed derivations.

Chapter 6

Borrowed Nominals in English Letters and Medical Texts, 1400-1600: A Multi-dimensional Approach to Diachronic Productivity

In the preceding chapters I have approached the topic of borrowed derivational morphology by identifying distribution patterns and signs of productivity and suffixal analyzability in different Middle English genres: economic records (Chapter 3); religious and fictional prose (Chapter 4); and end-rhymed poetry (Chapter 5). But this dissertation has not yet addressed several important areas, including diachronic changes in productivity and sociolinguistic variables other than register. I have occasionally provided some comparative assessments of the impact of genre differences on the use and perceived productivity of borrowed suffixes in English. But I have not yet presented a more extensive, side-by-side analysis of the use of borrowed derivational suffixes in registers that differ markedly in their levels of formality. In particular, each of the preceding chapters has explored the language of relatively formal registers of Middle English; this study has not yet investigated the use of borrowed derivations in the informal, personal writing of individual English speakers.

This chapter aims to expand the analysis of the integration of borrowed derivational morphology into English by focusing upon two markedly different register types in the fifteenth and sixteenth centuries: personal correspondence (letters) and medical texts. Each genre is valuable to explore for a number of reasons.

Nominalization in English scientific writing, which often relies upon borrowed derivational morphology, has been addressed in a number of studies (e.g., Halliday 1988; Banks 2005). Banks, for example, investigates the influence of Latin on nominalizations in English scientific writing, locating the origin of Latin influence in the seventeenth and eighteenth centuries. But he overlooks the potential influence that much of the earliest scientific writing in English, such as medieval medical texts, may have had in cementing nominalization patterns in English. In general, English medical texts have only recently been investigated in depth by historical linguists, and very few have considered word-formation processes in this genre.¹⁵⁰ In their study of word-formation in Middle English scientific registers, Moskowich and Crespo (2006: 134) argue that “socio-political interests were served in endowing the vernacular with prestige by incorporating Latin linguistic structures and lexical items” into these scientific texts. And many terms may have been borrowed to cover perceived gaps in the available native lexicon. This genre is clearly an important one for the present study, as it was a likely conduit for a number of nominals derived from Latinate material coming into the vernacular.

In contrast to medical texts, correspondence in the vernacular has been explored more extensively. As Nevalainen and Raumolin-Brunberg (2003: 29) have demonstrated, personal letters are “one of the most oral written genres.” In historical studies, letters represent the written data that comes closest to the everyday speech of English-speaking peoples. Letters are also typically well-dated, enabling accurate diachronic studies of language. And most can be classified along a number of sociolinguistic dimensions, such as gender of author/addressee, age, and class. Using the Corpus of Early English

¹⁵⁰ Cf. The 2004 collection of essays *Medical and Scientific Writing in Late Medieval English* contains fascinating information about manuscripts, sources, communities, and language associated with ME medical texts, but it offers no analysis of borrowed derivational morphology.

Correspondence, Nevalainen and Raumolin-Brunberg discover a number of interesting trends in the fifteenth through seventeenth centuries, including syntactic, inflectional, and pronominal changes. Alexander Bergs (2005) provides an excellent sociolinguistic analysis of the Paston Letters, including an account of a number of inflectional morphemes. But thus far, these and other scholars have paid little attention to the development of derivational morphology, and especially borrowed derivations, within this genre. By considering a more oral-like written genre, this chapter will widen the scope of this dissertation, which has heretofore examined only formal discourses. Moreover, it will also consider the effect of gender on the use of borrowed derivations in English.

These genres deserve comparison for several reasons. They were both new genres that came into vernacular English at roughly the same time (at least as far as available records indicate). Medical texts began to appear in the late fourteenth century, while the earliest letters emerged circa 1410. And unlike the Wycliffite Bible or poems of Chaucer and Gower, both text types have audiences that were not largely public; neither medical texts nor personal letters were intended to be widely disseminated. Despite these similarities, these genres show vast differences in types of language use, from the technical and narrative in medical texts to the non-technical and personal in letters. Exploring these differences, this study will examine the effect of genre on the distribution and perceived productivity of derivations within these texts' communities.

This chapter fills in several gaps in our knowledge about the use of borrowed derivations in the vernacular. It also illuminates many of the forces that impacted the productivity of borrowed nominal suffixes *-age*, *-ity*, *-ment*, and *-cion* in English. This

study first describes how gender and genre influenced the use and spread of derivations for some (but definitely not all) suffixes. It then considers several variables that reflect different aspects of these suffixes' productivity: type diversity; the diachronic aggregation of new types; hybrid and competing forms; and qualitative factors such as glossing. A comprehensive analysis of base-derivative ratios also provides strong evidence of the varying levels of perceived productivity of each suffix during different sub-periods of the fifteenth and sixteenth centuries. This multi-faceted approach finds that, while none of these suffixes were as productive as native nominal *-ness*, each showed various degrees of productivity in at least one dimension in either letters or medical texts or, more often, both genres. Arguing that there is no single, reliable criterion which best measures productivity, this chapter ultimately presents a multi-dimensional ranking of these suffixes according to their relative productivities in this period.

6.1 Materials and Methods

To conduct this comparative and diachronic analysis of borrowed derivations, texts were selected from the CEEC (Corpus of Early English Correspondence)¹⁵¹ and MEMT (Middle English Medical Texts). The CEEC is a 2.7 million word corpus of personal letters written by over 778 informants, from the beginnings of the records of the genre (ca. 1410) to 1681. Individual letters are coded for sociolinguistic variables such as gender and age of writers and addressees. Men are much more represented than women

¹⁵¹ The texts of the CEEC were taken from the publicly available PCEEC (The Parsed Corpus of Early English Correspondence). The description of the corpus in this section is taken primarily from Nevalainen and Raumolin-Brunberg (2003: 43-49).

in all sub-periods, in part because they tended to have greater access to literacy during this time. All social classes are represented in the corpus, though the upper classes are more strongly represented. The corpus has some geographic diversity, including letters from East Anglia, London, the North, and the Royal Court. Because of the corpus's general representativeness, this study adopts Nevalainen's and Raumolin-Brunberg's (2003: 49) view that

. . . while the CEEC may not in all respects represent the entire language community from the fifteenth to seventeenth centuries, it nevertheless provides quite a reliable sample of the informal language used by the language community, or at least by the literate writing community, of Tudor and Stuart England.

As such, the use of borrowed derivational morphemes in letters can be assumed to represent patterns of use and productivity that were likely present within this literate community. These lexemes may have been further diffused from literate speakers to less literate speakers, but there is no available evidence to describe how this process might have taken place.

The MEMT, with roughly half a million words, provides the earliest medical texts written in English, from ca. 1375-1500. These texts were drawn from several different genres of medical writing, including surgical manuals, remedy books, and specialized academic treatises.¹⁵² Some of the material may be considered original compositions, but much of it is direct translations of Latin materials that circulated at universities in medieval Europe. Texts were not intended for a wide audience but rather specialists, though the vernacularization of medical texts itself suggested a widening readership. In

¹⁵² The descriptive information presented here is culled from the *Introduction* included with the corpus, written by Irma Taavitsainen, Päivi Pahta and Martti Mäkinen.

the *Introduction* to the MEMT, Taavitsainen et al. describe the dissemination of medical texts in the late medieval period:

The discourse world of science and medicine was monolingual Latin in the universities, but these institutions were responsible for the training of only a small group of physicians and surgeons. Besides the learned elite, the practitioners of medicine were of heterogeneous backgrounds and received their education in monasteries, households, and guilds through apprenticeship and practical experience. University curricula provided for the transmission of authoritative medical texts that formed the basis of medical knowledge and practice in society at large.

While these texts must have been disseminated into the hands of certain medically interested English speakers outside the university system, it is difficult to measure the extent to which these texts would have impacted the language of “society at large.” This study assumes that these texts represent the language of a specific community, medical practitioners, who may have diffused many borrowed derivations through their social interactions in monasteries, households, and guilds.

To enable diachronic analyses and comparisons between genres, texts were grouped into fifty-year subperiods, 1401-1450 (CEEC1, MEMT1), 1451-1500 (CEEC2, MEMT2), 1501-1550 (CEEC3), and 1551-1600 (CEEC4). One important limitation in this analysis was that corpus-ready medical texts are available only before 1500.¹⁵³ And while the letters were typically dated to the individual year, most medical texts had very little information about dates of composition. Based on the text and manuscript descriptions in the *Introduction* to the MEMT, I selected for my corpus those texts which could be reasonably placed into either the first half or the second half of the fifteenth

¹⁵³ Taavitsainen et al. will be releasing an early modern edition of medical texts, but it was not available at the time this study was conducted.

century. Several texts, which could not be dated in such a way, were therefore excluded from my analysis. The texts selected for each period are the following:

MEMT1

Galen, *De Ingenio Sanitatis*
Gilbertus Anglicus, *Compendium (Epilepsy)*
John of Burgundy, *Plague Treatise 1*
Nature of Wommen
Trevisa, *On the Properties of Things 1*
Trevisa, *On the Properties of Things 2*
Agnus Castus
De Caritate, *The Priuyte of Priuyteis*
John of Burgundy, *Practica Phisicalia*
Leechbook 1
Leechbook 2
Liber de Diversis Medicinis
Medical Works
Queen Isabel's Dietary
Recipes 1
Secreet of Secreetes
Arderne, *Clysters*
Arderne, *Fistula*
Chauliac, *Anatomy*
Chauliac, *Anatomy (interpolated)*
Chauliac, *Cyrurgie*
Chauliac, *Ulcers*
Chauliac, *Wounds*

MEMT2

Benvenutus Grassus
Bok of Ypocras of Lyf and Deyth
Canutus, *Plague Treatise*
Caxton, *Ars Moriendi*
Daniel, *Liber Uricrisiarum 2*
De Condicionibus Planetarum Septem
De Humana Natura
De Spermate
De XII Portis
John of Burgundy, *Plague Treatise 2*
Practica Urinarum
Torrella, *Tretece of the Pokkis*
When the Mone is in Aries
Caxton, *Gouernayle of Helthe*
Crophill, *Books Remedies*
Killeen Medical Texts
Medical Charms
Reynes, *Directions for Bloodletting*
Wyse Book of Maystyr Peers of Salerne

Because of the scant information available about composition dates, claims about the language of different time periods should be interpreted more cautiously when they are based on data from the MEMT than from the CEEC, whose texts are much more accurately dated. Consequently, I make no claims about diachronic change within vernacular medical discourse of the fifteenth century; all diachronic analyses are based on the CEEC.

As in previous chapters, nominal derivatives were chosen for analysis and comparison. Derivatives were identified by using the AntConc concordancer. Native suffix *-ness* was selected, as were borrowed suffixes *-age*, *-ity*, *-cion*, and *-ment*. These suffixes are five of the most frequently occurring suffixes in the Helsinki Corpus (Dalton-Puffer 1996), and all of them are used to create abstract nominals in English. While *-ment* was not examined in Chapters 4 or 5, it was added to this analysis for two reasons. First and foremost, the addition of *-ment* helps to round out the comparisons between suffixes: *-ness* and *-ity* are both deadjectival, *-cion* and *-ment* are both deverbal, and *-age* can be either deverbal or deadjectival. Thus, the trajectories of solely deverbal suffixes could be compared with one another and/or distinguished from patterns evidenced by the deadjectival suffixes. A secondary reason for adding *-ment* to this case study was that the use of AntConc and two corpora designed for linguistic inquiry made it much easier to add a fifth suffix to the overall searches. The Compendium of Middle English (CME) (used in Chapters 3 and 4) is a general purpose corpus that allows only web-based retrieval; I could not use AntConc on the CME because it can only be accessed via the University of Michigan's search engine. Thus, the use of this concordancer with corpora

that do not require web-based searching made the addition of one more suffix a feasible enterprise.

Certain derivatives were excluded from the present analysis. *Witness* may have contributed to the perceived productivity of *-ness* in multiple periods, but it was not considered because it does not follow the pattern of other *-ness* derivations.¹⁵⁴ The lexeme *highness* was an outlier in sub-period CEEC3 (1501-1550), as letter writers used it in unusually large numbers as an address or reference to the king or other superiors. In fact, it accounted for almost two-thirds of all uses of *-ness* in that one sub-period, a pattern which was not observed in any other sub-periods in the present study nor in other genres investigated previously in this dissertation. This anomaly will be addressed in the relevant sub-sections throughout this chapter; in some cases it will be noted that *highness* was excluded from the analysis.

All claims of statistical significance were based on chi-square tests conducted with the software SPSS. A difference was typically considered significant if the p-value was less than 0.05.

More specific discussions of methodological decisions are left to the individual subsections of this chapter.

6.2 Token Frequencies

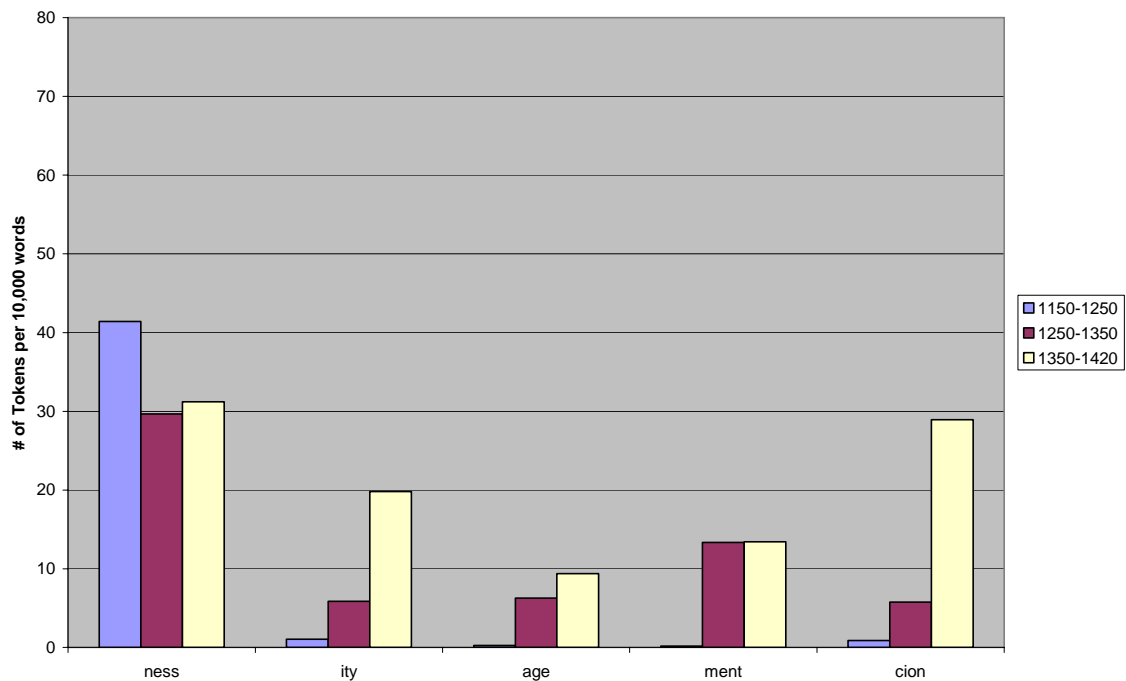
6.2.1 Diachronic Distributions

Few previous studies have charted the relative distributions of various suffixes in early English usage. Prior to the present study, the most comprehensive account can be

¹⁵⁴ For the full rationale for excluding *witness* from my corpus analyses, see Section 5.2.

found in Dalton-Puffer (1996). She provides token counts for all Middle English suffixes in the Helsinki Corpus. To understand the general trends underway in the centuries immediately preceding the present study, consider Graph 6.1 below. Generated from the data in Dalton's study, it provides the normalized frequencies for *-ness*, *-ity*, *-age*, *-ment*, and *-cion* in three sub-periods of Middle English: 1150-1250, 1250-1350, and 1350-1420.

Graph 6.1: Early Middle English Distributions (Helsinki)

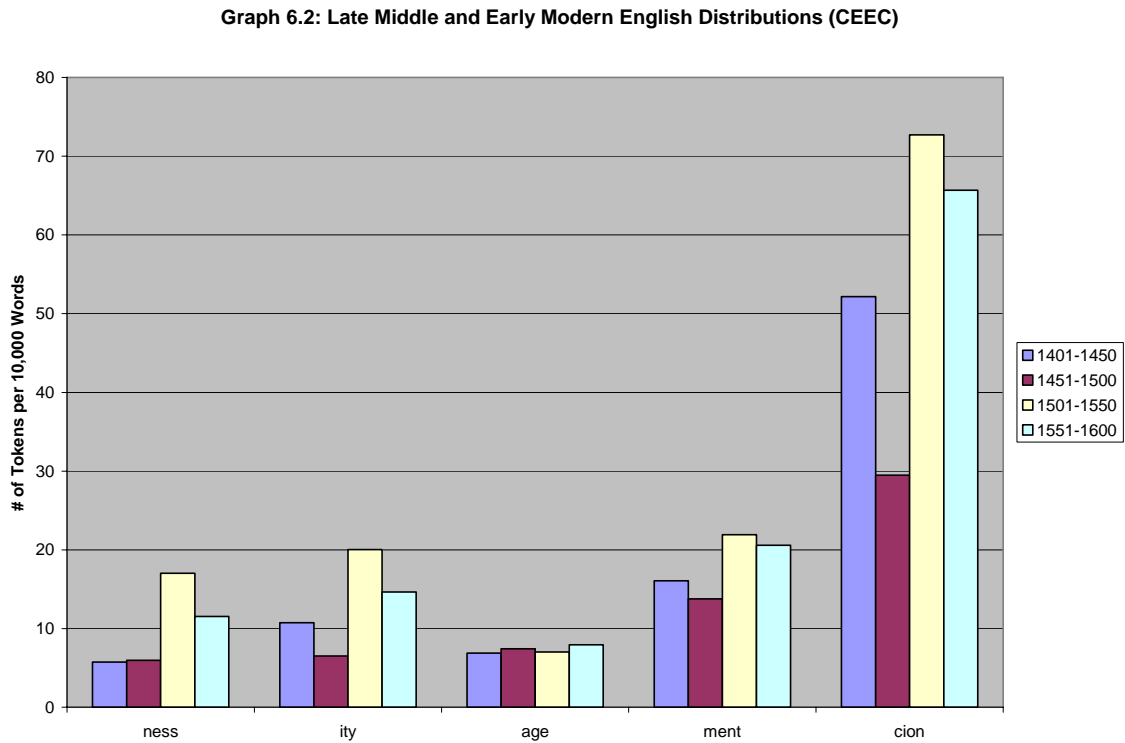


Several significant trends can be observed in Dalton-Puffer's data. From the mid-twelfth through the early fifteenth centuries, *-ness* was used significantly more often than all borrowed affixes. The one exception to this trend is *-cion*, which in the late fourteenth century begins to rival the usage of *-ness*. Perhaps unexpectedly, writers in the Middle English period generally use increasing numbers of all borrowed derivatives as each

century passes (though *-ment* shows a leveling out between the second and third sub-periods). Dalton-Puffer finds that, more generally, all suffixes borrowed from French (including *-aunce* and *-acy*) had the highest usage in third sub-period of Middle English. In contrast to the trends observed with the borrowed affixes, *-ness* actually drops in usage after the first sub-period.

Since previous studies of derivational morphology have not provided much insight into usage trends in the centuries immediately following those in Dalton-Puffer's study, it is useful to compare her data with frequencies observed in the CEEC in the fifteenth and sixteenth centuries. But before considering a comparative analysis of Dalton-Puffer's and my data, it is important to bear in mind a few caveats. There is some overlap in the final time period of her study and the beginning of the present one. Even so, the vast majority of letters in the CEEC were composed after 1420. It is safe to assume there is little overlap in the texts used in each study. Secondly, the Helsinki Corpus consists of multiple genres, including many that are far more formal than personal correspondence. Since highly formal genres such as poetry and Biblical writing have been shown in previous chapters to use relatively high numbers of borrowed derivatives, it is reasonable to suspect that the CEEC would present lower frequencies than the Helsinki Corpus, which contains much literary and religious material in addition to other formal registers. It is important to remember that the following discussion compares trends observed in one genre—letters—to more general trends observed in the preceding centuries of the Helsinki Corpus.

Graph 6.2 provides the normalized frequencies of *-ness*, *-ity*, *-age*, *-ment*, and *-cion* in four sub-periods, 1401-1450 (CEEC1), 1451-1500 (CEEC2), 1501-1550 (CEEC3), and 1551-1600 (CEEC4):



The lexeme *highness* was excluded because it was an outlier in the first half of the sixteenth-century. The word was likely already highly lexicalized by this point in history; it was only an opaque derivative of *high*. It experienced an unusual growth spurt in the beginning of the sixteenth century, when it was used in a variety of letters whenever writers addressed or referred to a king or other superior. In fact, between 1501

and 1550, it accounts for almost 64% of all *-ness* tokens.¹⁵⁵ Because it has only minimal frequency in other periods, it was excluded from the overall analysis.

Perhaps the most remarkable trend observed in Graph 6.2 is the usage of *-ness*. Compared to Dalton-Puffer's data in Graph 6.1, the earliest letters start with a much lower frequency of *-ness*, far less than a third of the frequency in the 1350-1420 period of the Helsinki Corpus. Somewhat surprisingly, *-ness* is roughly equal in frequency with *-ity*, consistently less frequent than *-ment*, and much less frequent than *-cion*. If personal correspondence is the closest representative sample to the everyday language use of English people in the fifteenth and sixteenth centuries, then these data suggest that usage of *-ness* was in relative decline compared to the use of several other borrowed derivatives. An interesting question here is whether or not this trend in *-ness* was an effect of the relatively more frequent use of borrowed derivations. In other words, *-ness* may have become less useful as a nominal in written expression because its borrowed peers became more useful, particularly if *-ness* was competing with other deadjectival patterns such as *-ity*. While this is an intriguing proposition, it is difficult (or perhaps impossible) to prove with any certainty. There is some small evidence that, in terms of individual lexical decisions, there were some forms that may have competed for use (e.g. *ableness* vs. *ability*, *confusedness* vs. *confusion*). But these sorts of potential equivalents sharing the same base are rare in the CEEC. Other synonymic choices may have been at play (e.g., the choice of *absurdity* or *oddity* over *strangeness*). But, especially because glossing was rare in the CEEC, it is usually impossible to know if individual writers were aware of these lexeme pairs or if they were treating them as semantic equivalents.

¹⁵⁵ The effects of such frequency on the lexicalization of *highness* and transparency of *-ness* will be addressed further in this chapter in Section 6.4 on relative frequencies of bases and derivatives.

In terms of the borrowed derivations, *-age* remains approximately at the same frequency throughout the fifteenth and sixteenth centuries. And this frequency is statistically within the same range as the *-age* derivatives in the last period of Dalton-Puffer's study. Hence, there seems to be no increase in the use of *-age* over this period of time. In the fifteenth century, the suffix *-ment* shows a slight increase from the frequencies observed in the preceding centuries of the Helsinki Corpus, with a further increase in the sixteenth century. In contrast, *-ity* shows a fifty percent drop from the last period of Dalton-Puffer's study into CEEC1. At the beginning of the sixteenth century it returns to the frequency level observed in the Helsinki Corpus. There are no clear explanations for differences in these trends, beyond those that sound somewhat circular (e.g., the use of *-ment* increased as letter writers found the range of derivatives increasingly useful). But it is interesting to note that not all borrowed derivatives in the CEEC followed the emergent trends observable in the earlier periods of the Helsinki Corpus: *-ment* continued to increase gradually, while *-age* flatlined and *-ity* dipped down and bounced back up.

The one suffix that continued to trend upward substantially was *-cion*. Compared to the data in the final period of the Helsinki study, the results in CEEC1 show a jump from just under 30 to just over 50 occurrences per 10,000 tokens. In CEEC2 the number dives down to 30 again, but by the sixteenth century *-cion* usage climbs to over 70 occurrences. These results may seem somewhat surprising since, as a generally less formal genre, letters might be predicted to be less inclined to invoke *-cion* derivatives. These lexemes were found to be the most frequent derivatives in formal genres such as poetry and Biblical text. As will be shown in later sections in this chapter, letter writers

were drawing upon these derivatives often because they came from a variety of lexical fields, including legal, religious, and political discourses. Thus borrowings from Latin (or derivations on Latin bases with *-cion* as a suffix) increased in use over time, largely due to increasing perceived usefulness of the forms.¹⁵⁶ It must also be said that it is likely that the present study may indicate higher numbers than Dalton-Puffer's analysis would find, simply due to methodological differences. Specifically, Dalton-Puffer chooses to count only the most frequent orthographic representations of *-cion* (<cion, cioun, tion>), whereas the present study accounted for many more variants (e.g., <cyon, sion, xyoun, etc.>). It is difficult to know the exact effect of this difference, which is likely significant but also likely small, since Dalton-Puffer accounts for the most frequent orthographic variants.

Overall, the preceding analysis has provided a somewhat surprising portrait of the distributions of derivations in fifteenth- and sixteenth-century correspondence, as we might expect a less formal register to rely on more native derivatives compared to borrowed ones. In fact, even though *-ness* tended to be less frequently used than *-cion* in rhymed poetry from the early fifteenth century (Chapter 5), it still exhibited much higher frequencies than it does in personal correspondence from the same century. The preceding descriptive account cannot offer any easy explanations for these differences. But it does illustrate a case in which reasonable assumptions about the expected diachronic distributions of borrowed derivations in English do not always bear out when corpora are examined closely and comprehensively. The results from letters suggest that, in the fifteenth and sixteenth centuries, borrowed derivatives in *-ment* and *-cion* were

¹⁵⁶ These increases may also have been a product of increasing literacy and education during the fifteenth and sixteenth centuries, which may have made more *-cion* derivatives more familiar to a wider range of writers.

typically used more frequently than native *-ness*. And even *-ity* rivaled the use of *-ness* in most sub-periods.

6.2.2 Genre and Frequency

To better assess the effects of genre on the use of borrowed derivations in late Middle English, I compared the normalized frequencies of each suffix in the CEEC and MEMT. As discussed previously, Middle English medical texts were primarily translations of Latin materials used in highly specialized educational contexts, while English letters were more typically original compositions that resembled informal, everyday language use. Because of these generic differences, it is reasonable to expect that borrowed derivational morphemes might occur more frequently in medical texts than in letters or in the broad set of texts in the final period of Dalton-Period's study (Graph 6.1 above). For the most part, the results of this study confirm this supposition. Consider Table 6.1 below:

1401-1450	CEEC	MEMT	1451-1500	CEEC	MEMT
<i>-age</i>	6.9	3.2	<i>-age</i>	7.4	4
<i>-ity</i>	10.8	31.7	<i>-ity</i>	6.5	31
<i>-ment</i>	16.1	16.2	<i>-ment</i>	13.8	13.2
<i>-ness</i>	5.7	35.4	<i>-ness</i>	6	44
<i>-tion</i>	52.2	62.8	<i>-tion</i>	29.5	60

Table 6.1. Normalized frequencies (number of tokens per 10,000 words) in two-sub-periods of the fifteenth century in the CEEC and the MEMT. Note: The token *highness* was excluded from this analysis.

The most noticeable difference in the genres' use of borrowed derivatives can be seen with *-ity*. Derivations with this ending appear three times more often in medical texts than in letters in the first half of the fifteenth century, and five times as often in the

second half. Its frequency is also fifty percent higher than that found in the third period of the Helsinki Corpus. The high rate of *-ity* usage is likely due to a specific generic feature of these texts: medical writers' need for nominalizations of adjectives that convey physical description of aspects of health and the human body. For example, they use a number of new lexemes in English such as *aquosite* 'wateriness' or *callosite* 'hardness of tissue' to describe symptoms of diseases or to clarify the steps of various procedures.

This same need perhaps explains medical writers' much higher use of *-ness* compared to letter writers' use. (The MEMT frequencies of *-ness* are also within the range of *-ness* frequencies observed in all periods of the Helsinki Corpus in Graph 6.1). Medical writers also found *-ness* useful in descriptions of disease and procedure: e.g., a number of nominalized adjectives of color are used frequently (*redness, blackness, whiteness, greenness*) as well as other types of sensory descriptors (*moistness, dryness, coldness, sourness, etc.*).

As might be predicted, *-cion* is even more frequent in early English medical texts than in letters.¹⁵⁷ The derivative type was used often by medical writers to describe procedures (e.g., *incision, operacion*), bodily states (*constriccioun, inflammation, putrefaccion*), and diagnoses (*constellation*¹⁵⁸, *complexion*).

But not all borrowed derivative types occur more frequently in medical texts than in letters. There are no significant differences in the use of *-ment* in the fifteenth century. And *-age* is used significantly less frequently in medical texts than in letters. It is likely that the primary lexical fields of *-age*, including economic terminology and terms

¹⁵⁷ A chi-square test shows that the difference in the first half of the fifteenth century is not statistically significant, despite the higher frequency observed in the MEMT.

¹⁵⁸ This lexeme was relevant to diagnoses based on the assumed relationship between astronomical phenomena and the human body.

denoting feudal and familiar relations, were simply less useful to medical writers. Moreover, because the source texts for many of these writing were specifically Latin rather than Anglo-Norman or French, there may have been few uses of the etymons *-age* (from Old and Anglo-French) in the source language. In any case, medical writers did use one borrowing from French fairly frequently—*pottage* ‘a thick stew or other mixture’—particularly when describing remedies for various illnesses.

Overall, this comparison of derivative frequencies illustrates an important point: different genres influence the use of derivations in different ways. While macro-level studies of the sort created by Dalton-Puffer are critical for identifying overall trends in the use of borrowed derivations in different periods, it is equally illuminating to sort out the specific effects that individual genres may have had on the use of derivatives. In the fifteenth century, the semantic needs of medical writers encouraged them to use high levels of derivations with *-cion*, *-ity*, and *-ness*, an unmarked level of *-ment*, and a relatively low level of *-age* compared to personal correspondence.

6.2.3 Gender and Frequency

Is it possible that gender, in addition to genre, may have had an effect on the use of different suffix types in late ME and early EME? Historical sociolinguistic studies, such as Nevalainen and Raumolin-Brunberg (2003) and Bergs (2005), have provided increasing insight on the effects of gender on language change in English. These studies have typically focused on variation in syntax and inflectional morphology. This trend can also be seen in present-day sociolinguistic studies, which rarely inquire about the

relationships between gender and the use of derivational morphology. In this section I examine the effects of gender on the use of different derivatives within personal correspondence from the fifteenth and sixteenth centuries. These results are discussed in the wider context of theories about the relationship between gender and language change.

In general, Nevalainen and Raumolin-Brunberg find that women tend to lead language changes in the history of English. Their evidence from the CEEC includes the use of *you* over *ye* and the replacement of 3rd person singular *-th* with *-s*, both of which were led by women in most sub-periods of the fifteenth through seventeenth centuries. However, the authors do identify a few variables in which men lead changes: e.g., the decline of multiple negation and the replacement of relative pronoun *the which* with *which*. Nevalainen and Raumolin-Brunberg (2003: 130-131) argue that these exceptions are likely due to “supralocal changes led by men” which were “typically channelled through learned and professional usage.” The loss of multiple negation, in particular, was “promoted by male professionals and systematically led by men in the upper and middle sections of society.” The authors indicate that their results, including the exceptions, generally confirm Labov’s “gender paradox”: “women conform more closely than men to sociolinguistic norms that are overtly prescribed but conform less than men when they are not.”¹⁵⁹ In other words, developing professional norms predictably impacted men’s language use more than women in certain parts of the grammar, such as multiple negation, primarily because women were mostly excluded from professional social spheres during these centuries. For these specific types of changes, women tended to lag behind men. But since there was otherwise little overt language prescription in the

¹⁵⁹ Quoted in Nevalainen and Raumolin-Brunberg (2003: 112), from Labov (2001: 293). *Principles of Linguistic Change. Volume 2: Social Factors*. Cambridge, USA: Blackwell.

centuries preceding the eighteenth century, women—as predicted by Labov’s theory—tend to lead most linguistic changes.

But do these historical sociolinguistic trends also apply to the processes of borrowing and derivational morphology? In their overview of research on gender and language change in English, Nevalainen and Raumolin-Brunberg do not mention derivational morphology at all. But they do indicate, without citing a specific study, that lexical borrowing is one of the main types of change led by men in the Tudor and Stuart periods. The only evidence they offer is that many lists of hard-words, such as Cawdrey’s *Table*, were specifically targeted towards women: Cawdrey’s Preface overtly declares that his hard words were “gathered for the benefit of & helpe of Ladies, Gentlewomen, or any other unskilled persons.”¹⁶⁰ It is reasonable to assume that, because women generally had lower rates of education and literacy in the fifteenth and sixteenth centuries, they may have been less inclined to employ Latin and French borrowings. So, one would expect that the increasing use of borrowed derivatives in English might also be led by men.

The data from the present study of the CEEC, presented in Table 6.2 below, confirms this prediction for some derivative types but not others.

¹⁶⁰ Quoted in Nevalainen and Raumolin-Brunberg (2003: 118). Also can be found at <http://www.library.utoronto.ca/utel/ret/cawdrey/cawdrey0.html#reader>, where the quote is slightly different: “With the interpretation thereof by *plaine English words, gathered for the benefit & helpe of Ladies, Gentlewomen, or any other vnskilfull persons.*”

Suffix/Period	Men	Women
age1	6.5	8.8
age2	7.6	6.6
age3	7.2	3.1
age4	8.3	5.6
ity1	9.9	14.4
ity2	5.9	9.5
ity3	20.5	11.9
ity4	13.8	19.4
ment1	18.9	3.2
ment2	14.8	8.4
ment3	22.2	16.9
ment4	21.4	15.8
ness1	6.8	3.2
ness2	6.1	5.4
ness3	16.8	21.3
ness4	11.5	12.0
cion1	60.2	15.2
cion2	30.5	24.9
cion3	75.6	23.2
cion4	65.3	68.0

Table 6.2. Gender distributions of suffixes. Note: In the first column, the number following each suffix corresponds to the period in which it occurred—e.g., *age1* refers to the use of *age* in period CEEC1. The numbers provided in the second and third columns are normalized frequencies (number of tokens per 10,000 words). The token *highness* was excluded from this analysis.

The largest differences in gender¹⁶¹ use occur with deverbal nominals *-ment* and *-cion*. In all four sub-periods, men lead women in the use of *-ment* derivatives.¹⁶² The differences are even more exaggerated for *-cion*, which men use much more often than women until the second half of the sixteenth century, when women’s use roughly equals that of men’s.

¹⁶¹ By “gender” I specifically mean “gender of the letter writer.” This concept is possibly less straightforward than it may at first seem, since many letters signed by women were physically written by male scribes. While I cannot deny the possibility that male scribes might have influenced the use of borrowed derivations in women’s letters, it is reasonable to assume the scribal effect would be less significant on borrowed derivational morphology than it would be for orthographic or phonological variation.

¹⁶² Statistical tests show that there may be no significance in the differences between men’s and women’s frequency of use of *-ment* derivatives in the sixteenth century. The p-values for chi-square tests are 0.167 for CEEC3 and 0.056 for CEEC4, which is on the borderline for statistical significance (assumed when $p < 0.05$). However, because men consistently use *-ment* more than women in all sub-periods, the overall trend is certainly noteworthy.

This difference in usage was mostly likely due to the differing social spheres inhabited by men and women during this period. Nevalainen and Raumolin-Brunberg (2003: 114) describe the social situation as follows:

As to **being**, [that is] integration into society, gender differentiation could hardly have been more marked. An individual's rights to participate in decisions and activities influencing his/her life were sharply gendered: Tudor and Stuart men ruled every aspect of the public sphere, including national and local politics, the economy, the church and the legal system.

A majority of the lexemes ending in *-ment* and *-cion* coming into English usage emerged from these very spheres—politics (e.g., *administration*, *commision*), economics (*payment*, *assignment*), religion (*confession*, *temptation*), and law (*ratification*, *inditement*). Hence, it is easy to understand why men might be far more likely to use these terms more often and earlier than women; these derivatives are more likely to have reflected their day-to-day experience. Thus, the evidence in Table 6.2 suggests that *-ment* and *-cion* follow the pattern of hard words, which diffused into English usage typically via men's usage more often than women's.

The data for *-age*, however, do not tell the same story. It is noteworthy that neither *-ness* nor *-age* show statistically significant¹⁶³ differences in the language of men and women in any sub-periods of the fifteenth or sixteenth centuries. As a native nominal, *-ness* derivatives would be less likely to be considered hard words, and thus may have been equally accessible to both men and women. But *-age* is a borrowing whose lexemes often denote economic, political, and familial entities. So it would be reasonable to predict that men might have led in its usage. However, previous chapters

¹⁶³ Statistical significance was considered for any chi-square comparisons with p-values less than 0.05.

of this dissertation have indicated that *-age* has tended to be one of the most naturalized borrowed nominals. It is used in hybrid forms, and poets were less likely to use it as an end-rhyme than other borrowings. Perhaps the even distribution between genders displayed in Table 6.2 is yet another sign that *-age* is more like *-ness* than *-cion*. The fact that both genders used *-age* in similar frequencies throughout these two centuries may reflect that *-age* was more integrated into English than its borrowed peers.¹⁶⁴ This sort of speculation seems to depend on Nevalainen and Raumolin-Brunberg's observation that lists of hard words were often aimed at women. If women's use of a particular borrowed suffix (such as *-age*) consistently does not differ from men's use, then it is possible that derivatives with the borrowed suffix were generally perceived by speakers as less hard than derivatives with Latinate suffixes used in much higher frequencies by men (such as *-cion* and *-ment*).

The suffix *-ity* exhibits the most complex distribution. In all periods but CEEC3, it is used more often by women than by men. The surge in men's use in CEEC3 coincides with an influx of learned forms ending in *-cion* and *-ment* used by men; male writers in the early sixteenth century suddenly begin to use words such as *generality*, *perplexity*, and *particularity*. In the fifteenth and early sixteenth century, women were more likely to use *-ity* forms that had been attested in English much earlier: e.g., *adversity*, *charity*, and *trinity*. Because these forms had time to diffuse into English, perhaps they became more familiar to a larger range of speakers, enough so that women were using *-ity* derivatives even more often than men by the fifteenth century. By the end

¹⁶⁴ Here I am suggesting the possibility that naturalization may sometimes correlate with the perceived hardness of words--i.e., the less hard a borrowing becomes in English, the more likely it may be perceived by speakers as less "foreign." But I do not intend to claim that *naturalization* and *hardness* are equivalent concepts. Hardness is an indicator of speaker familiarity with the semantics of a lexeme. Naturalization depends more upon a lexeme's phonological and morphological integration into English.

of the sixteenth century, women began to add to the types of *-ity* derivatives they used, including those acquired more recently in the sixteenth century (e.g., *absurdity*, *audacity*, *generality*). Women outpaced men again in overall use of *-ity* in the final sub-period. The overall trend in *-ity* usage does not consistently follow that predicted by Labov and Nevalainen and Raumolin-Brunberg, who suggest that men would be more likely to lead in the use of lexical borrowings.

Overall, this section has shown that borrowed derivations follow different trajectories in terms of their gendered use in the fifteenth and sixteenth centuries. Men tend to use *-ment* and *-cion* more than women, most likely because these endings often appeared in lexemes borrowed from learned and professional discourses. Women overall tend to use *-ity* more than men. While this general trend contradicts the predictions of Labov's paradox, the third sub-period (1501-1550) does show men using *-ity* derivatives, many of which were highly learned, more often than women. And because there is no gender differentiation in men's and women's use of *-ness* or *-age*, it is possible to speculate that *-age* derivatives may have been more naturalized than the other borrowed suffixes throughout the fifteenth and sixteenth centuries.

6.3 Evaluating Productivity: Derivative Types

6.3.1 Type Frequencies: Lexical Diversity

The preceding sections on absolute frequencies provide valuable information about the general patterns of use of borrowed derivations in fifteenth and sixteenth century English. But token frequency alone sheds little light on the productivity of

different suffixes. Type frequencies must also be considered, though they reveal limited information about the relative potential productivity of suffixes. In this section I present speculations about productivity that can be drawn from type frequencies alone. In the subsequent section I then discuss a set of data that better establish a diachronic account of productivity: the aggregation of new types. Differences in genre are considered, but the type frequencies from women’s letters were too small to draw any conclusions about the effects of gender.

To understand both the usefulness and limitations of type counts in descriptions of productivity, consider Table 6.3 below, which presents the type counts for all suffixes in all sub-periods of the MEMT and CEEC:

	MEMT1	MEMT2	CEEC1	CEEC2	CEEC3	CEEC4
-age	4	11	14	28	27	23
-ity	66	43	13	27	71	64
-ment	25	21	18	40	70	58
-ness	106	56	19	41	70	66
-cion	221	102	92	124	298	194

Table 6.3: Number of distinct types for each sub-period in the MEMT and CEEC

Unfortunately, because type frequencies depend on overall word counts, direct comparisons between different periods and genres cannot be made. And normalization of these frequencies by word count is also problematic, since larger corpora tend to produce normalized values that underrepresent the impact of type frequencies.¹⁶⁵ But comparisons between suffixes within the same genre and period can be observed without caveat. (That is, numbers within the same column can be compared.) In conducting such

¹⁶⁵ The larger the corpus, the more likely most of the possible types of a derivational process are already accounted for. Increasing the corpus size of an already large corpus will likely generate fewer additional types than it would when increasing the size of a smaller corpus by the same amount. Thus, a simple ratio of types/word count favors smaller sub-corpora over larger ones.

comparisons, the guiding assumption is the following: within the same sub-period and genre, a higher type count indicates a higher potential for perceived productivity. When a reader encounters an increasing range of unique derivative types ending with the same suffix, s/he is increasingly able to analyze the suffix as a unit that attaches to a range of bases. It is also important to note here that the effect of type frequency cannot be the sole factor that contributed to perceived suffixal productivity. Rather, it should be seen as one of several components that likely affected such productivity.

In applying the assumption that higher type counts indicate higher perceived productivity to the data in Table 6.3, several interesting patterns emerge. In both periods of the MEMT, *-cion* has the highest range of types, followed by *-ness*, *-ity*, *-ment*, and *-age*, in that order. So in fifteenth century medical texts, type frequency added most to the perceived productivity of *-cion* and the least to *-age*. In both sub-periods of fifteenth century letters, *-cion* again has the highest type frequency. Suffixes *-ment* and *-ness* cluster together at much lower frequencies than *-cion*, but higher than *-ity* and *-age*, which have the lowest type frequencies. But in the sixteenth century, there is a shift in the type frequencies of *-ity*. While *-cion* remains the highest and *-age* the lowest, *-ity* begins to cluster with *-ness* and *-ment*. In other words, between the fifteenth and sixteenth centuries there is an uptick in the range of forms ending in *-ity* relative to other suffixes, and thus an increased effect on its relative productivity.

To generalize further: in all sub-periods in both genres, the effect of type frequency on productivity is strongest for *-cion* and weakest for *-age*, with *-ness*, *-ity*, and *-ment* between these poles. The effect of type frequency on the productivity of *-ity* relative to other suffixes is stronger in medical texts than in letters in the fifteenth

century. But in the sixteenth century type diversity has similar effects on *-ity*, *-ness*, and *-ment*.

6.3.2 Aggregation of New Types

One of the problems with conducting a comparison of type counts is that such an analysis does not distinguish between types used repeatedly from those borrowings and derivations that were newly introduced into a genre over time. As Cowie and Dalton-Puffer (2002) and Chapter 3 of this dissertation have shown, a suffix which consistently appears in new types in contiguous sub-periods must certainly be considered more productive than one that rarely or never appears in new lexemes.

To inspect diachronic changes in type frequencies further, such as that observed with *-ity* in the preceding section, I constructed an aggregate analysis of new types entering the CEEC in each sub-period. The methodology for this analysis resembles that described in Chapter 3 for the Grocers and Goldsmiths records. For these data I have again adapted the methods outlined in Cowie and Dalton-Puffer (2002). I assume that the data from CEEC1 provides the “starter lexicon,” and I counted all new types that were used for the first time in personal correspondence in subsequent sub-periods. To take the example of *-ity*, I first counted the number of derivative types ending in *-ity* that appear in the CEEC2, but not the CEEC1, and designated that value as the number of new types for CEEC2. Then I counted the number of types ending in *-ity* that appear in CEEC3, but not CEEC1 or CEEC2, and assigned that number to CEEC3. And so on. The assumption is that suffixes that consistently add higher rates of new types over a period of time are the most likely to be productive in the language during that period. And to clarify once

again, a “new type” in this analysis is not necessarily a neologism in English. It is, however, a neologism in the corpus.¹⁶⁶

New types are a particularly useful focal point for diachronic analyses because they serve a function similar to hapaxes in present-day studies of productivity. Recall that hapax analyses work only if they are conducted on very large corpora—i.e., those with tens of millions of words. Since the majority of historical corpora have, at most, hundreds of thousands of words, hapaxes cannot be reliably counted. So a “new type” is a useful surrogate for a hapax in historical analyses, particularly since neither is a direct indicator of productivity but rather an indirect sign of potentially productive processes.

In this section I provide an overview of the aggregation of new types in the fifteenth and sixteenth centuries of the CEEC. The quantitative account of new types reveals the relative trends in lexical growth among the various suffixes in each period. Integrated into the quantitative analysis is a qualitative discussion of the primary lexical fields which contributed most to the new types of each borrowed derivative.

Table 6.4 provides the raw counts of the new types appearing in personal correspondence in each of the three sub-periods, CEEC2, CEEC3, and CEEC4:

	CEEC2	CEEC3	CEEC4
<i>-age</i>	17	10	3
<i>-ity</i>	16	51	17
<i>-ment</i>	25	44	17
<i>-ness</i>	27	43	30
<i>-cion</i>	69	171	40

Table 6.4: Raw counts of new types in each period of the CEEC

¹⁶⁶ These sorts of aggregate analyses may be effective for any type of diachronic corpora, but they seem most fitting for corpora like the CEEC, which provide continuous, well-dated data from the beginnings of a single genre. It is difficult to make claims about aggregation within a genre if one does not know what set of lexemes were initially used when the genre first emerged.

As discussed in the preceding section, because of differences in word counts, values in different periods cannot be compared directly with one another. But values within the same period (i.e., within the same column) can be compared.

The aggregation analysis shows that, in all periods, *-cion* consistently has the highest rate of growth. In each sub-period, letter writers add more than twice as many new derivatives with *-cion* as they do with all other suffixes examined in this study, except in CEEC4, where *-cion* has only a 33% higher rate than *-ness*. The first half of the sixteenth century (CEEC3), in particular, shows *-cion* with the highest rate of relative growth compared to its peers. In all periods, religious discourse supplied many new *-cion* forms in English letters (*absolution, Conception, confession, excommunication, damnation, temptations*). New legalisms also abounded (*allegation, examination, deposition, citation, inquisition, comprobation*) as well as political terms (*administration, confederation, legation*). Many letters relied on derivatives conveying political upheaval and violence (*spoliation, usurpation, revolution, insurrection, altercation, expugnation, invasion*). And mental processes, such as thought and emotion, were conveyed in lexemes new to letters such as *contemplation, affection, imagination, circumspection, comprehension, and compassion*. It is likely that the rich diversity of lexical fields offered by *-cion* derivatives was a key motivating force for their use in personal correspondence.

Overall, *-age* experienced the lowest rate of growth relative to its peers. Even so, in every sub-period the suffix did appear in a number of new forms denoting financial transactions (such as taxes): *coinage, groundage, stoppage, primage, quarterage, advowsonage, pawnage* and *soundage*. Several of these forms were early attestations in

English—*soundage, advowsonage, growndage, stoppage*—the last three of which were also hybrids. Thus, even with a low rate of aggregation, the hybrid forms in *-age* still suggest a relatively high level of naturalization, and the few neologisms suggest moderate productivity. Other lexical fields that contributed new forms were religion (*parsonage, pilgrimage, vicarage*), agriculture and farming (*tillage, pawnage*), and domestic space (*pottage, swepage*).

The suffix *-ment* shows moderate growth relative to its peers in all sub-periods. In CEEC2 and CEEC3 it patterns similarly to *-ness*, though by the end of the sixteenth century it has only half as many new types as the native suffix. The primary lexical fields which contribute to its growth are finance (*aprowement, (ap)praysment, repayment, deboursement, apporcement*), law (*inditement, mercement, imprisonment, accusement, arbitrament, araynement*), and clothing (*abilyments, areyment, vestement*). Several forms, such as *divorcement* and *introducement*, seem to be English creations.

In CEEC2, *-ity* shows the lowest aggregate growth. But in the sixteenth century it begins to gain new types at a high rate relative to its peers. Many of its new forms in CEEC2 are abstract descriptive states (*ambiguity, perpetuity, possibility, unity*). In the sixteenth century, the majority of new derivatives address various aspects of human disposition (CEEC3: *alacrity, benignity, emnity, graciousite, magnanymyte, malignitie, partiality, perplexity, sincerity, vanity*; CEEC4: *animosity, curiositie, hostilitie, importunity*). Many of these forms are attested in earlier genres in the fifteenth century (such as *benignity* in poetry), but they make their first appearance in these letters in the sixteenth century. The last sub-period also finds a number of new *-ity* derivatives that emerge from the discourse of logic (*absurdity, probability, validity*).

The preceding analysis of aggregation provides more details on the trends observed in the general type analysis: specifically, it identifies which suffixes appeared in the most new types in subsequent periods of English letter-writing and the primary lexical fields from which these types were drawn. The suffix *-cion* showed the highest aggregate growth in all sub-periods; *-age* demonstrated the weakest growth, especially in the sixteenth century. The suffix *-ment* trended with *-ness* until the end of the sixteenth century, and *-ity* experienced a surge of growth at the beginning of the sixteenth century. In every sub-period each borrowed suffix had a consistent group of lexical fields feeding these new types into general usage in letters, although in the sixteenth century writers using *-ity* began to draw from additional lexical fields, such as logic and human disposition.

6.3.3 Competing Forms

In terms of derivational morphology, pairs of lexemes are sometimes said to “compete” when they have similar semantics and share the same base but have different prefixes and/or suffixes. A PDE example would be the choice between *futility* and *futileness*. There is a reasonable argument to be made that there are no true synonyms—i.e., no two lexemes ever share the exact same semantics. Thus, it may be possible that no lexemes ever truly compete. Still, it is likely that some of these lexemes are close

enough in meaning that one might be substitutable for another with only some slight changes in denotative meaning or pragmatic force.¹⁶⁷

In order to further nuance the analysis on the effects of types on perceived productivity, in this section I consider all possible competing forms among the suffix types in this study. I assume that the presence of competing forms indicates increased transparency for suffixes: if two suffixes are known to attach to the same base (as observed within the same discourse), then they are more likely to be seen as potentially productive units of language. This study finds that there were very few competing forms in English letters, but that a number of competing forms were present in the early medical texts. Even so, the data are minimal, so it is difficult to draw too many conclusions about the impact of competing forms on suffixal productivity.

Only a few pairs of lexemes throughout the English letters could be considered competitive: *ableness/ability*, *confusedness/confusion*, *introduction/introductment*. The paucity of examples in letters makes it difficult to analyze the phenomenon further. But medical texts offered a greater number of potentially competing forms. Consider the following pairs:

durableness/durability
impetuousness/impetuosity
ponderousness/ponderosity
ventousness/ventosity
profoundness/profoundity
equalness/equality
stipticness/stipticity
pureness/purity
continuation/continuity

¹⁶⁷ At a corpus linguistics meeting, I pondered for several minutes whether *formulaicness* or *formulaicity* was a more appropriate word to say. A fellow linguist suggested the former is a reliable default, but that she would consider uttering the latter instead if she wanted to heighten her perceived prestige.

Other than the final example, all other pairs involve *-ness* and *-ity* as competing forms. Structurally, it is clear that several of the competing forms have bases which are morphologically complex. The *-able* in *durable* may be decomposable, as well as the *-ous* in *impetuous*, *ponderous*, and *ventous*. Using data from the *OED*, Anderson (2000) tracks such competition between rivals in the history of English, including *-ability/-ableness* and *-osity/-ousness*. Her data show that *-ness* and *-ity* attach to roughly the same number of bases ending in *-able* in the fifteenth century, with *-ness* attaching to a slightly wider range than *-ity* in the sixteenth century. She does not provide century-specific data for *-osity* and *-ousness*, though the aggregate data from all centuries reveal that *-ity* attaches to a significantly wider range of bases ending in *-ous* than does *-ness*. Unfortunately, the data from the CEEC cannot be compared to Anderson's findings, because the frequencies were too low to make assessments about which lexeme within each pair was more frequent. It was also impossible to make semantic generalizations: the pairs of lexemes all stem from a variety of lexical fields.

A reasonable question to ask here is, why would there be so few competing forms in letters and a larger set of competing forms in the medical register? Recall from the previous sections on frequency that letters were already less inclined to use *-ness* derivatives than were medical texts. One important pragmatic difference between the two genres is their differing orientations towards audience: medical writers were far more likely to explain difficult concepts, to gloss morphologically complex or "hard" words than were letter writers. This pedagogical orientation may have encouraged medical writers to employ more derivatives with *-ness* to make these terms more familiar, more

English-seeming than the borrowings might appear. It is impossible to know for certain, but perhaps *stipticness* might seem easier for a reader to process than *stipticity*.

In any case, this brief analysis provides some evidence that the much discussed competition between *-ity* and *-ness* in the history of English (e.g. Riddle 1985, Cowie 1998a, Anderson 2000)¹⁶⁸ was not really underway in the language of English letters—at least not on a lexeme-by-lexeme basis. It was, however, active in the earliest medical texts, perhaps spurred on by the pedagogical needs of science writers. This competition may have had an effect on the perceived productivity of *-ity*, but these frequencies were so small that the effect must have been slight at most.

6.3.4 Hybrid Forms

As noted in previous chapters, an additional sign of productivity is the presence of hybrid forms: lexemes that include bases and affixes from different languages. A suffix from one language source that is able to attach to bases from another source is said to have a wide productivity. As has been observed in all other genres in this dissertation, *-ness* has by far the most hybrid forms among all suffixes—both in letters and medical texts. In the CEEC can be found hybrids such as *bounteousness*, *strangeness*, *assuredness*, and *reasonableness*. The MEMT offers hybrids such as *buxumness*, *durableness*, *profitableness*, and *ventousness*.

As has been discussed in previous chapters, the only borrowed suffix to appear in hybrid forms within the corpora investigated in this dissertation is *-age*. While no hybrid forms with borrowed suffixes appear in the MEMT, there are several with *-age* in the

¹⁶⁸ Note, however, that Riddle (1985) questions the semantic equivalence of *-ity* and *-ness*. And Cowie (1998a) is cautious about claiming that these two suffixes are genuine competitors.

CEEC: *growndage*, *stoppage*, *tyllage* and *swepage*. These occur very infrequently, but they still indicate that *-age* had a wider set of bases to attach to compared to *-ity*, *-cion*, and *-ment*, all of which attach only to borrowed bases throughout the fifteenth and sixteenth centuries of the CEEC.

Occurrences of hybrid forms should not, however, be treated as a necessary condition for productivity. A few forms in the CEEC, such as *divorcement*, *introducement*, and *recantation*, seem to be original English derivations (i.e., with no attested Latinate source). So *-ment* and *-cion* in these cases are likely being employed to produce non-borrowed neologisms. Moreover, the higher the perceived productivity of each suffix in each sub-period, the more likely derivatives might have been derived as a borrowed base plus a borrowed suffix (rather than borrowed wholesale). This is especially true for individual derivatives whose bases outnumber their derivatives in terms of frequency of use in English. This concept will be explored further in the following section.

6.4 Evaluating Decomposability

6.4.1 Base-derivative Ratios

The preceding analysis of derivative types has provided a few ways to capture the relative productivities of different suffixes in earlier periods of the English language. Type frequencies, an analysis of the aggregation of new types, and the inspection of hybrid and competing forms have all provided evidence of the differing levels of naturalization and perceived productivity of borrowed suffixes in different genres and at different points in time. As useful as these measures are, they are the product of a macro-

level linguistic analysis from the eyes of a present-day linguist looking into the language of the past. The linguist with a birds-eye view of the relative aggregation of new types or the use of hybrid formations may be noticing patterns that were not necessarily felt by language users in the fifteenth century. The suffix *-cion*, for example, exhibits a wider range of types than all other suffixes in most periods and in multiple genres. But did speakers feel this effect?

While it is certainly useful to explore all possible indicators of and influences on productivity, it is also imperative to determine, as much as possible, how productive each suffix likely seemed to speakers living in different periods of time. This concept, perceived productivity, can be explored with a comprehensive analysis of the relative ratios of all derivatives and their bases in each historical period and in each genre. Unlike Baayen's accounts of hapaxes or this study's account of aggregating forms, these ratios provide a direct quantitative measure of the relative levels of productivity for different suffixes. Furthermore, this type of analysis at times allows the linguist to move beyond description and into explanation of productivity. That is, base/derivative ratios may help to explain *why* some suffixes are more productive than others, and why some individual derivatives drift away from their bases semantically. And finally, as seen in Chapter 4, these ratios help identify for each suffix which specific types were most likely to contribute to the perceived productivity of these suffixes within different genres.

As has been discussed in previous chapters, the rationale for a comprehensive analysis of base/derivative ratios is based on the work of contemporary scholars interested in morphological processing, namely Hay (2003). Hay has shown that derivatives of productive suffixes tend to occur far less frequently than their bases in

language use, while derivatives of unproductive suffixes tend to appear far more frequently than their bases. The relationship between base/derivative frequency and productivity depends crucially on the notion of decomposability—the more often a base (such as *pass*) appears relative to its derivative (*passage*), the easier it is for speakers to parse the derivative as two morphologically distinct units (*pass* + *-age*). Hay also collaborates with Baayen (2002) to demonstrate a causal link between parsability and productivity. Together they argue that Baayen's hapax-based measures of productivity correlate strongly with the number of decomposable derivatives for multiple suffixes.

Thus, in the absence of hapax-based analyses, an account of base-derivative frequencies can serve as one of the most reliable measures of potential productivity in diachronic studies of suffixation. In previous studies of borrowed suffixes in the history of English, some scholars have had an intuition that base/derivative ratios might have had an impact on productivity. Consider Gadde (1910: 70), who suggests that the development of the productivity of *-ment* in English may have depended directly on the concurrent usage of borrowed bases and derivatives:

Among the early adoptions there are such as *judgement*, *amendment*, *advancement* etc., i.e. formations by the side of which occur the verbs from which they are derived, and which accordingly may give rise to new-formations.

The availability of digital corpora, bolstered with our knowledge of morphological processing in PDE studies, makes it possible to evaluate the significance of base-derivative ratios on the development of the productivity of borrowed suffixes in English.

While Gadde's instincts may be correct—that the use of bases alongside derivations in earlier periods influenced new formations down the road—this study will

not directly evaluate this claim. Recall from discussions in previous chapters that, for derivations using Latinate and French material as both base and ending (e.g. *determination*), it is usually impossible to know whether or not a derivative is either a whole word borrowing or a composite form produced from a borrowed base (*determine*) and a productive suffix (*-ation*) in English. But by evaluating the relative frequencies of bases and derivatives, it is possible to predict whether or not individual types were likely to be perceived as either whole word borrowings or derivations combining two or more English morphemes. Moreover, base/derivative ratios can also shed light on the differing probabilities of individual suffixal productivity—that is, how much more likely *-ness* was seen as productive compared to *-ment* in the same genre or time period.

To construct this analysis, I counted the relative frequencies of bases and derivatives for each lexeme within each suffix type for all four periods of the CEEC and both periods of the MEMT. To account for orthographic variation and homophones, I sorted all words in the corpora with AntConc's WordList feature and inspected all potential bases for each derivative type in KWIC lists. Bases were counted only if they were the relevant part of speech for a specific suffix type—e.g., for deverbal *-ment*, *judge* (v.) was counted while *judge* (n.) was excluded.¹⁶⁹ Inflectional morphology on bases was assumed to be transparent, so that all inflected forms (e.g., *judge*, *judges*, *judgeth*) were counted. Different derivatives with the same base (e.g., *mitigation* and *mitigative*) were

¹⁶⁹ I readily admit that both nominal and verbal bases may have contributed to the perceived decomposability of certain derivatives. But I opted to take a conservative approach and evaluate only those forms linking the deverbal pattern (verbal bases becoming nominals).

not considered in this analysis, though it is possible (perhaps likely) that they too aided parsability.¹⁷⁰

After conducting the counts, I calculated the ratios for each base/derivative pair in each period and genre. The ratios of each base to each derivative were then sorted from highest to lowest. Adopting Hay (2003)'s threshold for parsability, I categorized all derivatives whose ratios were above 1 (i.e., where the base is more frequent than the derivative) as "decomposable," and all those below 1 as "undecomposable."¹⁷¹

The decomposable lexemes were then analyzed quantitatively. For each suffix within each subperiod of each genre, three distinct metrics were calculated: (1) the token-parsing percentage; (2) the type-parsing percentage; and (3) the mean parsing ratio. The token-parsing percentage, which is calculated by dividing the total number of parsable derivatives by the total number of derivatives for each suffix, is adapted from Hay and Baayen's (2002) discussion of token-parsing ratios. The authors discover that this percentage correlates strongly with the number of hapaxes, which is the typical indicator of productivity:

¹⁷⁰ For *-cion* derivatives, I also excluded potential bases ending in *-ate* that were nominative. Many of these forms, such as *alterate* (cf. *alteration*) were borrowed from Latin past participles and used as English adjectivals or nominals (*alterate* 'that which was altered'). While it is possible these forms may have contributed to the parsability of *-tion* derivatives, they were excluded since (as adjectives and nouns) they are not part of a deverbal derivation for *-tion*. Plus, they seem distinctly different from anglicized past participles (e.g. *altered*) which seem to be more directly linked to the deverbal pattern. In any case, while these lexemes should be acknowledged, they occurred infrequently in the corpus.

¹⁷¹ Hay and Baayen (2002) determine a more complicated threshold, one that is somewhat higher than the $x=y$ line (where the ratio is 1:1). In other words, based on a deeper analysis of selected suffixes (such as *-ness*) and parsing retrieval times in present day language processing, they find that it takes a slightly higher frequency of bases to enable parsing. But it's unclear whether or not this parsing line changes further based on the suffix type and period in which a suffix is used. And Hay and Baayen acknowledge that there is likely no single, categorical threshold which divides derivatives strictly into decomposable and undecomposable categories. Rather, they advocate a continuum approach, which suggests derivatives are more or less decomposable depending on the value of the ratios. Because the parsing line in Baayen and Hay (2002) has not been tested further on a wider range of suffixes—and because processing studies cannot confirm the parsing tendencies of people in earlier historical periods—Hay's original simplification in her (2003) work should suffice as a rough threshold for parsing in this study.

Hapaxes contribute extremely minimally to overall token counts, and there is no a priori reason we should expect the number of hapaxes to correlate with the total number of tokens which are parsed. Yet we *do* see this relationship, and the reason we see it (we suggest), is because there is a causal relationship between parsing and productivity. The larger the number of tokens that is parsed, the more activated and robust the representation of the affix is, and so the more available it becomes for the formation of new forms. (2002: 226)

Recall that hapaxes cannot be reliably counted in small, historical corpora and thus cannot serve as a measure of productivity. However, because there is likely a direct relationship between token-parsing ratios and hapax frequencies, these token-parsing percentages can stand in for hapaxes as one indicator of perceived productivity.

Similarly, Hay and Baayen find that type-parsing percentages—the number of parsable types divided by the total number of types—also correlate with hapaxes and thus productivity. The higher the type-parsing percentage, the more likely a suffix would have been seen as potentially productive.

To provide a more nuanced analysis, I also calculated the mean parsing ratio for each suffix in each period. This measure was determined by averaging all the base/derivative ratios for each derivative type for each suffix within each period. Hay (2003) notes that higher base/derivative ratios indicate higher levels of decomposability; a derivative with ratio 1.1 might be decomposable, but far less so than a derivative with ratio 10.1. The mean captures the parsability of an “average” derivative of a suffix type in each period. It has no inherent value, but it allows one to compare data to determine which suffixes had a greater “weight” of highly decomposable forms. It is assumed here that, the higher this weight, the more likely a suffix may have been perceived as productive.

And finally, I conducted a qualitative analysis of the decomposable forms for each suffix to determine if there were any observable lexical patterns in sets of decomposable forms. For example, as has been noted in this and preceding chapters, the suffix *-tion* was used in a wide variety of lexemes from an array of lexical fields. But did these fields contribute equally to its perceived productivity? Or were some fields more likely to produce decomposable forms than others? This section will qualitatively assess and expand on Hay and Baayen's point that "Not all words contribute equally to the productivity of an affix" (2002: 226).

Before the analysis was conducted, my hypothesis was the following: because *-ness* is a native form producing far more hybrids than the borrowed suffixes, it was likely to have the highest parsing percentages out of all suffixes in this study. This hypothesis would be predicted based on Baayen and Hay's findings—mainly that productive suffixes ought to emerge in contexts in which they are seen in a number of decomposable derivatives. My research has largely confirmed this hypothesis and, as will be seen below, has discovered several other aspects of the synchronic and diachronic development of perceived suffixal productivity among borrowings in fifteenth- and sixteenth-century English.

6.4.2 Type and Token Parsing Percentages: Synchronic Differences and Diachronic Development

The type parsing percentages in Table 6.5 below illustrate the relative differences in perceived productivity among the five suffixes in each of the four sub-periods of the CEEC:

	<i>-age</i>	<i>-ment</i>	<i>-ity</i>	<i>-ness</i>	<i>-cion</i>
CEEC1	21.4	22.2	7.7	47.4	23.9
CEEC2	39.3	40	7.41	58.5	25.8
CEEC3	22.2	40	25.4	60	30.5
CEEC4	30.4	32.8	26.6	65.2	40.2

Table 6.5: Type-parsing percentages in different sub-periods of the CEEC

In all four periods, *-ness* is characterized by a significantly higher number of parsable derivative types than its borrowed peers. In the earliest period, *-cion*, *-ment*, and *-age* have approximately half the proportion of decomposable types as *-ness*, with *-ity* exhibiting a much smaller percentage than its peers. Both *-cion* and *-ity* experience only small changes in these ratios in the latter half of the fifteenth century, while *-age*, *-ment*, and *-ness* see significant increases in the use of bases relative to their derivatives. By the first half of the sixteenth century, however, *-ity* and *-cion* see significant jumps in the overall number of decomposable derivative types. Suffixes *-ness* and *-ment* maintain similar levels of decomposability from the fifteenth to sixteenth centuries, whereas *-age* experiences a significant drop. Towards the end of the sixteenth century, however, *-age*, *-ment*, and *-ity* all hover near the thirty percent mark, while *-cion* jumps to forty percent and *-ness* to a CEEC high of sixty-five percent of decomposable derivative types.

In terms of assessing productivity, there is strong evidence here that *-ness* was consistently perceived as a significantly more productive suffix than its borrowed peers throughout the fifteenth and sixteenth centuries. Its closest semantic competitor, *-ity*, was perceived as a much less productive unit than its borrowed peers throughout both centuries. The remaining suffixes were somewhere between *-ness* and *-ity* in each sub-

period, with *-ment* and *-age* showing higher perceived productivities than *-cion* in the late fifteenth century and *-cion* exhibiting a higher number than the other borrowed affixes in the late sixteenth century.

Claims of productivity based on type-parsing percentages can be corroborated by token-parsing percentages. It is possible a suffix could have a high percentage of parsable types with very low frequencies of actual use of those types. In this case it would be a mistake to immediately declare a high perceived productivity for such a suffix, since the parsable types may not have been frequent enough to regularly activate the decomposability of the suffix. Token-parsing percentages are thus a useful complement to the type-parsing ratios because they illustrate the relative frequencies of decomposable derivatives. More specifically, they reveal the probability that a particular derivative token was parsable whenever a writer used it or reader encountered it.

Confirming the type-parsing analysis, trends similar to those in Table 6.5 can be observed in the token-parsing percentages below in Table 6.6:

	<i>-age</i>	<i>-ment</i>	<i>-ity</i>	<i>-ness</i> w/o <i>highness</i>	<i>-ness</i> w/ <i>highness</i>	<i>-cion</i>
CEEC1	12.5	10.7	1.33	32.5	27.1	14.3
CEEC2	23.3	56.9	0.93	64.5	55.5	33.8
CEEC3	26.7	37.6	8.52	53.9	19.6	28.6
CEEC4	42.3	45.9	18.4	62.6	50.2	37.4

Table 6.6: Token-parsing percentages in different sub-periods of the CEEC

Here I have included the calculations for *-ness* both with and without *highness* in each sub-period. Recall that *highness* was excluded from the analysis in most of this chapter because its numbers in period 3 were unusually high. In the case of token-parsing ratios, however, it is likely that *highness* may have had a significant impact on the overall

perceived parsability of *-ness*. Thus, calculations with and without the lexeme were considered. In general, whether or not *highness* is excluded, *-ness* tends to have the highest percentage of parsable tokens among all suffixes in this study. The glaring exception is period CEEC3, where the unparsable *highness* dwarfs the perceived productivity of *-ness* tokens to twenty percent—less than all other suffixes besides *-ity*.¹⁷² Other than this period, the token-parsing percentages tend to confirm the conclusions of the type-parsing analysis, that *-ness* has the highest perceived productivity of all suffixes.

Similarly, the token analysis corroborates conclusions about *-ity*, which has a very low token-parsing percentage. In particular, its token-parsability approaches zero in the fifteenth century, though there is an increase in the second half of the sixteenth century to eighteen percent. It is clearly the suffix with the lowest perceived productivity among all suffixes in this study.

Once again, *-cion*, *-age*, and *-ment* are somewhere between *-ness* and *-ity* in terms of their token-parsing percentages. But after the first half of the fifteenth century, *-ment* gains much higher percentages of decomposable tokens compared to *-cion* and *-age*. By this measure, it is likely the suffix with the second highest level of perceived productivity (behind *-ness*).

An interesting trend apparent in Table 6.5, and to a lesser extent in Table 6.6, is the general increase in parsability of all suffixes, both borrowed and native, during this two-century timespan. In Table 6.5, the type-parsing percentages steadily increase for *-cion*, *-ness*, and *-ity*, while *-age* and *-ment* have an upward but more variable trend. In

¹⁷² The effect of *highness* may not be inconsequential, as Hay and Baayen find that the more often speakers encounter unparsable derivatives, the less likely that suffix will be seen as productive. So period 3 may in fact be considered a low point for the perceived productivity of *-ness* in the discourse of personal correspondence.

Table 6.6, all suffixes but *-ity* show at least double the percentages of decomposable lexemes in the second half of the fifteenth century compared to the first half. The suffix *-ity* increases its decomposable tokens thereafter, while the other suffixes remain relatively high. These trends are due to one or two linguistic possibilities: (1) in general, letter writers began to use more bases relative to derivatives as the genre developed over time; and/or (2) in general, writers began to introduce more derivatives that were relatively infrequent compared to bases that were in relatively more frequent use. Especially in the case of borrowed derivations, the first possibility was likely in effect. A lexeme such as *communication* follows this pattern, where the adoption of the derivative historically precedes use of the relevant base (*communicate*). Perhaps because of the increasing perceived parsability of the suffix due to other lexemes in the same time period, the base for this initially undecomposable form tends to increase in usage. In other words, the use of the base may be motivated by back-formation as much as by direct borrowing from Latin. The second possibility, in which more and more derivatives are introduced with relatively infrequent usage compared to their bases already in relatively frequent usage, is identifiable in lexemes such as *diversity* and *groundage*. In the latter case, the perceived productivity of *-age* due to its overall number of parsable types and tokens may have led to the coinage of a hybrid form with a frequent base (*groundage*). In the case of *diversity*, the increasing number of parsable types in English may have aided its derivation with an increasingly seen-as-productive *-ity* (*diverse* + *-ity* = *diversity*); however, the suffix's very low token-parsing percentages may suggest *diversity* was a direct borrowing rather than a derivation.

In sum, the preceding analysis suggests that, based on their overall type- and token-parsing percentages, the suffixes can be generally ranked in order of their perceived productivity. From most productive to least productive, the order is as follows:

-ness > -ment > -age/-cion > -ity

In general, all five suffixes increased in perceived productivity over time, due to the more frequent use of bases relative to derivatives and the use of new derivatives that were far less frequent than bases already in use in English.

6.4.3 Mean Parsing Ratios

The preceding section offers a clear method for quantifying perceived productivity generally. Yet it does not take into account the relative levels of decomposability among parsable forms, and the contributions of those varying levels of parsability to the overall perceived productivity of each suffix. Thus, the mean parsing ratio is considered. This ratio increases in size if there are a relatively high number of derivatives whose bases outnumber them substantially. Similarly, the ratio decreases as the number of low or zero ratios increases (e.g., if there is a significant number of derivatives in which no base is used). Table 6.7 provides the mean ratios for all suffixes and periods in the CEEC:

	<i>-age</i>	<i>-ment</i>	<i>-ity</i>	<i>-ness</i>	<i>-cion</i>
CEEC1	1.12	1.97	0.76	18.26	1.5
CEEC2	15.6	3.97	2.48	17.16	2.81
CEEC3	8.37	3.67	6.91	12.35	2.47
CEEC4	4.31	2.47	2.18	9.49	2.12

Table 6.7: Mean parsing ratios in different sub-periods of the CEEC

Before discussing these numbers in more depth, an important caveat should be made here: the mean ratio has little inherent meaning, and it should probably not be interpreted as a precise measure of the overall parsability of a suffix.¹⁷³ Rather, it should be considered in relation to other mean values and in consultation with the relevant percentages found in the type- and token-parsing analyses.

Here again we see clear evidence that *-ness* has a much higher level of perceived productivity: its mean parsing ratios are consistently significantly higher than those of all other suffixes. This is due to the fact that many *-ness* derivatives, such as *goodness* and *greatness*, have very high parsing ratios in all subperiods: bases such as *good* and *great* were very common in letter-writing. Because *-ness* had a number of forms that were not only decomposable but highly decomposable—as indicated by its high overall mean ratios—it must have been perceived as highly productive.

Other than period CEEC1, the suffix *-age* exhibits a relatively higher mean than the other borrowed suffixes. Several of its derivatives, especially *usage* and *passage*, are highly decomposable. They likely increased *-age*'s overall perceived productivity. The other suffixes tend to have fairly low means in most periods, though *-ment* tends to be

¹⁷³ For example, the value of *-ity* in period CEEC2 is 2.48, well above the parsing threshold of one. So one might interpret this value as a direct measure of *-ity*'s parsability in this period. But we know from token-parsing and type-parsing analysis that *-ity* had few parsible types and very few parsible tokens, almost zero. The value here is due to two derivatives, *possibility* and *privity*, which occur exactly once each but have highly frequent bases. No other derivatives in the period are parsable. So despite this value, it is unwise to claim that *-ity* would have had a high likelihood of parsability.

slightly higher than *-ity* and *-cion* (except for period CEEC3, where *-ity* has a surge of more highly decomposable forms). These low ratios are due mostly to the fact that these suffixes all have a large number of null ratios—that is, there are a significant number of derivatives that occur without any use of their bases. The high number of opaque forms must have certainly diminished the potential perceived productivities of these suffixes.

In light of this analysis of mean parsing ratios, the ranked list should be amended to show that *-age* was likely more productive than the type- and token-parsing percentages initially suggested. All measures of parsability considered, one likely ranking¹⁷⁴ of suffixes from highest perceived productivity to lowest perceived productivity would be the following:

-ness > *-ment* > *-age* > *-cion* > *-ity*

The exact ranking order may be less important than the following observable trends in letters, which represent our closest approximation to everyday speech in English during the fifteenth and sixteenth centuries:

(1) The suffix *-ness* consistently had the highest perceived productivity among all suffixes in this study. This is to be expected because it is the only native suffix under investigation, and because it has been shown by Anderson (2000) to produce neologisms throughout the fifteenth and sixteenth centuries.

(2) *-ity* was consistently the suffix with the lowest perceived productivity.

¹⁷⁴ If one wants to place an even higher value on the mean parsing ratios, s/he might rank as follows: *-ness*, *-age*, *-ment*, *-cion*, *-ity*.

(3) The perceived productivities of *-age*, *-ment*, and *-cion* were consistently in between *-ness* and *ity*, though overall *-age* and *-ment* likely had higher perceived productivities than *-cion*.

(4) All suffixes tend to increase in perceived productivity throughout the fifteenth and sixteenth centuries.

This last finding is particularly interesting since it correlates with Anderson's (2000) observation that derivational productivity generally increases for all native and borrowed suffixes from the late medieval period up to the seventeenth century. It is possible that the increasing use of bases relative to derivatives promoted the increased analyzability of derivational suffixes, which in turn promoted increased neologizing. Such a cause-and-effect claim is impossible to prove, of course, but the correlation between the rise of perceived productivity and the rise of new derivations in English certainly deserves further study.

6.4.4 The Effect of Genre

While the preceding sections have provided evidence of the trends and perceived productivities of suffixes in the fifteenth and sixteenth centuries, it should be noted that these data represent a register of a relatively informal, intimate, and everyday register of English. But when the results are compared to those found in the highly learned genre of medical writing, it is possible to observe both corroboration of some of the trends in letters as well as some differences. Table 6.8 below presents the type-parsing percentages, token-parsing percentages, and mean parsing ratios within each genre in

each period side-by-side. Type-parsing percentages appear first, followed by a slash and then the token-parsing percentage. The mean parsing ratio appears in parentheses.

	CEEC1	MEMT1	CEEC2	MEMT2
<i>-ness</i>	47.4/32.5 (18.26)	67/54.6 (15.58)	58.5/64.5 (17.16)	67.9/45.3 (9.5)
<i>-ity</i>	7.7/1.33 (0.76)	27.3 /9.8 (4.02)	7.41/0.93 (2.48)	11.6/4.9 (0.79)
<i>-age</i>	21.4/12.5 (1.12)	50/75.7 (28.1)	39.3/23.3 (15.6)	27.3/44.8 (6.66)
<i>-ment</i>	22.2/10.7 (1.97)	16/2.7 (5.12)	40/56.9 (3.97)	19 /8.3 (1.46)
<i>-cion</i>	23.9/14.3 (1.5)	16.7/11.6 (1.67)	25.8/33.8 (2.81)	17.6/17.2 (1.29)

Table 6.8: Type-parsing percentages, token-parsing percentages, and mean parsing ratios for the CEEC and MEMT

In both genres, *-ness* remains the suffix with highest perceived productivity. In fact, in medical texts it has even higher type-parsing percentages than in letters. This difference is likely due to medical writers' preference for using a high number of adjectival bases, such as colors (*white, green, red*) and tactile characteristics (*cold, moist*), in their descriptions of conditions and procedures. The highly frequent use of these bases alongside the less frequent use of the deadjectival nominals ensured a relatively high perceived productivity for *-ness* within this genre. A similar though smaller effect can also be observed for *-ity* in the MEMT: it has higher type- and token-parsing ratios than it does in the CEEC. Bases such as *profound, diverse, viscous, and spongiuous* were commonly used as descriptors in medical protocol, more often than their nominal derivatives *profundity, diversity, viscosity, and spongiosity*.

Interestingly, *-ment* and *-cion* evidence a significantly lower perceived productivity in medical texts than in letters. The token-parsing percentages of *-ment* are

particularly low compared to all other affixes (besides *-ity* in MEMT2). These differences can be explained by pragmatic forces particular to each genre. One evident difference in the genres is the letter-writers' interest in negotiating social and financial relationships via epistolary discourse: verbal bases such as *agree* and *pay* occur far more frequently than their nominalizations. Medical writers, on the other hand, were far less inclined to use the verbal bases from which nominalizations were derived. This tendency may pre-figure the general preference for morphologically complex nominalizations over paraphrases in scientific discourse in later centuries of English, which has been observed by many scholars (e.g., Halliday 1988, Banks 2005). In fact, Banks demonstrates that the seventeenth- and eighteenth-century preference for nominalization in scientific writing may have been due to direct influence from Latin, from which many works were translated. His research identifies, in particular, the use of a number of *-ment* and *-cion* forms directly in parallel with *-mentum* and *-tio* in the Latin source for a text by Newton. In my research, it is clear that the scientific preference for nominalizations was underway from the beginning of the medical texts genre. And since the great majority of early medical texts were direct translations of Latin originals, it is reasonable to speculate that they too were influenced by lexical and grammatical patterns apparent in the source language.¹⁷⁵ Ultimately, the choice of nominalizations over paraphrases containing verbal bases in scientific texts had morphological consequences: it reduced the base-to-derivative ratios for each derivative, thereby decreasing the parsability and perceived productivity of *-ment* and *-cion* within this genre.

¹⁷⁵ This must remain reasoned speculation at this point, as I did not have ready access to the Latin originals for the English texts of the MEMT. Even so, the introductory material to the MEMT makes it clear that the majority of these texts were translations of Latin materials--a critical difference between this genre and that of personal correspondence.

Unfortunately, it is difficult to draw any firm conclusions about *-age* in early medical texts. In the entire fifteenth century, only three *-age* forms are parsable: *pottage*, *usage*, and *passage*. Few different types of *-age* derivatives are used, and the parsable types are the most common. Thus, *-age* evidences higher numbers of perceived productivity in Table 6.8, but this productivity must have been limited by the relatively few types and tokens in use by medical writers. It is difficult to assess if the affix was more or less productive in medical texts than in personal correspondence.

Overall, it is clear that genre plays an important role in the perceived productivities of different affixes. In the specific fifteenth-century cases analyzed in this study, it turns out that, compared to letters, scientific texts show a greater parsability of deadjectival nominals (from *-ity* and *-ness*) and a lesser parsability of deverbal ones (from *-ment* and *-cion*).

6.4.5 Lexical Analysis

One of the benefits of conducting a comprehensive analysis of base-derivative ratios is that it is possible to identify the specific derivatives that contributed most to the productivity and parsability of each suffix in each genre. Those derivatives can then be further analyzed to determine which classes of lexemes were most responsible for impacting the productivity of borrowed suffixes as they developed in English. As Hay and Baayen note, not all derivatives contribute equally to the productivity of an affix, so it is critical to identify those that were most influential on the morphological processes which affected borrowings in the fifteenth and sixteenth centuries.

Below I list the lexical fields most likely to contribute parsable derivatives for each borrowed suffix within each genre, with a brief prose description and representative examples of specific lexemes.

-age

The most parsable derivatives in all periods of the CEEC tend to be the deverbal ones (*passage, usage, cariage, stoppage*, and occasionally *mariage*). The parsable denominal derivatives typically have people as referents (*personage, parsonage, cousinage, vicarage, patronage*). The most frequent parsable form in medical texts is *pottage*—a useful lexeme for describing concoctions, medicines, and other types of mixtures that would be made in a pot. Like personal correspondence, the derivatives that contributed most to the productivity of *-age* were deverbal (*passage, usage*).

-ity

Very few derivatives contributed to the parsability of *-ity* in letters in the fifteenth century. But by the sixteenth century, many parsable forms began to appear, particularly those that described aspects of human character: *benignity, vanity, sincerity, humility, graciousity, nobility*. Many of these derivatives were deployed because of conventions of politeness specific to epistolary discourse, as can be observed in the following example:

(6.1) . . . I shall employe and endevoir meself most earnestly with all my power according to your most abundaunt **benignite** towards me your most humble seruaunt . . .

(Thomas Cromwell 1539, emphasis mine)

Here the writer appeals to King Henry VIII by constructing a humility topos, much of which is formulaic (“your most humble servaunt”). But part of this rhetoric depends on his ability to praise his superior, so he additionally compliments the king’s “benignity” in order to heighten the king’s stature and de-emphasize his own. These sorts of conventions in letters were the source of a number of the most parsable *-ity* derivatives within sixteenth-century letters. Otherwise, many of the parsable *-ity* derivatives were used to describe abstract characteristics of objects or ideas (*particularity, simplicity, diversity, possibility, generality*).

In early medical texts, the lexical field most influential in contributing parsable derivatives was the set of words used to describe particular aspects of the human body, especially potential symptoms of disease or signs of health (*gibbosity, unctuousity, spongiousity, cancrossity, viscosity, carnosity*). There was one abstract term that was highly parsable and used fairly frequently: *diversity*.

-ment

The most parsable derivatives ending in *-ment* in the genre of personal correspondence came from a variety of discourses.¹⁷⁶ Some were legalisms associated

¹⁷⁶ Note that these lexical fields overlap partially with those described in the aggregation study earlier in this chapter. For *-ment*, the fields of law and finance seem to contribute many new forms as well as contain a number of the most parsable derivatives in the CEEC. But while the field of clothing contributed several new types, many of its derivatives were not particularly parsable. This should not be too surprising, since

with the penal system (*indytment, punishment, imprisonment*). Several addressed finance (*payment, assignment*). Several were used by writers to negotiate social interactions and authority (*agreement, appointment, commaundment*). And a couple of the most frequent decomposable lexemes could not be easily classified into unique lexical fields—e.g., *establishment* (in its religious and secular senses) and *advertisement* (signifying ‘announcement,’ ‘information,’ and ‘admonition’). Far fewer *-ment* derivatives were parsable in early medical discourse. In addition to *commandment*, the most parsable types described treatments (*anoyntement, nourishment*) or general diagnoses (*temperament*).

-cion

As might be predicted from its strong lexical diversity, *-tion* exhibits the widest range of lexical fields which contributed parsible forms to the genre of letters. Those include the religious (*temptation, salvation, confession, profession, presentation*); the legal (*ratification, examination, inquisition, determination, presentation*); the political (*administration, confession*); the mental and emotional (*disposition, contentation, satisfaction, apprehension*); and the verbal (*declaration, proclamation, recommendation, information, profession*). This last category seemed particularly useful in the genre, as writers often used letters to describe, record, or create a variety of speech acts for a number of purposes. One of the most frequently used speech acts (Watt 1993: 127-33) involves the use of the base *recommend* and, less often, *recommendation*, as part of a

there is no reason to assume that fields that produce new types would necessarily be the same as those with the most parsible types.

politeness convention adapted from the use of ‘se recommande’ in French letter-writing styles:

(6.2) Ryght worschyppffull syrs and my reuerent mastyr , afftyr all dew
recommendacon precedyng I lowly recommend mee vnto yowr mastyr schyppys
(William Cely 1488)

Here “recommendacon” serves to underscore the writer’s humility and recognition of the addressees’ authority. Because the derivative occurred far less frequently than the base in these frequently used formulas, it contributed to the decomposability of *-cion* within epistolary writing.

The most parsable *-cion* derivatives in medical texts come from two primary categories: mental reasoning and medical procedures. While the former category also contributed parsable derivatives in the genre of letters, the specific lexemes differ in medical texts. The two decomposable derivatives, *consideration* and *determination*, are used in assessing or diagnosing various bodily concerns. Medical procedures include *mundification*, *curation*, *purgation*, *infusion*, *compression*, and *decoccion*. All of these technical procedures were accompanied by the more frequent use of their verbal bases.

6.5 Other Qualitative Considerations

In addition to the preceding quantitative and qualitative assessments of specific suffixes’ productivity based on their decomposability, the following qualitative analyses provide supplementary information about the use and naturalization of borrowed

derivatives in English and the perceived productivity of their suffixes. The primary phenomena to be considered are glossing and homoeoptotons and polyptotons.

6.5.1 Glossing and Naturalization

In both genres, and in medical texts in particular, many of the borrowed derivatives were glossed—defined with paraphrase or with a close synonym consisting of native word stock and/or (presumably) more familiar borrowed word stock. Glossing reveals much about the perceived naturalization of derivatives: writers who gloss borrowings must feel, at some level, that their audience may think those derivatives are hard words. First, consider the following examples from letters:

(6.3) at there be 12 hulkes laden with cordadge which ys cables & soch lyke furnytüre

(Francis Wyndham 1587; addressed to Nathaniel Bacon I)

(6.4) and sche tellyth me sche schulde hawe rayment- as a gowne and oder thyngys

(William Cely 1482; addressed to George Cely)

Example (6.3) demonstrates that Wyndham must suspect that *cordage* would be an unfamiliar word for his brother-in-law, Nathaniel Bacon. Interestingly, he chooses other borrowings, *cables* and *furnytüre*, for this gloss; these lexemes are presumably more familiar and less hard in this period than *cordage* or even *cord*. Similarly, in (6.4) William Cely glosses *rayment* for George Cely with the less hard borrowing *gowne*¹⁷⁷ and much more familiar native idiom “and oder thyngys.” Such glossing occurs

¹⁷⁷ According to the *OED*, the word *gowne* was first borrowed in the late fourteenth century, approximately half a decade earlier than the first uses of *rayment*.

relatively infrequently in the CEEC. But these examples suggest that borrowings had different levels of perceived hardness. And derivatives, even if used in personal correspondence, sometimes needed to be familiarized for readers.

Perhaps more predictably, medical writers were more likely to gloss difficult terms. Their texts were intended to be procedural manuals or textbooks (of a sort), so their pedagogical orientation must have encouraged writers to be as explicit and clear as possible.¹⁷⁸ Consider the following examples:

(6.5) After, forsop, þat þe acuite .i.e., sharpneȝ is eked. And þe malice in corroding þe capacite is augmented with-out escar, it is said corrosyue.
(*Chauliac Ulcers* MEMT1)

(6.6) And it semep after Auicen þat it is named Cancer for one of .2. þingeȝ: Ouþer for his tenacite .i.e. holdyng wiþ þe membre, as holding of þe Cancer .i.e. crabbe with þat þing þat it honteth or takeþ
(*Chauliac Ulcers* MEMT1)

(6.7) then erly the next day folowyng he toke a lavament i.e. wasshing and the day than folowing he toke agayne the forsayde sirup.
(*Torella's Tretece of the pokkis* MEMT2)

(6.8) of woundeȝ of nerueȝ, Of cordeȝ & of ligamenteȝ, In which is treted of puncture of nerueȝ, Of inscision of nerueȝ, Of a nerue denuded .i.e. naked or bare, Of contraccioun .i.e. shrynkynge and conquassion i.e. brissyng of nerueȝ.
(*Chauliac Wounds* MEMT1)

¹⁷⁸ Glossing may have been a more general characteristic of vernacular texts in the late Middle English period. Vernacular poems (Chapter 5) and Wycliffite texts (Chapter 4) have also shown a tendency to gloss a number of borrowed derivatives pertinent to this study.

When glossing derivatives, medical writers tended to replace them with close synonyms that typically consisted of native word stock. One strategy particular to *-ity* can be observed in example (6.5). As observed in other genres, a derivative in *-ity* (*acuite*) is juxtaposed with a close native derivative in *-ness* (*sharpness*) in order to make its meaning clearer. But also note that a different derivative, *capacite*, is not glossed: it is perhaps considered a less hard word than *acuite*. Time-depth in the language cannot be a reason for this difference, as the *MED* suggests that this entry is the first citation for both lexemes in English. Frequency of use may be a factor, however, since in this sub-period *capacite* is used five times (and in a number of texts) while *acuite* is only used once. Thus, by analyzing patterns of glossing, it is possible to show that there are some relative levels of hardness among *-ite* derivatives within this genre.

Compare the substitutional strategy apparent in (6.5) to that in (6.6). Here *tenacite* is redefined with a native gerundial form ending in *-ing*. This replacement strategy is more typical for borrowed derivatives, as examples (6.7) and (6.8) illustrate. The lexeme *lavament* is replaced with *wasshing*, and *contraccioun* with *shrynking*. Even a borrowing with an *-ing* suffix, *brissyng* ‘bruising,’ is used to gloss *conquassion*. But note that *inscission* in example (6.8) is not glossed, so here too there must be relative levels of naturalization among *-cion* derivatives. In this case, both time-depth and frequency may be a factor in the seeming differences in levels of naturalization. The lexemes *conquassion* and *contraccioun* are both first cited in English in the excerpt listed in (6.8), which the *MED* dates at 1425. The former lexeme is used only once in the first period of the MEMT, while the latter is used four times. But *inscission* is first cited 25

years earlier than the other two lexemes, and it is used twenty times in the first sub-period of the MEMT.¹⁷⁹

Overall, examples (6.3) through (6.8) demonstrate that glossing was occurring for all derivative types in this study: *-age*, *-ment*, *-ity*, and *-cion*. The occurrence of glossing is not, in and of itself, remarkable in this period. But it provides direct evidence that fifteenth and sixteenth writers felt that many of these derivatives were not fully naturalized—and were certainly less naturalized than their native equivalents—within two very different genres.

6.5.2 Polypoton, Homoeoptoton, and Analyzability

Recall that, in Chapter 4, homoeoptoton and polypoton were figures that relied on borrowed derivational morphology to create various rhetorical effects in Middle English prose. These figures likely had an impact on perceived productivity as well. Because homoeoptotons foreground lexemes with the same ending, they encourage readers to analyze that ending as a suffix that can attach to multiple bases. Since polypotons display bases near their derivatives, they encourage readers to perceive the ending as a detachable unit of language. Examples of these figures have already been found in several different Middle English genres: in economic records of London guilds (Chapter 3); in religious prose (Chapter 4); and end-rhymed poetry (Chapter 5).¹⁸⁰

¹⁷⁹ It is also reasonable to suspect that *incision* might have been a generally familiar term for medical practitioners because it was a commonly used procedure in surgery.

¹⁸⁰ All end-rhymes can be considered homoeoptotonic, but some polypotons were also discovered in Middle English poetry.

The genres investigated in the present chapter—personal letters and medical texts—also employ these figures. Consider examples (6.9) through (6.12) from personal correspondence below:

(6.9) . . . hath been told me, with gret adjurations and obtestacions of secrecie; for which purpose I directe thie

(Stephen Gardiner 1545)

(6.10) . . . halfe of suche a disempler , whose confession and contrition stuffed with hipocrisey must necessarilly bringe . . .

(John Saunders 1574)

(6.11) . . . the men of werre went oute with their bagges & bagages

(Thomas Cromwell 1537)

(6.12) . . . sauynge that my brodyr hathe gotyn a pardon for the alyenacion that the Bochop of Wynchestyr alyenyd

(William Paston III ca. 1480)

It may be initially surprising that a relatively informal genre such as personal correspondence might contain rhetorical figures such as these. But recall that letters had their own rhetorical practices in the fifteenth and sixteenth centuries¹⁸¹, so it is not out of the question that letter writers might employ homoeoptotons and polyptotons. Examples (6.9) and (6.10) illustrate homoeoptotonic pairings in *-cion*. A polyptoton with *-age* may appear in example (6.11), and one with *-cion* in example (6.12). It is of course possible that these latter two examples are unintended polyptotons. But whether or not they were intentionally rhetorical figures, the linking of base to derivative would still have a morphological effect—a more transparently detachable suffix.

¹⁸¹ Cf. Nevalainen and Raumolin-Brunberg (1995) and Richardson (1997), especially their discussions of *dictamen* in English letters.

In science texts, bases were frequently used nearby their derivatives, as seen in example (6.13):

(6.13) Anothir take oyle of olyue and white wyne or water a littell but of the oyle a goode porcion & do hem togedir & treveyle hem togeder with a spone or with an oþer instrument till it be thike as enoyntment then enoynt the sore often tymes with this oyntment

(*Leechbook* MEMT1)

To a modern reader this repetition may seem redundant. But the polyptotonic language may have been intended to help the explanations of procedure cohere. Or it may simply be a pedagogical strategy to make relatively new words in the vernacular such as *enoynt* and *oyntment* stick in the minds of those learning these procedures.

Homoeoptotons were also frequent, particularly with *-ness* and *-ity*:

(6.14) Operacioun forsoth is in worthynes and highnes and fairnes in myght in swiftnes in filthed

(*De XII Portis* MEMT2)

(6.15) Ouer þat, of þingeꝝ more noying to vlcereꝝ is meridionale day & humidite of þe aier with calidite.

(*Chauliac Ulcers* MEMT1)

(6.16) take of þe propre differenceꝝ of þe selfe solucioun . . . as of gretneꝝ & litelneꝝ, equalite, inequalite, profoundeneꝝ and superficite, al holy and after parte, in rectitude .i.e. rigʒtneꝝ & obliquite and þat kynde.

(*Chauliac Wounds* MEMT1)

Example (6.16) is particularly interesting for a number of reasons. For one, the pairing *equalite/inequalite* may encourage two sorts of morphological analyses: a polyptotonic one, where prefix *in-* is emphasized as a detachable unit; or a homoeoptotonic one, where

ending *-ity* is foregrounded as a suffix that attaches to bases *equal* and *inequal*. Moreover, this rhetorically complex example not only presents antonymic pairs of *-ness* and *-ity* derivatives (*greatness/liteness* and *equality/inequality*). It also mixes the two types in two antonymic pairings, *profoundness/superficiality* and *rightness/obliquity*. In addition to heightening the style, the writer likely develops this pattern for pedagogical reasons. By suggesting their meanings through antonymic relationships with possibly more familiar *-ness* derivatives, he intends for those *-ity* derivatives to be more comprehensible. Such mixing of *-ity* and *-ness* has also been observed in religious prose (Chapter 4) and poetry (Chapter 5), where this rhetorical strategy had similar motivations for a vernacular audience.

Evidence of rhetorical uses of derivatives in both letters and scientific texts illustrates just how pervasive this phenomenon was in the fifteenth and sixteenth centuries. It should be considered as a distinct linguistic phenomenon that had an effect on both the use of derivatives in a variety of English registers and the perceived productivity of borrowed derivational suffixes in late ME and early EME.

6.6 Conclusion: Historicizing Productivity

The following chart (Table 6.9) summarizes the findings of this chapter. It emphasizes what can be said about the productivity of each suffix relative to one another, based on the data from early English letters and medical texts. The chart ranks suffixes in order from highest productivity to lowest, though the specific factors listed in the second column should be considered holistically:

	How productive was this suffix?
<i>-ness</i>	<u>Very productive (wide)</u> : high decomposability, high type diversity, high aggregation of new types, many hybrid formations, highly naturalized
<i>-age</i>	<u>Moderately productive (wide)</u> : moderate decomposability, low type diversity, low aggregation, some hybrid formations (letters), moderately naturalized
<i>-ment</i>	<u>Moderately productive (restricted)</u> : moderate decomposability, moderate type diversity, moderate aggregation, no hybrid formations, not highly naturalized
<i>-cion</i>	<u>Moderately productive (restricted)</u> : low decomposability, high type diversity, high aggregation, no hybrid formations, not highly naturalized
<i>-ity</i>	<u>Weakly productive (restricted)</u> : low decomposability, low to moderate type diversity, low but increasing aggregation, no hybrid formations, not highly naturalized, some lexemes compete with <i>-ness</i>

Table 6.9: Summary of findings based on fifteenth and sixteenth century data from the CEEC and MEMT

This study has outlined a number of critical factors that reflect or explain the relative distributions of borrowed derivatives and the relative levels of productivity among borrowed suffixes in fifteenth- and sixteenth-century English as presented in Table 6.9. The chapter argues that productivity in diachronic studies of morphology can be best understood with a multi-faceted approach: no single factor can sufficiently explain how particular suffixes came to be seen as productive in the history of English. Such an approach is desirable particularly because of a methodological impasse. Hapax analyses, one of the most reliable measures of productivity, cannot be conducted on most historical corpora because they are too small. Agreeing with this line of reasoning, Dalton-Puffer (1994: 248-9) establishes that suffixal productivity must be influenced by multiple factors, not all of which are at work in every particular case. These factors include the following:

Features of Productivity

- (1) phonological/syntactic characteristics
- (2) frequency
- (3) generalizedness
- (4) semantic coherence
- (5) analyzability
- (6) transparency
- (7) creativity
- (8) neologisms
- (9) lexicalization
- (10) blocking
- (11) paradigmatic competition
- (12) social convention
- (13) contextual appropriateness
- (14) usefulness to language community

This chapter addresses some of these factors, though it also considers other less explored but equally revelatory phenomena. To provide a thorough more thorough picture of the relative productivities of borrowed suffixes as seen in Table 6.9, the present study has analyzed the following dimensions and put forth the following conclusions:

(1) Token frequency, including the effects of gender and genre

Token frequency in and of itself says little about suffixal productivity. But frequency must be discussed as a general concept because it establishes distribution patterns—that is, it demonstrates, in a general sense, which and how many borrowed derivatives were coming into English usage in the first place. Contextual variables, such as genre, demonstrate that some suffixes are more frequently selected for some contexts than others. Early English medical texts tended to use higher numbers of *-cion*, *-ity*, and *-ness* derivatives than personal letters, which used more *-ment* and *-age*. Productivity depends to a certain extent on these distribution patterns, since readers and speakers

would need to be exposed to enough tokens in order to enable analysis of borrowed derivations as decomposable lexemes.

Sociolinguistic variables, such as gender, help nuance claims about frequency by identifying which subsets of speakers were leading or lagging in the use of borrowed derivations in English. This study finds that men led women in the use of *-cion* and *-ment*, while in most sub-periods women led men in the use of *-ity*. Additionally, this analysis discovers that there were no statistically significant differences between the two genders' use of *-ness* or *-age* in any sub-period of the fifteenth and sixteenth centuries. These results lead me to speculate that derivatives in *-ness* and *-age* were likely more generally naturalized than *-cion* and *-ment*, which were promoted most by men learned in emergent professional discourses during this time period. In other words, men may have had a more significant impact on the emergent productivity of *-cion* and *-ment* in English. But, contrary to Labov's predictions of gender use, women tended to lead the way in the use of *-ity* derivatives for most of the fifteenth and sixteenth centuries.

(2) *Type frequencies, including the aggregation of new types*

More than token frequencies, type frequencies have a more direct impact on the perceived productivity of suffixes. The greater the range of types a suffix appears in, the more likely it will seem productive. A more nuanced look at type frequencies examines new type aggregation, which demonstrates which suffixes were most likely to add new types into general usage over a period of time within the same genre. This diachronic measure also helps to identify which lexical fields were most "active"—that is, most likely to contribute new lexemes to a corpus. By exploring these dimensions, I found that

type frequencies had the greatest effect on the perceived productivity of *-cion* and the weakest effect on *-age*, with *-ness*, *-ment*, and *-ity* consistently between these poles.

(3) *Competing forms*

Derivatives in *-ity* and *-ness* have often competed for use in the history of English, and such competition suggests a certain level of productivity for both suffixes. This study has found that, in the first two centuries of personal correspondence in English, there was very little direct competition between *-ity* and *-ness*; they rarely attach to the same base. In early medical texts, however, a small but significant number of competing forms suggest that *-ity* and *-ness* were rivaling to attach to the same bases.

(4) *Hybrid forms*

Hybrid formations suggest a specific sort of productivity—the ability for affixes to attach to bases from a different language source. Only *-ness* and *-age* appeared in hybrid forms in letters, and only *-ness* appeared in hybrids in medical texts. In terms of borrowed affixation, *-age* has a much wider level of productivity than its peers, which appear only attached to borrowed bases.

(5) *Base-derivative ratios*

Base-derivative ratios—a measure based on token frequencies of bases and derivatives for each derivative type of each suffix—provide substantial evidence of the decomposability of derivatives in different genres and time periods. Taking token-

parsing, type-parsing, and mean parsing ratios all into consideration, the suffixes can be ranked as follows, in order from most parsable to least parsable in English letters:

-ness > -ment > -age > -cion > -ity

Because parsability correlates strongly with perceived productivity, *-ness* is ranked as the most productive affix while *-ity* is ranked as the least productive. But parsability may also depend on genre, as medical writers tend to produce more parsable deadjectival nominals (with *-ity* and *-ness*) than letter writers. Medical writers also use less parsable deverbal derivations (with *-ment* and *-cion*).

(6) *Glossing*

The level of naturalization of borrowed derivations likely correlates with productivity, insofar as suffixes with wider productivity (such as *-age* with its hybrid forms) tend to produce more naturalized forms than those with restricted productivity. (See Chapter 5 for evidence of this distribution in rhymed poetry.) As such, glossing identifies specific lexemes that writers feel are hard and unfamiliar for their audiences. It should be noted that all four borrowed suffixes had derivatives which were glossed in either personal correspondence or medical texts. So no suffix types were fully naturalized during the fifteenth and sixteenth centuries.

(7) *Rhetorical Figures (polyptoton and homoeoptoton)*

While certain figures of speech have clear rhetorical purposes, their use in texts also has morphological consequences: polyptotons foreground the detachability of

suffixes, while homoeoptotons highlight a suffix's ability to attach to multiple bases. All four borrowed suffixes are employed in these rhetorical figures in both letters and medical texts. These rhetorical uses must have added to the perceived productivity of these suffixes.

All of the above factors contribute to a fuller understanding of the relative productivities of borrowed suffixes in English. But should all variables be weighed equally? Base-derivative ratios, which have been shown in PDE studies to be one of the strongest tests for productivity, are perhaps the most reliable test. The results of this study may explain why innovations and hybrid forms have appeared most with *-age* and *-ness* in several genres explored throughout this dissertation. Perhaps these two affixes are the most productive of the set. The generally low parsability scores of *-ity* and *-cion* may explain why these suffixes never form new hybrids, despite the fact that *-cion* consistently scores the highest diversity of types and aggregation of new types among all suffixes (including *-ness*).

Taken together, these factors also add more evidence to the claim that absolute frequencies do not necessarily correlate with productivity. The suffix *-ness*, for example, was found somewhat surprisingly to be used relatively infrequently by letter writers throughout the fifteenth and sixteenth centuries. And yet, along several dimensions, it is characterized as one of the most (if not the most) productive suffixes. Its perceived productivity does not seem to depend on its overall frequency of use.

Even so, the linguist must be careful not to overvalue the results of any one measure of productivity. It is too simplistic to make a claim such as “*-age* is more productive than *-cion* because it produces hybrid forms.” The suffix *-age* showed very little aggregation compared to all other suffixes, so it did not seem to be a particularly productive suffix in personal correspondence. And it was used much less frequently (and with very few types) compared to other nominalizing suffixes in medical texts. Perhaps the most useful conclusion to draw here is that no one criterion should be singled out as a sufficient cause or indicator of productivity. If base-derivative ratios alone are considered, it is too easy to conclude that *-ness* is a productive suffix while *-cion* is not. But it is known that some original derivations with borrowed affixes were occurring in letter writing (*introducement, recantation, adwosonage*). It is also known that all borrowed derivations were aggregating new forms over time (though, in varying degrees). Thus, claims about productivity must be comprehensive and nuanced, considering multiple factors to assess and compare suffixes with one another historically.

Chapter 7

Conclusion

This dissertation has explored the use of borrowed derivatives and their suffixes in a variety of vernacular genres in the fourteenth through sixteenth centuries. Its primary goal has been to describe in more detail how the endings of these derivatives became integrated into the English language, particularly by identifying and analyzing several linguistic mechanisms that were likely to influence the perceived morphological status of these endings. In addition, the study has discussed some of the motivations for using borrowed derivational suffixes in a variety of English genres in the late ME and early EME periods. And the analysis has offered several methodological and theoretical contributions to the study of morphological productivity more generally.

7.1 Motivations

In terms of motivations for the use of borrowed derivatives in English, one of the important findings has been the prevalence of rhetorical uses of borrowed derivations in a number of late ME and early EME genres. In the face of a collapsing nominal inflectional system, it is clear that medieval and early modern English prose writers were turning to borrowed derivational morphology in order to create homoeoptotonic and polyptotonic patterns in the vernacular. But it was not solely popular prose (e.g., the

language of the Wycliffite Bible) that invoked derivationally based rhetorical figures. They were also observed in less public genres such as the guild records of the Goldsmiths, vernacular medical texts, and personal correspondence.

The small case study in Chapter 5 suggests that ME poets, too, may have had particular motivations for using borrowed derivatives in their verse. Derivatives ending in *-cion*, *-ity*, and (to a lesser extent) *-age* were used highly frequently as end-rhymes, often much more so than native derivations with *-ness*. This study speculates that, in addition to semantic motivations, derivatives were used in poetry because they provided poets a rich array of potential rhyming patterns. But it is unclear if this motivation is particular to Chaucer and his contemporaries—or even the specific long poems selected for this study—or if it is a characteristic of other types of end-rhymed poetry. It would be interesting to consider, for example, the distributions of borrowed derivatives in the complete works of Chaucer or of Lydgate. And it would be fruitful to compare the findings of this dissertation with an analysis of poems written in various ME dialects and not strictly influenced by the court poetry of London: e.g., ME verse romances such as *King Horn* or *Havelok the Dane*. Some of the formal motivations for using borrowed derivations may be similar in other types of poetry, but there is likely an even wider array of motivations to be discovered in other poems and other genres.

This dissertation asserts that in order to understand language change involving borrowed derivations and their morphology in English, it is critical to identify such motivations in order to move beyond description and into explanation of use and change. But at the same time, linguists must establish motivations cautiously: it is rarely the case that any single, identifiable motivation can explain why a writer chose to use a borrowed

derivative in a particular context. While there are clearly semantic, prosodic, thematic, and other impetuses for the use of borrowings in English, this study advances the idea that there are other motivations particular to borrowed derivatives that deserve further investigation—namely, poetic-structural motivations in end-rhymed poetry and rhetorical motivations in a variety of genres.

7.2 Genre and Derivational Usage

The effects of genre on the use of borrowed derivations in ME and EME have also been explored. Previous studies (e.g. Dalton-Puffer 1996) have often called for more detailed studies of the use of borrowed derivational morphology in different genres, and this study finds that there are significant differences in both token and type counts among different registers.

Table 7.1 below provides a direct comparison of the normalized token frequencies for four nominal suffixes in three different genres from the first half of the fifteenth century.¹⁸²

Suffix	Poetry	Letters	Medical Texts
<i>-ness</i>	15.9	5.7	35.4
<i>-age</i>	12.2	6.9	3.2
<i>-ity</i>	10.0	10.8	31.7
<i>-cion</i>	20.2	52.2	62.8

Table 7.1: Absolute frequencies in different genres in the early fifteenth century, normalized to number of tokens per 10,000 words

¹⁸² The guild records from Chapter 3 are not included here because, without computer-assisted concordancing, it was not feasible to conduct word counts of the manuscripts. Thus, normalization was not possible. Religious prose (Chapter 4) is also not included because overall token and type counts were not conducted; the primary interest of the chapter is the occurrence of rhetorical figures. The suffix *-ment* is omitted here since it was not selected for the poetry study.

From these data it is clear that the use of derivatives can vary markedly genre to genre. Derivatives with *-cion* are consistently the most frequent in each genre, though medical texts and letters use them far more than the end-rhymed poetry selected for the corpus. Medical texts led in uses of *-cion* in part because of the sheer variety of medical procedures described. Lexemes with *-age* have minimal use in medical texts, but they are much more frequent in poetry, which tends to discuss a wider range of thematic issues (*marriage, dotage, servage, pilgrimage, etc.*). The suffix *-ity* has similar frequencies in poetry and letters, but like *-ness*, it is used far more frequently in medical texts than in letters or poetry. These higher frequencies appear because medical writers relied often on particular deadjectival nominalizations to represent descriptive states that can be observed within the human body (e.g., *whiteness, carnosity*). Thus, the particular semantic needs of writers and audiences in different genres affect the distributions of borrowed derivatives within vernacular texts. This point is not surprising in and of itself, but previous scholarship has not made clear how particular genres affect the use of particular suffixes in ME.

Lexical diversity (as measured by type frequencies) also seems to depend on genre, though not for all suffixes. Because type frequencies depend on word-count, it is not useful to compare separate corpora directly. However, it is possible to compare the relative rankings of suffixes within each genre with one another. Table 7.2 below provides several genres from the early fifteenth century in the first column, each followed

by a list of suffixes ranked in order from highest type count to lowest type count within that genre:¹⁸³

Genre	Suffixes
Poetry	<i>-cion, -ness, -ity, -age</i>
Goldsmiths' Records	<i>-cion, -ness, -ity, -ment, -age</i>
Grocers' Records	<i>-cion, -ment, -age, -ity, -ness</i>
Medical Texts	<i>-cion, -ness, -ity, -ment, -age</i>
Letters	<i>-cion, -ness, -ment, -age, -ity</i>

Table 7.2: Lists of suffixes within each genre, ranked from highest type count to lowest

Within each genre, *-cion* consistently exhibits the highest lexical diversity among all suffixes. Native suffix *-ness* tends to be second highest, while *-age* tends to be the lowest. The other borrowed suffixes, *-ity* and *-ment*, usually have wider lexical diversity than *-age* but narrower ranges than *-cion* and *-ness*. The one exception is the Grocers' records, which are kept distinct from the Goldsmiths' accounts above because they include higher numbers of certain subgenres, particularly ledgers. The Grocers display a distinctly different type distribution than the other genres: they use relatively high numbers of distinct *-age* and *-ment* types and relatively low numbers of distinct *-ness* types. It is possible that these records are an outlier; it is difficult to explain why they use only two *-ness* types in their records. But it also seems that the practical needs of their bookkeeping may have affected their derivational use. Because they deal with inventory and storage and their associated fees, the Grocers use a number of nominals associated with the lexical fields related to goods traded, sold, and stored (e.g., *vestment*, *wharfage*).

It is possible that these same genres in other periods of English may have similar distributions to those described in this dissertation. But the results in Chapter 6 suggest

¹⁸³ The suffix *-ment* does not appear in the row for poetry because it was not investigated in that case study. The Grocers' records are kept distinct from the Goldsmiths' records since there was some important variation between these two communities.

that type frequencies depend not only on genre but also on time period. For example, within personal correspondence, *-ity* has very low lexical diversity relative to its peers throughout the fifteenth century. But in the same genre within the sixteenth century, it begins to exhibit as many different types as *-ness* and *-ment* (each with about 70 different types per half-century sub-period). The sudden rise in the lexical diversity of *-ity* within letters corresponds with Anderson's (2000: 370) observation that, according to data in the *OED*, there was a sharp rise in innovations with *-ity* during the sixteenth century. In other words, increases in type frequency observed in corpus studies of particular genres may correlate with changes in productivity observed in historical dictionaries. Because individual genres are likely to differ—some are likely to be more or less conservative, or some may innovate more with one suffix than another—more diachronic studies of derivational patterns using historical dictionaries and corpus studies are needed.¹⁸⁴ It would be particularly useful, for example, to calculate type- and token-parsing ratios for suffixes within the various registers provided in corpora such as ARCHER and the Helsinki Corpus. These scores could then be compared to the findings of Cowie (1998) to determine whether the most morphologically innovative registers also tend to be those with the most parsible derivatives.

¹⁸⁴ Anderson (2000)'s work on diachronic productivity, based on new words located in the *OED*, is useful, particularly when comparing its results to the findings of detailed corpus studies. Unfortunately, the only borrowed nominal suffix she treats is *-ity*. More work needs to be done on the diachronic productivities of *-cion*, *-ment*, *-age*, and other borrowed nominal suffixes.

7.3 Genre and Evidential Types

By conducting detailed analyses of a variety of registers, this study has found evidence of analyzability and naturalization that is particular to individual genres. In other words, genre also influences the methods one can potentially use to construct a study of the integration of borrowed morphemes into English. Such evidence includes the pragmatics of the Grocers' ledgers, whose collinear uses of borrowings (e.g. *cariage*, *wharfage*, *cranage*) make *-age* more salient as an affix which attaches to multiple bases. It also includes positional occurrences in poetry—namely, end-rhyme—which is used to sort out lexemes as potentially more or less naturalized and to illustrate how rhymed couplets may have increased the transparency of suffixes. And it even includes particular writerly strategies such as glossing, an act which signals to readers that a borrowing may be hard and unnaturalized. While glossing occurs in a number of ME genres, it tends to appear most often in more pedagogically oriented texts; it is more commonly a feature of surgery manuals than of personal letters, for example. Of course, none of these types of evidence provides conclusive, incontrovertible proof of naturalization or productivity. But such genre-specific evidence of naturalization can be added to quantitative analyses of productivity in order to construct a more comprehensive view of the ways in which texts both reflect and affect derivational morphology in English.

7.4 Gender and Other Social Variables

The results in Chapter 6 raise interesting questions about the relationship between social variables such as gender and the use of derivational morphology in English. Unfortunately, sociolinguistic considerations have generally received little attention in scholarship on derivational morphology. Romaine (1983) makes a strong case that judgments about the grammatical acceptability of word-formation patterns, such as *perceptiveness* vs. *perceptivity*, likely depend on social factors and individual variation as much as structural variables such as phonological restrictions at morpheme boundaries. In one relatively small experiment on PDE, she considers both gender and age, finding that men are much less likely to accept both *-ity* and *-ness* forms than are women; men tend to prefer only *-ity* forms. She also finds that younger speakers are more likely to accept both suffixes as an acceptable attachment to the same base, while older speakers tend to prefer only *-ness* or *-ity* for different bases.

It should be possible to investigate these sorts of issues in diachronic studies as well. Do men and women in other historical periods tend to prefer some word-formation processes over others? Are younger speakers more likely to use (and not just accept) synonymous derivations on the same base than are older speakers? Of course, studies of age and gender in the medieval period are severely limited by a lack of available data: there are too few texts written by women, and the age of different authors is often unknowable. And unfortunately, the present study could not analyze the competition between *-ity* and *-ness* since there were too few cases of genuinely competing lexemes. But perhaps with other corpora in later centuries, such as the Michigan Corpus of

Academic Spoken English (MICASE), it may be possible to determine whether age, gender, social class, and other social variables affect the use of different word-formation patterns.

Despite the lack of data on competing forms, this dissertation has found that, during the fifteenth and sixteenth centuries, men tended to lead women in the use of nominals ending in *-ment* and *-cion*. This difference is perhaps due to differences among the two genders' social experience in fields such as law, politics, and economics.

Another interesting result shows that there were no statistically significant differences in men's and women's use of *-age* and *-ness*, which were also the two most productive suffixes in most periods and genres throughout this study. These findings raise an intriguing question: is it possible that the impact of social variables such as gender on the use of derivational morphemes is potentially greater for suffixes which are generally less productive or less naturalized in the language? There is no intuitive reason why this would be so, except perhaps the possibility that less productive derivational patterns may be more marked in the language and therefore more susceptible to indexing prestige or stigma among speakers. Such questions about the relationship between social variables and derivational morphology clearly need much more study in both diachronic and present-day contexts.

7.5 Productivity and Analyzability

One of the primary arguments of this dissertation is that historical studies of productivity need to be multi-faceted, considering a number of variables when assessing

how suffixes come to be productive in English. While there are a range of variables to consider (e.g., semantic coherence, neologisms, hapaxes, analyzability), much of the historical focus on derivation in the history of English has been focused on the products of productive processes—i.e., neologisms. While this work is crucial, far less attention has been paid to many of the conditioning factors which may have led to speakers' ability to neologize with borrowed suffixes. By introducing the concept of *perceived productivity*, this study has attempted to explain some of the factors which were likely to reflect and effect morphological analyzability in a number of vernacular contexts.

While a discussion of morphological perception in historical studies may seem somewhat adventurous, previous studies of derivational morphology have consistently highlighted analyzability as one of the primary features of productive word-formation patterns. But all too often, assumptions about analyzability are made on a single criterion—the attestation of at least one use of a base by at least one writer before the first use of a derivation in English. As has been demonstrated in present-day studies, analyzability is a much more complex notion, and its effects on productivity have been increasingly theorized and understood. And this dissertation argues that these findings need to be applied more often in diachronic studies of morphology.

Contemporary studies have found that analyzability likely depends on a number of variables, including phonological ones. Cutler (1980) has shown that morphophonological aspects play a role in productivity. New derivations tend to be coined more often with word boundary affixes—morphemes such as *-ness* which do not typically change the phonological structure of bases to which they attach—than with formative boundary affixes, suffixes such as *-tion* in *destruction*, which do modify the

phonological shape of bases (e.g., *destroy* → *destruc-*). But Cutler (1981) also notes that speakers find derivations acceptable as long as the base is transparent, whether or not a formative boundary affix is used.¹⁸⁵

While phonology clearly plays a role in morphological transparency, I have focused more deeply on the effects of lexical frequencies and co-occurrences that increased the transparency of borrowed derivatives and the analyzability of suffixes in these derivatives. Based on the work of Bybee (2001), Hay (2003), and Hay and Baayen (2002), this dissertation proposes that there are two fundamental qualities of language use which impact the analyzability of suffixes: (1) the concurrent use of multiple derivative types ending in the same suffix; and (2) the concurrent use of bases alongside derivatives.

Evidence of these qualities, which are described in some form or another in all chapters of this dissertation, occurs on both a macro and micro level. On the macro level, I have adopted the assumptions of Bybee, Hay, and Baayen that particular lexical frequencies—namely, type frequencies and relative frequencies of bases and derivatives—reflect levels of perceived productivity in the language. In applying this principle historically, I have also attempted to nuance this point-of-view: insofar as analyzability impacts perceived productivity, these variables may be assumed to reflect the linguistic perception of particular communities at particular points in time.¹⁸⁶ Hence, the type frequencies and base/derivative ratios measured in the sample of end-rhymed poetry most likely reflect the language experience of that particular readership, which was likely different in some significant ways from the readership of vernacular medical

¹⁸⁵ These results from Cutler lead Anderson (2000: 378) to conclude that transparency may be more crucial to productivity than the differing phonological effects of word boundary and formative boundary affixes.

¹⁸⁶ Of course, it is entirely possible that perceived productivity varies at the level of individual speakers. But this is a difficult question to answer not only in historical studies, but also the present day.

texts or the members of the Grocers' Company. The one exception in this dissertation is perhaps the genre of personal correspondence, which reflects the language of communities of letter-writers but may also represent relatively informal English usage during the fifteenth and sixteenth centuries more generally.

On a micro-level, I have also drawn attention to the potential impact of co-occurrences of lexemes with the same base (lexical paradigms, polyptotons) and lexemes with the same suffix (suffixal paradigms, homoeoptotons, rhymed couplets) on readers and listeners. The former makes salient the detachability of the suffix; the latter emphasizes the suffix's ability to attach to multiple bases. Interestingly, these two types of language patterns represent concrete, salient instances of the two distinct, macro-level qualities of language described above. Homoeoptotons put the lexical diversity of a suffix on display, while polyptotons draw immediate attention to the relationship between a derivative and its base. Of course, it is difficult to assess the full impact of these figures on language users. The evidence offered in this dissertation is generally incidental, adding to the overall evidence of analyzability of borrowed suffixes in different genres in ME and EME. But because they rely on mechanisms similar to those observed in frequency-based measures of analyzability, there is good reason to believe that they too may impact morphological analyzability in significant ways. These language patterns have not yet been studied extensively, and it would be useful to know how frequently they occur in other periods and genres throughout the history of English. And it would also be helpful to see their impact on morphological analyzability in language processing studies, if it is possible to design such a study.

In any case, the sorts of measurements of analyzability described in this study can be checked against other measurements of productivity. For example, it can be observed in data from the *MED*, *OED*, and studies such as Lloyd (2005), Miller (2006), and Anderson (2000) that the suffix *-ity* has tended to lag behind *-age* and *-ment* in the production of hybrids and new derivations on Latinate bases, particularly during the medieval period. The low productivity of *-ity* may be explained, at least in part, by its relatively low type frequencies (observed in a number of genres) and very low token and type parsing percentages (observed in poetry and personal correspondence) in the fifteenth century. In other words, its lack of ability to produce new derivations was partially dependent on its lack of analyzability among derivatives in the language. At the other extreme, the native suffix *-ness* may have maintained its high productivity in ME and EME in part because of its consistently high analyzability in derivatives in a wide variety of genres.

Anderson (2000) also finds a broader pattern of change in derivational productivity in the history of English. Based on *OED* data she observes that, among 15 native and borrowed derivational suffixes, there is generally low productivity up to the fifteenth century. Some suffixes such as *-ship* begin to show rising productivity during this century, and by the sixteenth century there is a general rise in the production of new formations among all derivational suffixes. Interestingly, this dissertation also discovers a general diachronic trend among the analyzability of *-ness*, *-ity*, *-age*, *-ment*, and *-cion*: the suffixes generally show increasing type and token parsing percentages throughout the

fourteenth and fifteenth centuries.¹⁸⁷ At a minimum, there seems to be a correlation between analyzability and productivity during this period of English. But as Hay points out, parsability is also a cause of productivity. I am loath to claim that the trends in analyzability observed in this dissertation can be labeled a “cause” of diachronic changes in productivity, though I suspect analyzability was likely one among several influences on speakers’ ability to neologize.

There are some complications in asserting that frequency-based measures of analyzability correlate with productivity. One curiosity throughout this dissertation is the fact that *-cion* consistently has very high type frequencies in all genres in the fifteenth century, even though there is little evidence of other signs of productivity.¹⁸⁸ At the same time, *-age* consistently has the lowest type frequencies in all genres (except the Grocers’ records), even though it has a number of hybrids in the period.¹⁸⁹ It may be the case that type frequencies may not be as tightly correlated with productivity as are base-derivative ratios. The type-parsing ratios of *-age*, particularly in the latter part of the fifteenth century, are relatively high and those for *-cion* relatively low. But if one considers the token-parsing ratios, *-cion* tends to have higher numbers than *-age*.

The relationship between analyzability and productivity is clearly complicated. It is generally agreed among morphologists that analyzability relates to potential productivity. But there is no guarantee that analyzable processes necessarily produce

¹⁸⁷ All suffixes also show increasing type frequencies (i.e., increasing lexical diversity), but this trend is obscured by the differing word counts in each sub-period of the CEEC. Even so, it is reasonable to suspect that as each decade passed, speakers used increasing numbers of types during these two centuries.

¹⁸⁸ I could locate no evidence of hybrid forms or little evidence of new derivations (that are conclusively not borrowings from Latin or French) in historical dictionaries or studies such as Miller (2006) or Lloyd (2005). Dalton-Puffer (1996) claims that the suffix is not productive in ME, though Lloyd (2005) questions the claim since a number of derivatives were transparent.

¹⁸⁹ Lloyd (2005:184) finds that *-age* has significantly more native coinages in ME than do many other Romance suffixes: e.g., *cartage* from the English-derived verb *carten*.

new innovations.¹⁹⁰ As Anderson (2000) emphasizes, productivity implies analyzability, but not vice versa. A suffix may lose its productivity at any point in the history of English (e.g., *-th* in *warmth*), but as long as it is analyzable, it can potentially resurge as productive. Hence, detailed studies of analyzability are useful in characterizing potential productivity, and may be helpful in explaining increases in hybrids and new derivations for particular suffixes at different points in history. But even though analyzability is necessary for productivity, it is not a sufficient condition.

More research is needed to explore this relationship between productivity and analyzability. It would be useful, for example, to compare the language use of two communities which produce significant numbers of new derivations but differ in the levels of analyzability of suffixes used to produce those innovations. And certainly the analyzability of a wider range of derivational suffixes, both native and borrowed, must be studied.

7.6 Productivity and Naturalization

A remaining question is the relationship between productivity and naturalization in the history of English. The emergent productivity of borrowed suffixes in English likely coincides with the increasing naturalization of borrowed derivatives and suffixes, though this dissertation concludes that there is no clear-cut connection between the two processes.

There is evidence that *-age* is more naturalized than *-ity*, *-cion*, and *-ment* in the genres investigated in this study. It was the only suffix to appear in hybrids with native

¹⁹⁰ For more on the difference between potential productivity and the products of productive processes, see Bauer's (2001: 49) distinction between *potential profitability* and *generalization*.

bases in a number of discourses, including the Grocers accounts' and personal correspondence. In the poetry study, far more of its derivatives appeared to be naturalized than those for *-cion* and *-ity*. In personal correspondence, women consistently used *-age* at the same rates as men, suggesting that derivatives with the suffix were not typically marked as hard words. And in general, writers rarely glossed derivatives ending in *-age*; this process happened much more frequently with the other borrowed nominal suffixes. But it is not clear from these data alone how much the productivity of *-age* depends on the naturalization of its derivatives.

Moreover, even if suffixes such as *-ity* and *-cion* are not generating significant numbers of hybrids in the history of English, is it possible for them to still become naturalized? The *OED* entry for *-ation* suggests that, despite the lack of hybrids before the eighteenth century, the suffix did naturalize as it became more productive (my emphasis):

the remainder [of *-ation* formations] have a vb. without suffix, derived through Fr., either with or without modification; e.g. *modi-fy*, *-fication*, *appl-y*, *-ication*, *publ-ish*, *-ication*, *prove*, *probation*; *alter-ation*, *caus-ation*, *cit-ation*, *commend-ation*, *consult-ation*, *embark-ation*, *fix-ation*, *form-ation*, *not-ation*, *plant-ation*, *quot-ation*, *tax-ation*, *tempt-ation*, *vex-ation*, *visit-ation*. **To the mere English speaker the latter have the effect of being formed immediately on the Eng. verbs *alter*, *cause*, *embark*, *fix*, *plant*, *tax*, *vex*, *visit*, etc.; and *-ation* thus assumes the character of a living Eng. suffix.** Hence, it comes to be applied to verbs not of Fr. origin, as in *starv-ation*, *flirt-ation*, *bother-ation*, *backward-ation*.

The *OED* assumes that the transition of *-ation* from restricted productivity (attachment only to Latinate bases) to wider productivity (hybrid formations on native bases) primarily depended on reanalysis. And reanalysis depends crucially on English speakers'

knowledge of the verbal bases. The *OED* also implies that these bases are already naturalized; *alter*, *cause*, *tax*, and the other listed verbs are considered “English” verbs, even though they are all borrowings. It is not clear what makes these verbs English—perhaps time-depth in the language, phonological changes, and/or frequency of use. In any case, this entry raises the intriguing possibility that productivity, or at least wide productivity, depends on the naturalization of bases. The implication here is that wider productivity depends on the analyzability of derivatives. And if that process is to be considered English, analyzability may also depend on the level of naturalization of the bases of derivatives.

This hypothesis about the relationship between the naturalization of borrowed bases and the productivity of borrowed affixes is perhaps supported by the diachronic analyses presented in Chapter 6. Recall that, in general, suffixes showed mostly steady increases in type- and token-parsing ratios from the beginning of the fifteenth century to the end of the sixteenth century. The reason for the increases in type- and token-parsing scores of borrowed suffixes is simple: each generation of English speakers used increasingly higher rates of borrowed bases relative to derivatives during these centuries. Insofar as naturalization depends on frequency of use, these bases were likely becoming increasingly naturalized in English. It is also significant to note that increases in the frequency of borrowed bases also correlate with trends observed by Anderson (2000). She finds that derivational productivity generally rises during this time period as both native and borrowed affixes appear in growing numbers of neologisms. Hence, it is possible to observe a direct correlation between derivational productivity and the frequency, and perhaps naturalization, of bases in English.

The relationship between naturalization and productivity is likely not so clear-cut, however, especially since lexical frequency is not the only factor that affects naturalization. Even so, this dissertation offers the following possible theory about the relationship between the two processes. For a borrowed derivational pattern to become productively English, it must go through a process of perceived naturalization. The suffix itself will likely undergo some aspects of naturalization; it may, for example, adapt to phonological patterns in the native language. But the naturalization of the borrowed suffix also depends on the naturalization of the bases to which it attaches. Bases naturalize for a variety of reasons, including adaptation to native phonology, length of time used in the language, and frequency of use. As borrowed bases become more frequently used in the language—a trend that occurred during the fifteenth and sixteenth centuries for derivatives ending in *-ment*, *-cion*, *-age*, and *-ity*—they become more naturalized as their derivatives also become more analyzable. Thus, as the frequency of borrowed bases increases, so do the naturalization and perceived productivity of borrowed suffixes.¹⁹¹ These changes increase the likelihood that the borrowed derivations will be perceived as English word-formation patterns.

Moreover, there may also be particular thresholds for analyzability which determine how naturalized a borrowed suffix has become in English. In this study, native suffix *-ness* tended to have token- and type-parsing percentages between fifty to sixty-five percent. So as the use of bases relative to their derivatives increases, and the token- and type-parsing percentages approach ranges typical of productive native suffixes, a borrowed suffix may approach fuller naturalization in the language. Such a theory must,

¹⁹¹ This supposition assumes that the frequency of derivations does not also increase as the frequency of bases increases.

of course, be tested on a wider array of native and borrowed suffixes, and in a broader range of genres and periods in the history of the English language.

Ultimately, this dissertation has illustrated the importance of expanding analyses of productivity to include a number of previously underexplored variables, both within studies of the history of English derivational morphology and within studies of historical morphology more generally. Quantitative accounts must focus not only on neologisms and hapaxes but also on type frequencies, patterns of aggregation of new types, and base-derivative ratios—factors which are likely to reflect the varying levels of perceived productivity among suffixes. Qualitative analyses must consider the impact of co-occurrences of lexemes with the same suffix or same base on speakers' and readers' ability to analyze morphemes. And morphological analyzability itself must also be described more broadly: while phonological transparency and semantic transparency certainly influence productivity, so do lexical frequencies such as type- and token-parsing ratios. Sociolinguistic variables such as genre and gender are likely to influence the use and spread of some borrowed derivational morphemes among language users; other variables such as age and race may also play a role and should be considered whenever data on such factors are available. And in the specific case of borrowed derivational morphology, the process of naturalization must also be accounted for, as it seems to occur alongside the emergent productivity of borrowed derivational affixes diachronically.

Bibliography

- Algeo, John. 1991. *Fifty Years among the New Words: A Dictionary of Neologisms 1942-1991*. Cambridge: Cambridge University Press.
- Andersen, Henning. 1973. "Abductive and Deductive Change." *Language* 49: 765-793.
- Anderson, Karen. 2000. *Productivity in English Nominal and Adjectival Derivation, 1100-2000*. Thesis (Ph.D.)—University of Western Australia.
- Anderson, Stephen R. 1992. *A-Morphous Morphology*. Cambridge: Cambridge University Press.
- Anshen, Frank, and Mark Aronoff. 1989. "Morphological Productivity, Word Frequency and the OED." *Language Change and Variation*, eds. R. Fasold and D. Schrifin. Amsterdam/Philadelphia: Benjamins.
- Aronoff, Mark. 1976. *Word Formation in Generative Grammar*. Cambridge, Massachusetts: MIT Press.
- Aronoff, Mark. 1980. "The Relevance of Productivity in a Synchronic Theory of Word Formation." *Historical Morphology*, ed. J. Fisiak, 71-83.
- Aronoff, Mark. 1983. "Potential Words, Actual Words, Productivity and Frequency." *Proceedings of the 13th International Congress of Linguists*, eds. Shiro Hattori, and Kazuko Inoue, 163-171. Tokyo: The Committee.
- Aronoff, Mark. 1994. *Morphology by Itself: Stems and Inflectional Classes*. Linguistic Inquiry Monographs, 22. Cambridge, Massachusetts: MIT Press.
- Aronoff, Mark, and Frank Anshen. 1998. "Morphology and the Lexicon: Lexicalization and Productivity." *The Handbook of Morphology*, eds. Andrew Spencer and Arnold Zwicky, 237-248.
- Auksi, Peter. 1975. "Wyclif's Sermons and the Plain Style." *Archiv für Reformationgeschichte* 66: 5-23.
- Baayen, Harald. 1989. *A Corpus-based Approach to Morphological Productivity. Statistical Analysis and Psycho-linguistic Interpretation*. Amsterdam: Vrije Universiteit.
- Baayen, Harald. 1992. "Quantitative Aspects of Morphological Productivity." *Yearbook of Morphology 1991*, eds. Geert Booij and Jaap van Marle, 109-149. Dordrecht: Kluwer.

- Baayen, Harald. 1993. "On Frequency, Transparency and Productivity." *Yearbook of Morphology 1992*, eds. Geert Booij and Jaap van Marle, 181-208. Dordrecht: Kluwer.
- Baayen, Harald. 2009 (in press). "Corpus Linguistics in Morphology: Morphological Productivity." To appear in *Handbook of Corpus Linguistics*, eds. A. Ludeling, M. Kyto, and T. McEnery. Berlin: Mouton de Gruyter.
<http://www.ualberta.ca/~baayen/publications/BaayenCorpusLinguistics2006.pdf>
 (accessed January 2009).
- Baayen, Harald, and Rochelle Lieber. 1991. "Productivity and English Derivation: a Corpus-Based Study." *Linguistics* 29: 801-843.
- Baayen, Harald, and Antoinette Renouf. 1996. "Chronicling the Times: Productive Lexical Innovations in an English Newspaper." *Language* 72 (1): 69-96.
- Banks, David. 2005. "On the Historical Origins of Nominalized Process in Scientific text." *English for Specific Purposes* 24: 347-357.
- Bauer, Laurie. 1983. *English Word-formation*. Cambridge: Cambridge University Press.
- Bauer, Laurie. 1988. *Introducing Linguistic Morphology*. Edinburgh: Edinburgh University Press.
- Bauer, Laurie. 2001. *Morphological Productivity*. Cambridge studies in linguistics, 95. Cambridge: Cambridge University Press.
- Bauer, Laurie. 2005. "Productivity: Theories." *Handbook of Word-Formation*, eds. Pavol Stekauer and Rochelle Lieber, 315-334.
- Beard, Robert. 1998. "Derivation." *The Handbook of Morphology*, eds. Andrew Spencer and Arnold Zwicky, 44-65.
- Bergner, H. 1995. "The Openness of Medieval Texts." *Historical Pragmatics: Pragmatic Developments in the History of English*, ed. Andreas H. Jucker, 37-54. Amsterdam: Benjamins.
- Bergs, Alexander. 2005. *Social Networks and Historical Sociolinguistics: Studies in Morphosyntactic Variation in the Paston Letters (1421-1503)*. Berlin/New York: Mouton de Gruyter.
- Biber, Douglas. 1988. *Variation across Speech and Writing*. Cambridge: Cambridge University Press.
- Biber, Douglas. 1995. *Dimensions of Register Variation*. Cambridge: Cambridge University Press.

- Biber, Douglas. 1999. *Longman Grammar of Spoken and Written English*. Harlow, England/New York: Longman.
- Biber, Douglas, and Edward Finegan. 1989. "Drift and the Evolution of English style: A History of Three Genres." *Language* 65: 487-517.
- Booij, Geert, and J. Rubach. 1987. "Postcyclic Versus Postlexical rules in Lexical Phonology." *Linguistic Inquiry* 18 (1): 1-44.
- Burnley, David. 1992. "Lexis and Semantics." *The Cambridge History of the English Language, Vol.II 1066-1476*, ed. Norman Blake, 409-499. Cambridge: Cambridge University Press.
- Bybee, Joan. 1985. *Morphology: A Study of the Relation between Meaning and Form*. Amsterdam/Philadelphia: Benjamins.
- Bybee, Joan. 2007. *Frequency of Use and the Organization of Language*. Oxford: Oxford University Press.
- Camargo, Martin. 1999. "Tria sunt: The Long and the Short of Geoffrey of Vinsauf's *Documentum de modo et arte dictandi et versificandi*." *Speculum* 74 (4): 935-955.
- Campbell, Jackson J. 1967. "Knowledge of Rhetorical Figures in Anglo-Saxon England." *Journal of English and Germanic Philology* 66: 1-20.
- Cannon, Christopher. 1998. *The Making of Chaucer's Language: A Study of Words*. Cambridge: Cambridge University Press.
- Cannon, Garland. 1987. *Historical Change and English Word Formation*. New York/Bern: Peter Lang.
- Caplan, Harry, and Marcus Tullius Cicero. 1989. *Ad C. Herennium de ratione dicendi: Rhetorica ad Herennium*. Cambridge, Massachusetts: Harvard University Press.
- Carstairs-McCarthy, Andrew. 1992. *Current Morphology*. London/New York: Routledge.
- Cawdrey, Robert. 1604. *A Table Alphabetical*, ed. Raymond G. Siemens. Toronto: University of Toronto Library. 1997.
<http://www.library.utoronto.ca/utel/ret/cawdrey/cawdrey0.html> (accessed March 2006).
- Chapman, Don, and Royal Skousen. 2005. "Analogical Modeling and Morphological Change: The Case of the Adjectival Negative Prefix in English." *English Language and Linguistics* 9 (2): 333-357.

- Cigman, Gloria. 1989. "Luceat lux vestra: The Lollard Preacher as Truth and Light." *Review of English Studies* 40 (160): 479-496.
- Clark, Eve. 1993. *The Lexicon in Acquisition*. Cambridge: Cambridge University Press.
- Coleman, Joyce. 2002. "Lay Readers and Hard Latin: How Gower May have Intended the *Confessio Amantis* to be Read." *Studies in the Age of Chaucer* 24: 209-234.
- Coleman, Julie. 1995. "The Chronology of French and Latin Loan Words in English." *Transactions of the Philological Society* 93 (2): 95-124.
- Cowie, Claire. 1998a. *Diachronic Word-formation: A Corpus-based Study of Derived Nominalizations in the History of English*. Thesis (Ph.D.)—Cambridge: University of Cambridge.
- Cowie, Claire. 1998b. "The Discourse Motivations for Neologising: Action Nominalization in the History of English." *Lexicology, Semantics, and Lexicography: Selected Papers from the Fourth G. L. Brook Symposium, Manchester, August 1998*, eds. Julie Coleman and Christian J. Kay., 179-207. Amsterdam/Philadelphia: Benjamins.
- Cowie, Claire, and Christiane Dalton-Puffer. 2002. "Diachronic Word-Formation and Studying Changes in Productivity over Time: Theoretical and Methodological Considerations." *A Changing World of Words*, ed. Javier E. Diaz Vera, 410-437. Amsterdam/New York: Rodopi.
- Crespo, Begona. 2000. "Historical Background of Multilingualism and its Impact on English." *Multilingualism in later medieval Britain*, ed. D. A. Trotter, 23-35.
- Crespo, Begona, and Isabel Moskowich. 2006. "Latin Forms in Vernacular Scientific Writing: Code-switching or Borrowing?" In *Selected Proceedings of the 2005 Symposium on New Approaches in English Historical Lexis (HEL-LEX)*, ed. R. W. McConchie et al, 51-59. Somerville, MA: Cascadilla Proceedings Project.
- Curtius, Ernst Robert. 1953. *European literature and the Latin Middle Ages*. Bollingen series, 36. New York: Pantheon.
- Curzan, Anne, and Chris C. Palmer. 2006. "The Importance of Historical Corpora, Reliability, and Reading." *Corpus-Based Studies of Diachronic English*, eds. Roberta Facchinetti and Matti Rissanen, 17-34. Bern: Peter Lang.
- Cutler, Anne. 1980. "Productivity in Word Formation." *CLS (Chicago Linguistic Society)* 16: 45-51.
- Cutler, Anne. 1981. "Degrees of Transparency in Word Formation." *Canadian Journal of Linguistics* 26: 73-77.

- Dalton-Puffer, Christiane. 1994. "Productive or Not Productive? The Romance element in Middle English Derivation." *English Historical Linguistics 1992*, eds. Francisco Fernández, Miguel Fuster and Juan Jose Calvo, 247-260. Amsterdam/Philadelphia: Benjamins.
- Dalton-Puffer, Christiane. 1996. *The French Influence on Middle English Morphology: A Corpus-based study of Derivation*. Berlin: Mouton de Gruyter.
- Donner, Morton. 1978. "Derived Words in Chaucer's Language." *Chaucer Review* 13: 1-15.
- Dressler, Wolfgang U. 1987. *Leitmotifs in natural morphology. Studies in Language Companion Series*, v. 10. Amsterdam: Benjamins.
- Echard, Sian. 1999. "Designs for reading: Some manuscripts of Gower's *Confessio Amantis*." *Trivium* 31: 59-72.
- Edwards, A. S. G., and Derek Pearsall. 1989. "The Manuscripts of the Major English Poetic Texts." *Book Production and Publishing in Britain 1375-1475*, eds. Jeremy Griffiths and Derek Pearsall, 257-278. Cambridge: Cambridge University Press.
- Eliasson, Stig. 1990. "English-Maori Language Contact: Code-switching and the Free-Morpheme Constraint." *Languages in Contact: Proceedings of the Symposium 16.1. of the 12th International Congress of Anthropological and Ethnological Sciences, Zagreb, July 25-27, 1988*, eds. Rudolf Filipovic and Maja Bratanic, 33-49. Zagreb: Institute of Linguistics.
- Ellis, Nick C. 1994. *Implicit and explicit learning of languages*. London: Academic Press.
- Fabb, Nigel. 1988. "English Suffixation is Constrained Only by Selectional Restrictions." *Natural Language and Linguistic Theory* 6: 527-539.
- Fafara, Richard. 2003. "Gilson and Gouhier: Approaches to Malebranche." *A Thomistic Tapestry: Essays in Memory of Etienne Gilson*, ed. Peter A. Redpath, 107-156. New York: Rodopi.
- Fisher, John. 1992. "A Language Policy for Lancastrian England." *PMLA* 107: 1168-1180.
- Fisiak, Jacek. 1965. *Morphemic Structure of Chaucer's English*. Alabama Linguistic and Philological series, no. 10. University of Alabama: University of Alabama Press.
- Fisiak, Jacek. 1980. *Historical Morphology*. The Hague: Mouton de Gruyter.

- Fisiak, Jacek. 1985. *Historical Semantics, Historical Word Formation*. Berlin: Mouton de Gruyter.
- Fleischman, Suzanne. 1977. *Cultural and Linguistic Factors in Word Formation: An Intergrated Approach to the Development of the Suffix -age*. Berkeley: University of California Press.
- Fox, Denton. 1968. "Chaucer's Influence on Fifteenth-Century Poetry." *Companion to Chaucer Studies*, ed. Beryl Rowland, 385-402. Toronto: Oxford University Press.
- Gadde, Fredrik. 1910. *On the History and Use of the Suffixes -ery, -age and -ment in English*. Lund: Gleerupska Univ. Boekhandeln.
- Gordon, Peter. 1989. "Levels of Affixation in the Acquisition of English Morphology." *Journal of Memory and Language* 28: 519-530.
- Görlach, Manfred. 1991. *Introduction to Early Modern English*. Cambridge: Cambridge University Press.
- Grocers' Company. 1886. *Facsimile of First Volume of MS. Archives of the Worshipful Company of Grocers of the City of London, A.D. 1345-1463*. London: Grocers Company (Richard Clay).
- Hailey, R. Carter. 2007. "To 'Finde Wordes Newe': Chaucer, Lexical Growth, and MED First Citations." *Words and Dictionaries from the British Isles in Historical Perspective*, eds. John P. Considine and Giovanni Iamartino, 14-24. Newcastle-upon-Tyne: Cambridge Scholars.
- Halliday, M. A. K. 1988. "On the Language of Physical Science." *Registers of Written English, Situational Factors and Linguistic Features*, ed. M. Ghadessy, 162-178. London: Pinter.
- Halliday, M. A. K. 1994. *An Introduction to Functional Grammar*. Second edition. London, Melbourne, Auckland: Edward Arnold.
- Halliday, M. A. K. and Ruqaiya Hasan 1976. *Cohesion in English*. London: Longman.
- Hargreaves, Henry. 1966. "Wyclif's Prose." *Essays and Studies* 19: 1-17.
- Harmon, William. 1997. "English Versification: Fifteen Hundred Years of Continuity and Change." *Studies in Philology* 94 (1): 1-37.
- Haspelmath, Martin. 2002. *Understanding Morphology*. London: Arnold.
- Hay, Jennifer. 2003. *Causes and Consequences of Word Structure*. Outstanding

Dissertations in Linguistics. New York: Routledge.

Hay, Jennifer, and Harald Baayen. 2002. "Parsing and Productivity." *Yearbook of Morphology 2002*, eds. Geert Booij and Jaap van Marle, 203-235. Dordrecht: Kluwer.

Inkelas, Sharon. 1990. *Prosodic Constituency in the Lexicon*. New York: Garland.

Jackendoff, Ray. 1975. "Morphological and Semantic Regularities in the Lexicon." *Language* 51: 639-671.

Jarmulowicz, Linda. 2002. "English Derivational Suffix Frequency and Children's Stress Judgments." *Brain and Language* 81: 192-204.

Kahin, Helen Andrews. 1941. "Spenser and the School of Alanus." *ELH* 8 (4): 257-272.

Kastovsky, Dieter. 1986. "The Problem of Productivity in Word-Formation." *Linguistics* 24: 585-600.

Kastovsky, Dieter. 1992. "Semantics and Vocabulary". *The Cambridge History of the English Language, Vol I, The Beginnings to 1066*, ed. Richard Hogg, 290-408. Cambridge: Cambridge University Press.

Kaunisto, Mark. 2007. *Variation and Change in the Lexicon: a Corpus-Based Analysis of Adjectives in English Ending in -ic and -ical*. Language and Computers, no 63. Amsterdam: Rodopi.

Kibbee, Douglas A. 1991. *For to speke Frenche trewely: The French Language in England, 1000-1600 : Its Status, Description, and Instruction*. Amsterdam Studies in the Theory and History of Linguistic Science, v. 60. Amsterdam: Benjamins.

Kiparsky, Paul. 1982. *Lexical Phonology and Morphology*. Cambridge, Massachusetts: M.I.T. Press.

Labov, William. 1972. *Sociolinguistic Patterns*. Philadelphia: University of Pennsylvania Press.

Labov, William. 2001. *Principles of Linguistic Change. Volume 2: Social Factors*. Cambridge, Massachusetts: Blackwell.

Lardiere, Donna. 2006. "Knowledge of Derivational Morphology in a Second Language Idiolect." *Proceedings of the 8th Generative Approaches to Second Language Acquisition Conference (GASLA 2006)*, eds. Mary Grantham O'Brien, Christine Shea, and John Archibald, 72-79. Somerville, MA: Cascadilla Proceedings Project.

- Latham, R. E., and James Houston Baxter. 1965. *Revised Medieval Latin Word-list from British and Irish sources*. London: Published for the British Academy by the Oxford University Press.
- Law, Vivien. 1997. *Grammar and Grammarians in the Early Middle Ages*. Longman Linguistics Library. London: Longman.
- Leader, Damian Riehl. 1988. *A History of the University of Cambridge. Vol.1, The University to 1546*. Cambridge: Cambridge University Press.
- Lieber, Rochelle. 1981. *The Organization of Inflection*. Bloomington: Indiana University Linguistics Club.
- Lieber, Rochelle. 1992. *Deconstructing Morphology: Word Formation in Syntactic Theory*. Chicago: University of Chicago Press.
- Lightfoot, David. 1979. *Principles of Diachronic Syntax*. Austin: University of Texas Press.
- Lloyd, Cynthia. 2005. *Some Latinate Deverbal Suffixes in Middle English: Their Integration, Productivity and Semantic Coherence*. Thesis (Ph.D.)—University of Leeds.
- Marchand, Hans. 1960. *The Categories and Types of Present-day English Word-formation: A Synchronic-diachronic Approach*. Wiesbaden: O. Harrassowitz.
- Marchand, Hans. 1969. *The Categories and Types of Present-day English Word-formation: A Synchronic-diachronic Approach*. Second Edition. Munchen: Beck.
- Matthews, P. H. 1991. *Morphology*. Second Edition. Cambridge: Cambridge University Press.
- Mayerthaler, Willi. 1988. *Morphological Naturalness*. *Linguistica Extranea*, 17. Ann Arbor, Michigan: Karoma.
- McConchie, R. W. 2006. "Disturbling News from the Thirteenth Century: Variation in a Borrowed Lexeme in Middle English." *Selected Proceedings of the 2005 Symposium on New Approaches in English Historical Lexis (HEL-LEX)*, ed. R. W. McConchie et al, 105-112. Somerville, MA: Cascadilla Proceedings Project.
- McMahon, April M. S. 1994. *Understanding Language Change*. Cambridge: Cambridge University Press.
- Meech, Sanford Brown. 1935. "Early Application of Latin Grammar to English." *PMLA* 50 (4): 1012-1032.

- Melčuk, Igor. 1982. *Toward a Language of Linguistics. A Set of Formal Notions for Theoretical Morphology*. Munich: Fink.
- Mersand, Joseph E. 1939. *Chaucer's Romance Vocabulary*. New York: Comet.
- Miller, D. Gary. 1997. "The Morphological Legacy of French: Borrowed Suffixes on Native Bases in Middle English." *Diachronica* 14 (2): 233-264.
- Miller, D. Gary. 2006. *Latin Suffixal Derivatives in English and Their Indo-European Ancestry*. Oxford/New York: Oxford University Press.
- Milroy, Lesley. 1980. *Language and Social Networks*. Baltimore: University Park.
- Moskowich, Isabel and Begona Crespo. 2006. "Lop-webbe and henne cresse: Morphological Aspects of the Scientific Register in Late Middle English." *Studia Anglica Posnaniensia* 42: 133-145.
- Mulcaster, Richard. 1970. *The First Part of the Elementary, 1582*. English Linguistics, 1500-1800; a collection of facsimile reprints, no. 219. Menston: Scolar.
- Murphy, James J. 1964. "A New Look at Chaucer and the Rhetoricians." *Latin Rhetoric and Education in the Middle Ages and Renaissance*, Chapter X: 1-20.
- Murphy, James J. 1965. "Rhetoric in Fourteenth-Century Oxford." *Latin Rhetoric and Education in the Middle Ages and Renaissance*, Chapter IX: 1-20.
- Murphy, James J. 2001a. *Rhetoric in the Middle Ages: A History of the Rhetorical Theory from Saint Augustine to the Renaissance*. Tempe, Ariz: Arizona Center for Medieval and Renaissance Studies.
- Murphy, James J. 2001b. *Three Medieval Rhetorical Arts*. Tempe, Ariz: Arizona Center for Medieval and Renaissance Studies.
- Murphy, James J. 2005. *Latin Rhetoric and Education in the Middle Ages and Renaissance*. Aldershot, Hants, England: Ashgate.
- Murphy, James J., and Martin Camargo. 1990. "The Middle Ages." *The Present State of Scholarship in Historical and Contemporary Rhetoric*, ed. Winifred Bryan Horner, 45-83. Columbia: University of Missouri Press.
- Nevalainen, Terttu. 1999. "Early Modern English Lexis and Semantics." *The Cambridge History of the English Language, Vol. III, Early Modern English 1476-1776*, ed. Roger Lass, 332-456. Cambridge: Cambridge University Press.
- Nevalainen, Terttu, and Helena Raumolin-Brunberg. 1995. "Constraints on Politeness:

- The Pragmatics of Address Formulae in Early English Correspondence.”
Historical Pragmatics: Pragmatic Developments in the History of English, ed.
 Andreas H. Jucker, 541-601. Amsterdam: Benjamins.
- Nevalainen, Terttu, and Helena Raumolin-Brunberg. 2003. *Historical Sociolinguistics: Language Change in Tudor and Stuart England*. Longman Linguistics Library. London: Longman.
- Nightingale, Pamela. 1995. *A Medieval Mercantile Community: The Grocers' Company & the Politics & Trade of London, 1000-1485*. New Haven: Yale University Press.
- Orme, Nicholas. 1976. *Education in the West of England, 1066-1548: Cornwall, Devon, Dorset, Gloucestershire, Somerset, Wiltshire*. Exeter: University of Exeter.
- The Oxford English Dictionary*. 1989. Second edition. *OED Online*. Oxford: Oxford University Press. <http://dictionary.oed.com>
- Peacham, Henry. 1954. *The Garden of Eloquence (1593): A Facsimile Reproduction*. Gainesville, Fla: Scholars' Facsimiles & Reprints.
- Peacham, Henry. 1971. *The Garden of Eloquence, 1577*. English Linguistics, 1500-1800; A Collection of Facsimile Reprints, no. 267. Menston: Scolar.
- Peikola, Matti. 1994. “On the Trail of a Lollard Discourse: Notes on the Relationship between Language Use and Identity in the Wycliffite Sect.” *Topics and Comments: Papers from the Discourse Project*, eds. S. K. Tanskanen and B. Warvik, 75-88. *Anglicana Turkuensia* 13.
- Plag, Ingo. 2003. *Word-formation in English*. Cambridge: Cambridge University Press.
- Pounder, Amanda. 2000. *Processes and Paradigms in Word-Formation Morphology*. Berlin/New York: Mouton de Gruyter.
- Puttenham, George, Richard Puttenham, and John Lumley Lumley. 1970. *The arte of English poesie; contriued into three bookes: the first of poets and poesie, the second of proportion, the third of ornament*. Ohio: Kent State University Press.
- Reddaway, T. F., and Lorna E. M. Walker. 1975. *The Early History of the Goldsmiths' Company, 1327-1509*. London: Arnold.
- Reichl, Karl. 1982. *Categorial Grammar and Word Formation: The De-adjectival Abstract Noun in English*. Tübingen: Niemayer.

- Richardson, Malcolm. 1997. "Women, Commerce, and Rhetoric in Medieval England." *Listening to their Voices: The Rhetorical Activities of Historical Women*, ed. Molly Meijer Wertheimer, 133-149. Columbia: University of South Carolina Press.
- Riddle, Elizabeth. 1985. "A Historical Perspective on the Productivity of the Suffixes *-ness* and *-ity*." *Historical Semantics, Historical Word Formation*, ed. J. Fisiak, 435-461.
- Robins, R. H. 1997. *A Short History of Linguistics*. Longman Linguistics Library. London: Longman.
- Romaine, Suzanne. 1983. "On the Productivity of Word Formation Rules and Limits of Variability in the Lexicon." *Australian Journal of Linguistics* 3: 177-200.
- Romaine, Suzanne. 1985. "Variability in Word Formation Patterns and Productivity in the History of English." *Papers from the Sixth International Conference of Historical Linguistics*, ed. J. Fisiak, 451-465. Amsterdam: Benjamins.
- Rothwell, William. 2001. "English and French in England after 1362." *English Studies: A Journal of English Language and Literature* 82 (6): 539-59.
- Scalise, Sergio. 1984. *Generative Morphology*. Dordrecht, Holland: Foris.
- Schultink, Henk. 1961. "Produktiviteit als morfologisch fenomeen." *Forum der Letteren* 2: 110-125.
- Selkirk, Elisabeth O. 1982. *The Syntax of Words*. Cambridge, Massachusetts: MIT Press.
- Serjeantson, Mary S. 1961. *A History of Foreign Words in English*. New York: Barnes & Noble.
- Spencer, Andrew, and Arnold Zwicky. 1998. *The Handbook of Morphology*. Oxford: Blackwell.
- Sproat, Richard William. 1985. *On Deriving the Lexicon*. Cambridge, Massachusetts: Dept. of Linguistics and Philosophy, Massachusetts Institute of Technology.
- Štekauer, Pavol, and Rochelle Lieber. 2005. *Handbook of Word-formation*. Studies in Natural Language and Linguistic Theory, v. 64. Dordrecht: Springer.
- Stump, Gregory. 1998. "Inflection." *The Handbook of Morphology*, eds. Andrew Spencer and Arnold Zwicky, 13-43.
- Sundby, Bertil. 1995. *English Word-formation as Described by English Grammarians, 1600-1800*. Oslo: Novus Forlag.

- Taavitsainen, Irma, and Paivi Pahta. 2004. *Medical and Scientific Writing in Late Medieval English*. Studies in English Language. Cambridge: Cambridge University Press.
- Taavitsainen, Irma, Paivi Pahta, and Martti Makinen. 2005. "Introduction to *MEMT*." *Middle English Medical Texts* (CD-ROM). Amsterdam: Benjamins.
- Tanenhaus, Gussie Hecht. 1962. "Bede's *De Schematibus et Tropis*—A Translation." *Quarterly Journal of Speech* 48 (3): 237-253.
- Thomas, and G. L. Bursill-Hall. 1972. *Grammatica Speculativa*. London: Longman.
- Thomason, Sarah Grey, and Terrence Kaufman. 1988. *Language Contact, Creolization, and Genetic Linguistics*. Berkeley: University of California Press.
- Trask, R. L. 1996. *Historical Linguistics*. New York: Arnold.
- Trigg, Stephanie. 2006. "Chaucer's Influence and Reception." *The Yale Companion to Chaucer*, ed. Seth Lerer. New Haven: Yale University Press.
- Trotter, D. A. 2000. *Multilingualism in Later Medieval Britain*. Rochester, N.Y.: D.S. Brewer.
- Tuggy, David. 2005. "Cognitive Approach to Word-formation." *Handbook of Word-Formation*, eds. Pavol Stekauer and Rochelle Lieber, 233-265.
- Tyler, Andrea, and William Nagy. 1989. "The Acquisition of English Derivational Morphology." *Journal of Memory and Language* 28: 649-667.
- Urban Dictionary*. "Ownage."
<http://www.urbandictionary.com/define.php?term=ownage> (accessed March 2006).
- Vaahtera, Jaana. 1998. *Derivation: Greek and Roman Views on Word Formation*. Turku: Turun yliopisto.
- Varro, Marcus Terentius, and Daniel J. Taylor. 1996. "De lingua latina X." *Amsterdam Studies in the Theory and History of Linguistic Science*, v. 85. Philadelphia: Benjamins.
- Villadei, Alejandro De. 1993. *El doctrinal: una gramática latina del Renacimiento del siglo XII*. Colección clásicos latinos medievales, 2. Madrid: Akal.
- Volk-Birke, Sabine. 1991. *Chaucer and Medieval preaching: Rhetoric for Listeners in Sermons and Poetry*. Tübingen: Gunter Narr.

- Vorlat, Emma. 1975. *The Development of English Grammatical Theory, 1586-1737: With Special Reference to the Theory of Parts of Speech*. Leuven: University Press.
- Watt, Diane. 1993. "‘No Writing for Writing’s Sake’: The Language of Service and Household Rhetoric in the Letters of the Paston Women." *Dear Sister: Medieval Women and the Epistolary Genre*, eds. Karen Cherewatuk and Ulrike Wiethaus, 127-133. Philadelphia: University of Pennsylvania Press.
- Weinreich, Uriel, William Labov, and Marvin Herzog. 1968. "Empirical Foundations for a Theory of Language Change." *Directions for Historical Linguistics*, eds. W. Lehmann and Y. Malkiel, 95-195. Austin: University of Texas Press.
- Wilson, Thomas. 1560. *Arte of Rhetorique*. From 1909 Edition, ed. G. H. Mair. Oxford: Clarendon Press. Online transcription by Judy Boss. 1998. The Arte of Rhetorique. <http://darkwing.uoregon.edu/~rbear/arte/arte4.htm> (accessed January 8, 2008).
- Wimsatt, James. 1996. "Rhyme, the Icons of Sound, and the Middle English *Pearl*." *Style* 30 (2): 189-219.
- Worshipful Company of Goldsmiths, and Lisa Jefferson. 2003. *Wardens' Accounts and Court Minute Books of the Goldsmith's Mistery of London, 1334-1446*. Rochester, NY: Boydell.
- Yonekura, Hiroshi. 1991. "Gower's Contribution to the English Vocabulary." *Kotoba no kozo to rekishi. Structural and Historical Studies on Languages: Essays Presented to Dr. Kazuo Araki on the Occasion of his Seventieth Birthday*, eds. Hirozo Nakano and Kazuo Araki, 503-524. Tokyo: Eichosa.