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NEGATIVE PREFIXES IN CONTEMPORARY ENGLISH

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I confirm that this thesis is my own work written using solely the sources and literature properly quoted and acknowledged as works cited.

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Anotace

Tato bakalářská práce se zabývá negací vyjádřenou předponami v současné angličtině. Práce nejdříve objasní pojem negace, její filozofické kořeny, jak je vnímána v jazykovědě a zaměří se na její vyjádření pomocí afixů. Dále budou uvedeny a objasněny jednotlivé typy negace, které mohou jednotlivé předpony vyjádřit. Jádrem práce pak bude charakteristika jednotlivých prefixů z morfologického a sémantického hlediska. K tomuto účelu bude práce čerpat jednak ze sekundární literatury a jednak z dat získaných z lingvistického korpusu. Cílem práce je pak určit, jak jsou jednotlivé předpony produktivní a v jakém lingvistickém prostředí se vyskytují.

Klíčová slova: negace, prefixy, morfologie, sémantika, korpus

Abstract

This undergraduate thesis deals with negation expressed by prefixes in contemporary English. The thesis will initially explain the term ‘negation’, its roots in philosophy, how it is understood in linguistics, and will focus on the way it is expressed through prefixes. Further, the types of negation that individual prefixes may express will be described. The core of the thesis will be the characteristics of the individual prefixes from a morphological and semantic point of view. For these purposes, the thesis will use secondary literature, along with data extracted from a linguistic corpus. The goal of the thesis is to determine how productive each prefix is and in what linguistic environment they appear.

Key words: negation, prefixes, morphology, semantics, corpus

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1. Introduction

The English negative prefixes are a group of affixes capable of expressing affixal negation, or, turning the meaning of the base they attach to from positive to negative. Although this description may be correct, it raises more questions than it may answer. What is negation? What is affixal negation? How is it possible that some words are negated by one prefix, but not a different one, and why can some words be prefixed by multiple different negative prefixes? Are there different kinds of negative than ‘not X’? The present thesis shall attempt to answer all these questions. We shall begin by exploring what negation is, its philosophical beginnings, how we may understand it in the world of linguistics, and what exactly is affixal negation. We shall continue by looking at different kinds of negation that can be expressed by the different prefixes. Our main interest, however, will be the negative prefixes themselves, which we shall discuss from the point of view of morphology and semantics. To aid our discussion, we shall look at data extracted from a linguistic corpus, in order to determine which prefixes are the most productive and most used in contemporary language. Our goal is to determine the general tendencies of negative prefixation; to what bases the prefixes attach to, what the meaning of their derivatives is, and whether all the negative affixes are presently still productive.

2. Negation

Negation can be described as “the verbal act of denial or refusal” (Joshi 76), but there is much more to it than this simple description lets on. In this chapter, we explore the phenomenon from a slightly wider perspective, starting with the initial remarks made by Aristotle, which laid the foundations for our current understanding of negation. These shall be followed by an insight into linguistic negation, which will show examples of classification of negation recognised today. Lastly, a brief characteristic of affixal negation will be given.

2.1 Philosophical foundations

The question ‘what is negation’ has been a subject of philosophers for many centuries, even millennia. In the Western philosophical tradition, the main character behind today’s understanding of negation was Aristotle, who defined the “genus of opposition” in his *Categories*, formulating 4 distinct kinds of opposition (Horn 1):

“CONTRARIETY (between two CONTRARIES), e.g. *good* vs. *bad*

CONTRADICTION (AFFIRMATIVE to NEGATIVE), e.g. *He sits* vs. *He does not sit*

CORRELATION (between two RELATIVES), e.g. *double* vs. *half*

PRIVATION (PRIVATIVE to POSITIVE), e.g. *blind* vs. *sighted*”

These formulations would prove as crucial, as the first two, contrariety and contradiction, are commonly applied to affixal negation (Joshi 85). These two kinds of opposition were also later transformed into the Square of Opposition (Horn 1). The Square (see fig. 1) depicts how four statements may correlate with each other as either contradictories, contraries, or subcontraries.

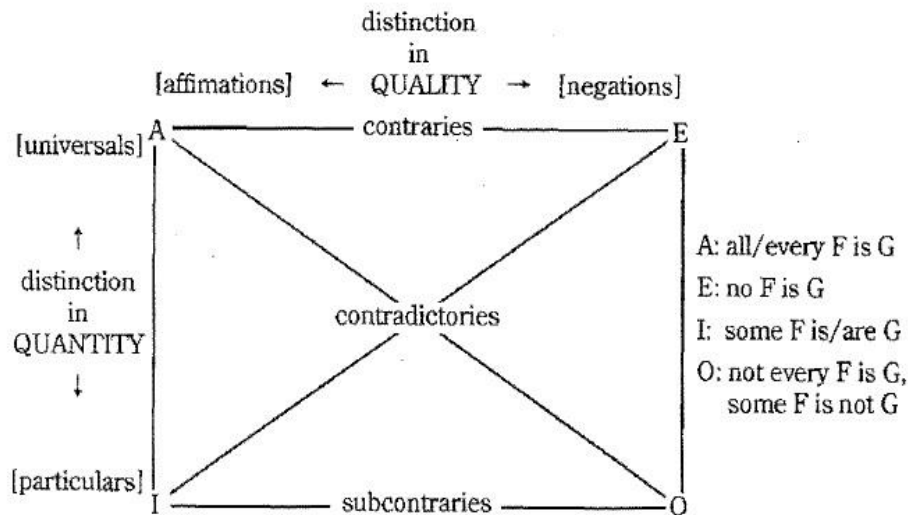


Fig. 1. Square of Opposition as depicted in Laurence R. Horn. "Uncovering The Un-Word", p. 2.

Leaving subcontraries aside, since they are not relevant for this paper, statements A and E are contraries, because only one can be true at a time, but both may be false at the same time. In comparison, statements A and O or E and I are contradictories, because each can be either true or false, but never simultaneously (Horn 2). To put this more simply, contradictories are those statements/words/units which are perfect opposites of each other: if one is true, the other must be false, and vice versa. Contraries, on the other hand, function as end points of a scale, meaning that if one unit of the pair is true, the other is necessarily false, but if one is false, the other may also be false, as they allow for “excluded middle” (Horn 2-3; Zimmer 21), meaning there are other units that fall somewhere between the two ends of the scale.

We now turn our attention to privation. Aristotle (qtd. in Horn 3) wrote about it the following: “We say that that which is capable of some particular faculty or possession has suffered privation when the faculty or possession in question is in no way present in that in which, and at the time in which, it should be naturally present.” Privation, then, effectively means the absence of a characteristic in the creature or object we expect to possess it. In a later work, Aristotle (qtd. in Horn 3) proposed further distinction of privation “with respect to genus” and “with respect to self”, the former applying, for example, to moles, who are blind by their

nature, and the latter applying to an elderly person who became blind over the course of their life. This means, as Aristotle admitted himself, that the number of different possible privatives is innumerable.

Correlation ultimately did not have much, if any, influence over negation as such, but I include it for the sake of completion. According to Horn (3) correlation “involves interdependence of reference”. This means that if A is the double of B, then B must necessarily be the half of A. The same equivalence works outside of maths too, for example, if a person eats their food, the food is in turn eaten, if a person can be called parent, there must be a child, etc.

2.2 Linguistic negation

Whilst linguistics’ understanding of negation is deeply rooted in logic, its boundaries are much broader than those set by Aristotle and may not always agree with interpretations of certain sentences. Joshi (76) described this using the two following sentences:

(1) *The King of France is bald.*

(2) *The King of France is not bald.*

From a purely linguistic point of view, we can agree that the first sentence is affirmative and the second is its negation, and both can be subjected to linguistic analysis. However, logicians may raise the argument whether the first sentence is even meaningful, since France has no king, and the second one thus presents an even bigger dilemma. Is the negated sentence also meaningless, or is it true, because if the king does not exist, he cannot be bald?

That is not to say that contradictories and contraries are entirely removed from language. Joshi (77) lists a total of five examples of sentences on which he demonstrates how differently the terms are understood in linguistics compared to logic.

(3) *Every man is white.*

(4) *No man is white.*

(5) *Not every man is white.*

(6) *Some men are not white.*

(7) *Every man is not white.*

When we compare these statements, (3) and (4) are contrary opposites, whilst (5) and (6) are contradictories. Joshi's concern is not whether either sentence in a pair is true or false, which he further demonstrates by comparing (3) with (4) and (5), which he calls quantitative opposites, and (3) with (7), which are qualitative opposites. He continues that "[the] two types of negation in logic focus on the truth or falsity of propositions, linguistic negation is far more varied (and at times even more subtle)".

Whilst on the subject of subtlety, negation may not be necessarily explicit, especially in writing. Joshi (77-8) notes that although the sentences "You're a great help, thank you!" and "John ate an apple.", although not conventionally negative, may be perceived as such due to intonation, word stress, and other elements that cannot be perceived in writing. Under certain circumstances, in a given context and with certain words accentuated, the first example may be a sarcastic remark that actually means "you have not been of any help at all!", making it essentially negative. Similarly, by putting stress on either element of the second example, we may create different negations. By stressing the subject, we effectively negate someone else being the subject (John did it, not Peter); stressing the verb negates that a different action was done (he ate the apple, not cut it); stressing the object negates something else being the object (it was an apple, not a pear).

Negation can also be expressed explicitly by means of specific words in a sentence or by word-formation processes. Negation at the syntactic level, also referred to as sentential or sentence negation (De Clerq 58; Joshi 78), can be brought about most commonly by 'not' or 'n't' attached to auxiliary verbs, but also words such as 'none', 'neither', etc. (Joshi 78). The distinction between sentence and so-called "constituent" negation is based on the highly

influential work of Klima, who constructed four tests to check for negation: the *either/too* test, the *not even* test, the question tag set, and the *neither* test (De Clerq 58). All tests appear to apply universally to all languages, with the exception of the question tag set, which seems to be specific to English (De Clerq 62-3). This distinction is further connected to the other well-known dichotomy between internal and external negation, whose traces go back to Stoicism, as attested by Horn (qtd. in De Clerq 59). According to the Stoics, internal negation is found inside a proposition, whilst external is found outside of it; however, Horn (qtd. in De Clerq 59) argues that there is no evidence that such external negator exists and calls it “a construct by the advocates of propositional logic”. Essentially, all negators in contemporary languages are a part of internal negation, which includes both sentential and constituent negation. The key difference between these two types is their scope, or, that which is being negated (Huddleston and Pullum 790). Sentence negation, however general the term may be (De Clerq 66), is the widest in scope, which means that it will not accept any other negator above it and also that it may stack on top of other, lower scope negators (De Clerq 68). Based on their scope, De Clerq (69) recognises a number of different types of negators, or negative markers. The lowest in scope are characterising markers, represented by affixes such as *dis-*, *iN-*, or *un-*. Above them are classifying markers, represented by the prefix *non-*. This means that it is possible to stack *non-* on top of words containing a different negative affix, allowing for constructions like “nonunhappy people” (De Clerq 68). Contrasting and modifying markers, particularly *not* in constructions such as “a not very happy man” (De Clerq 68) are said to “take scope in a position above focus” (De Clerq 69), that is, the part of the scope that is “most prominently or explicitly negated” (Huddleston and Pullum 790), and finally regular verbal negators, represented by *not* and the contraction *n’t*, which are able to negate the whole clause.

We can safely call morphological negation part of constituent negation. Processes which can bring about this type of negation are prefixation (*unhappy*), suffixation (*powerless*),

compounding (sugar-free), and conversion (*to dust*) (Cartoni and Lefer 798). As negation expressed through prefixes is the primary subject of this thesis, we shall take a closer look at affixal negation in the following section.

2.3 Affixal negation

Compared to sentence negation, affixal negation has not yet received the same amount of attention and Joshi (75) considers it “a relatively understudied subdomain in linguistic negation”. This does not mean, however, that it is unimportant or infrequent in English, rather, its study proves somewhat more difficult than sentence negation. Here, I shall follow Joshi’s chapter on affixal negation in *The Oxford Handbook of Negation*.

The term ‘affixal negation’ is slightly disputed among authors. According to Dahl (qtd. in Andreou, “Lexical negation” 391), there are many languages in which affixes may express clausal negation, and some authors therefore choose to refer to this type of negation as ‘lexical negation’. Since English is not one of those languages, this thesis will stick to using the term ‘affixal negation’.

Another point of contention for linguists used to be which type of affixes is more common in negation, prefixes, or suffixes. Earlier research done by Sapir and Cysouw indicated that suffixes were used in greater numbers than prefixes and infixes (Joshi 80). Joshi rejects this notion, saying that the number of prefixed negative derivatives greatly exceeds that of those created with suffixes. As a consequence, English knows more negative prefixes, such as *dis-*, *iN-*, *un-*, and others, whilst the only commonly referenced negative suffix is *-less*.

In De Clerq’s (69) classification of negators, affixes are called ‘characterising’ and have the narrowest scope. Indeed, affixes only affect their most immediate element, that being the base to which they attach (Joshi 81). These bases may belong to any major category, that is, nouns, adjectives, and verbs, and affixes may attach to more than just one category, so for

example, *dis-* can create both new verbs (*disagree*) and nouns (*discomfort*) (Joshi 80). These bases, as it appears, can be either positive or neutral in value, but not negative, as Zimmer investigated in his highly influential paper on affixal negation (Joshi 81), although he did find a few examples, which do not quite adhere to this theory, such as *inoffensive*, *incorruptible*, *irreproachable*, etc. (Zimmer 30). Horn (qtd. in Joshi 81) added to this discussion by pointing out that the bases may either be “unmarked” or “ha[ve] a weak positive scalar value”, which in turn means that derivatives such as **dislove* are not acceptable in English, due to the strong positive value of the base (Joshi 81). Joshi further comments on the category of the newly derived words, which they usually share with their base, but cases of the contrary exist, and as we shall see later, certain prefixes are more likely to change the base category more than others.

The most interesting for our purposes are the different semantic classifications of affixal negation. Affixal negation is, in fact, capable of creating other than ‘not X’ opposites of bases. Joshi (82) lists five different aspects of meaning that affixes may negate in their bases. These are spatio-temporality, when an action is inappropriate in a given space or time; directionality, in which the negation usually denotes backward movement, whilst its opposite heads forwards; reversibility, meaning that an action or event caused by the positive term may be reversed by the negation; qualitative judgement, which appears in words capable of expressing positive or negative judgement, in which case the negation is essentially “a deviation from normal”; and quantitative judgement, which is similar to qualitative judgement, except that the deviation is concerned with “the effect of overabundance, insufficiency, or lack, or absence of certain traits/elements”. These aspects are reflected in the types of negation we are going to explore in the following chapter.

3. Semantic categories of affixal negation

So far, we have seen that negation in linguistics does not always express the ‘not X’ type, and this applies to affixal negation as well. The following section will list the seven categories we will be using to categorise derivatives of prefixes in chapter 4 of this thesis. This section follows categories proposed by Joshi (86) in *The Oxford Handbook of Negation* and adds other citations, where applicable.

3.1 Contradictory and contrary negation

As we have discussed previously, the terms ‘contradictory’ and ‘contrary’ are closely related. Both express the notion of polar opposites, the main difference being that contradictory opposites are said to “exhaust the possibilities along a given dimension” (Zimmer 21), whereas contrary terms allow for more words between the two absolutes (Cartoni and Lefer 798). Contradictories are, therefore, like two sides of a card – only one of its sides is visible (true) at any moment in time, and the other must, in turn, be hidden (false). Contraries, on the other hand, are like a scale of colours – a shirt may be white and, therefore, not black, but it could also be blue, in which case neither ‘black’ or ‘white’ is true/applicable.

Contradictories and contraries differ further in their emotive implications. Per Cartoni and Lefer (798-9), contradictory terms are supposedly neutral and descriptive, whilst contraries imply a degree of negative judgement. Therefore, gradable adjectives are capable of creating contraries, and those that are not gradable create contradictories.

I found it to be a little difficult to distinguish between the two categories, and as will become obvious in chapter 4, I tend to see most derivatives as contradictory. Considering that scholars seemingly agree that derived adjectives are mostly contrary, it is possible that some of the words I classified as contradictory would be classified as contraries by someone else. Bauer et al. (365) point out that gradability of adjectives tends to be perceived by speakers differently

and that even normally ungradable adjectives often appear in contexts, in which they appear gradable.

This raises an interesting question to me: is the distinction between contradictories and contraries strictly necessary when speaking about affixal negatives? After all, both have the general meaning of ‘not X’, or direct negation, the only difference being the possibility of other words existing between two contraries. If we consider that both classifications effectively determine two polar opposites, would it be perhaps easier to merge the two categories into a new one called ‘polar negation’? Admittedly, although categorising derivatives would become considerably easier, other aspects of the current system would be lost, most notably the distinction that contrary terms may both be false at the same time, whilst contradictories are always either true or false.

3.2 Scale-external negation

Scale-external negation is somewhat related to contraries. This type of negation “presupposes a scale or a pair of polar opposites”, but rather than the words expressing this type of negation belonging either to the scale or to its poles, they express “the complete irrelevance of the scale or polar opposition in question” (Bauer et al. 365). Bauer et al. give the example *amelodic*, and Andreou (“Stereotype negation” 3) adds that the relevant part of its meaning is “the total absence of melody”, rather than the focus being on the scale *melodic* – *unmelodic*.

3.3 Stereotype negation

A bit more interesting and a fair bit more researched is stereotype negation. Unlike scale extension, stereotype negation remains within the boundaries set by the base. What is negated is a characteristic or set of characteristics of the base, rather than the whole base. In other words, the new word is still “a member of the category denoted by the base noun”, but it

is not a “stereotypical exemplar” of it (Bauer et al. 365). This type of negation appears exclusively on nominal derivatives with *non-* and *un-*. Andreou (“Stereotype negation” 4, 25) ponders whether stereotype negation is a subtype of privation and reaches the conclusion that the key distinction is that what is negated is the “specific value” of the “property” that is absent from the base, rather than the property itself.

3.4 Privation

Privation is the third kind of negation derived from the work of Aristotle. In the most basic terms, privation denotes “the lack of an entity” (Joshi 85), but with prefixes able to create new verbs, the meaning becomes causative “cause to be no X” (Bauer et al. 366). As we established earlier, it is the “absence of what would be expected by nature to be present” (Horn 3) that is at the centre of privation, and Horn (11) presents a somewhat unexpected example of it – *undead*, a derivative perhaps first attested in *Dracula*. Although contradictory interpretation ‘not dead’ is certainly possible, Horn argues that the existence of *alive* as the true contradictory opposite rules out this option, and that ‘lack of death’ is a more accurate description. Indeed, it would be difficult to describe walking corpses in the form of zombies, vampires, and the like as ‘dead’, but ‘alive’ is also obviously not the correct description, therefore a new term somewhere in the middle was invented out of necessity to describe the fictional creatures. Horn draws a similar comparison with artificial flowers and *unalive* – flowers would normally be alive, but these are not.

3.5 Reversal

The following two categories are directly derived from privation, but I found them to be frequent and significant enough to give them their own section. The first of these is reversal, which, as the name suggests, indicates “return to original state” (Joshi 86). In this case, as

pointed out by Horn (13), it is the result of an action, rather than the action itself, that is reversed. Other kinds of reversal come from the realm of indirect negation, as suggested by Joshi (86). These are reversal of direction, exemplified by the pair *attack* – *counter-attack*, when the movement itself is not negated, but another movement goes in the opposite direction, and reversal of action, which “[indicates] an action performed to reverse another previous action”, observable in the pair *tie* – *untie*. Apart from verbs, deverbal nouns and deverbal adjectives can also exhibit this type of negation (Cartoni and Lefer 799).

3.6 Removal

Unsurprisingly, removal may indicate either “the antagonistic relationship between the base and the derivative” or simply “removal of something” (Joshi 86). This meaning can manifest itself in denominal verbs with the prefixes *de-*, *dis-*, and possibly *un-* (Huddleston and Pullum 1690), depending on one’s own interpretation, as removal tends to blend in with reversal quite often (Cartoni and Lefer 799).

3.7 Other semantic categories of negation

The Oxford Handbook of Negation mentions other possible categories of affixal negation, specifically its indirect variation, which do not appear as frequently and will not, with one exception, be making an appearance in the thesis. Although some of them are fairly minor, I still find it appropriate to list them for the sake of completeness.

The first of these is opposition. So far, I have been using the term ‘opposite’ to express the relationship between two terms, where one can be considered positive and the other negative, such as in the case of contradictory opposites. However, opposition may also be considered a distinct type of negation, which means opposition in “notion, action, ideology, etc.” (Joshi 86). This type cannot be called minor; in fact, there are prefixes that specialise in

expressing opposition, *anti-*, *contra-*, and *counter-* (Huddleston and Pullum 1690-1), but authors, such as Huddleston and Pullum, Plag (99), or Hamawand (*Semantics* 72) explicitly distinguish them from the purely negative prefixes we will be discussing in chapter 4. An example given by Joshi (86) is the pair *matter* – *antimatter*, where the latter clearly does not convey ‘not matter’.

Similarly, pejorative negation is another commonly cited type of negation. At its core lies the notion of qualitative judgement (Joshi 86), which manifests as “negative evaluation” (Bauer et al. 366). According to Bauer et al., this negation can be paraphrased as “X wrongly or badly”, and also borders on belonging to evaluative morphology. Typically, this type is expressed by the prefixes *mis-* and *mal-*, which are, similarly to *anti-* and others, often split from other negative prefixes (Plag 99-100; Hamawand, *Semantics* 72, 77-8). Related to pejorative negation is what Joshi (86) calls “badness/wrongness”; a type of negation which relies on qualitative judgement, resulting in new formations denoting “judgement of an entity or ... its aspects [as] unacceptable”. In his example, it can also be expressed by *mis-* as in *behave* – *misbehave*. The last category reliant on qualitative judgement of the base is inferiority, which expresses lower than optimal placement of the base in a hierarchy, such as in *tension* – *hypotension* (Joshi 86).

The remaining two categories recognised by Joshi (86) are insufficiency and over-abundance, both clearly connected with quantitative judgement. The two terms are contradictory by themselves, the first expressing a below optimal level, and the second expressing a higher than desired level. Interestingly, the examples Joshi gives both contain suffixes we would not normally associate with any negative judgement, but, in their respective contexts, they may be understood as such. Insufficiency is exemplified on the pair *normal* – *subnormal*, and over-abundance on *activity* – *hyperactivity*.

4. Characteristics of individual prefixes

In this chapter, we will be examining the individual negative prefixes. The goal is to explore their morphological properties, what kinds of bases they attach to, to what word class their derivatives belong, if there are any preferences for words with a certain suffix rather than a different one, etc., and the membership of their derivatives to the previously discussed categories of negation. The prefixes chosen for this analysis are *a(n)-*, *de-*, *dis-*, *iN-*, *non-* and *un-*, which are recognised as such by Plag and Hamawand. Other researchers also recognise most of these, although Huddleston and Pullum see *de-* as purely reversative (1689), and Bauer et al. add *mal-* and *mis-*, but, since they classify these as only pejorative (367), I decided to leave them out.

In addition to citing other authors, I will also present data extracted from the *Araneum Anglicum Minus* (AAM) corpus compiled by Vladimír Benko. I chose this corpus for its relative novelty (the data in the corpus was compiled in 2013) and because its data was compiled from internet posts, which allows for wider variety of words to appear, unlike corpora comprised of texts from books or dictionaries. One by one, each of the prefixes was searched for in the corpus using the query [word="<prefix>."+"] and a list of lemmas with a minimum frequency of 5 was then extracted. This limit was set due to lemmas with a lower frequency often containing spelling errors and thus artificially expanding the lists without creating actual new words. These lists were then subjected to manual filtering so that all lemmas that did not include the prefixes were eliminated. This presents the problem that it is possible that some lemmas, which were supposed to be included in the lists, were excluded. However, since our goal is not to compile a comprehensive list of all negative derivatives, this should not affect our results in a significant way. The word class, or category, of all remaining lemmas, up to the maximum of 500 in the case of *non-* and *un-*, was then determined. Finally, 50 lemmas were randomly chosen, using a random number generator, to be classified by the type of negation. The lemmas were chosen

proportionally, which means that lemmas with lower frequencies should be represented as much as those with higher frequencies.

Each subsequent section will begin with a discussion concerning the frequencies and their general implications relating to the productivity of each prefix, followed by a table showing an extract from the top and bottom of the compiled lists of lemmas. Some of the lemmas may be interpreted as expressing different word classes. The different interpretations are listed below each other with acronyms marking their categories. From table 3 onwards, the rows in bold stand for lemmas which were chosen for the semantic analysis and are present in the even-numbered tables on the subsequent page. A description of the characteristics of each prefix will follow.

4.1 *a(n)-*

The prefix *a(n)-* is by far the least represented one out of the six we are examining. In fact, there are fewer than 50 lemmas, which means that the type of negation will be determined for all of them. This in itself is significant, as there has to be a reason for such a low representation in the corpus. As we can see in table 1, the most frequent derivative is the noun *atheist* with 1230 recorded uses. Just about breaking the threshold of five instances are the noun *aneuploidy* and the adjectives *aspherical* and *arrhythmic*, the latter of which may be interpreted in two distinct ways in the corpus and these interpretations may express different types of negation, therefore, both are kept in the table.

Frequency-wise, there is a somewhat steady decline throughout the list, but there is one significant exception. The lemma *atheist* appears almost twice as much in the corpus as *asexual*. When comparing the two, the major difference between them is that they belong to different categories and that *asexual* contains the suffix *-al*, which may imply that there is a preference in the language to use morphologically simpler words to create new ones with this prefix. There

may be some truth to this hypothesis, as most of the derivatives ‘created’ out of complex bases appear to be secondary derivations of previously prefixed words, as is the case with *atheist* - *atheism* – *atheistic*, *asexual* – *asexuality*, *asymmetry* – *asymmetric*, etc.; however, it does not apply universally, since there is no *asymptom* to create *asymptomatic* from.

Overall, both the number of lemmas and their frequencies are lower than any other surveyed prefix, not counting the allomorphs of *iN-*, hinting that *a(n)-* is used the least out of all of them.

Table 1Extracts from the list of *a(n)*- derivatives

No.	Lemma	Frequency	Category	Base structure	Negation type
1	<i>atheist</i>	1230	noun	simple	contradictory
2	<i>asexual</i>	661	adjective	complex	contradictory
3	<i>atheism</i>	500	noun	complex	contradictory
4	<i>anomaly</i>	495	noun	bound	contradictory
5	<i>anarchy</i>	473	noun	bound	privative
6	<i>agnostic</i> – adj.	283	adjective	simple	scale-external
7	<i>agnostic</i> – n.	283	noun	simple	scale-external
8	<i>aromantic</i>	255	adjective	complex	privative
9	<i>asexuality</i>	213	noun	complex	contradictory
10	<i>asynchronous</i>	190	adjective	complex	contradictory
11	<i>atypical</i>	127	adjective	simple	contradictory
12	<i>asymmetry</i>	119	noun	simple	contradictory
13	<i>asymmetric</i>	114	adjective	complex	contradictory
14	<i>anorexia</i>	109	noun	bound	privative
15	<i>asymmetrical</i>	101	adjective	complex	contradictory
16	<i>anaerobic</i>	94	adjective	simple	contradictory
17	<i>arrhythmia</i>	90	noun	simple	privative
18	<i>atheistic</i>	87	adjective	complex	contradictory
19	<i>amorphous</i>	83	adjective	bound	contradictory
20	<i>asymptomatic</i>	78	adjective	complex	contradictory
...					
29	<i>ahistorical</i>	19	adjective	complex	contradictory
30	<i>anoxia</i>	18	noun	complex	privative
31	<i>aseptic</i>	17	adjective	complex	contradictory
32	<i>anencephalic</i>	17	adjective	complex	privative
33	<i>acyclic</i>	15	adjective	complex	contradictory
34	<i>aromanticism</i>	15	noun	complex	privative
35	<i>abasic</i>	9	adjective	complex	contradictory
36	<i>aplastic</i>	9	adjective	simple	privative
37	<i>anaemic</i>	9	adjective	bound	privative
38	<i>anarchical</i>	9	adjective	complex	privative
39	<i>atonality</i>	7	noun	complex	scale-external
40	<i>acausal</i>	7	adjective	complex	privative
41	<i>amillennialism</i>	7	noun	complex	scale-external
42	<i>aspherical</i>	5	adjective	complex	contradictory
43	<i>aneuploidy</i>	5	noun	bound	contradictory
44	<i>arrhythmic</i> - medical	5	adjective	complex	privative
45	<i>arrhythmic</i> - musical	5	adjective	complex	contradictory

Table 2Semantics of *a(n)*- derivatives

CONTRADICTIONARY	<i>atheist, asexual, anomaly, asynchronous, atypical, asymmetry, anaerobic, amorphous, asymptomatic, abiotic, ahistorical, aseptic, acyclic, abasic, aspherical, aneuploidy, arrhythmic</i> (musical)
PRIVATIVE	<i>anarchy, aromantic, anorexia, arrhythmia, amoral, an(a)emic, aphasia, astigmatism, anoxia, anencephalic, aplastic, acausal, arrhythmic</i> (medical)
SCALE-EXTERNAL	<i>agnostic, atonality, amillennialism</i>

Table 2 above shows only unique bases, meaning that there is *atheist* but no *atheism*, as these two words are created from the same base and the latter is supposedly a secondary derivation from the former. Even so, there seems to be a larger number of derived adjectives ending in the suffix *-ic*, as is the case in *anaerobic*, *asymptomatic*, *aromantic*, *agnostic*, etc.

The prefix manifests in two allomorphs, *an-*, which attaches to bases which start with a vowel (*an-archy*, *an-aerobic*, *an-encephalic*, etc.), and *a-*, which can be attached to any base with an initial consonant (Hamawand, *Morphology* 69; *Semantics* 60). As far as its pronunciation is concerned, the most frequent one for the *a-* allomorph is /eɪ/ (as in *atheist*, *asexual*, *amillennialism*, etc.), sometimes /æ/ (*agnostic*) or /ə/ (*anomaly*, *amoral*, *aphasia*, etc.), whilst the allomorph *an-* is always pronounced as /æn/ (*anaerobic*, *aneuploidy*, *anencephalic*) (Bauer et al. 360). Furthermore, this prefix appears to attach to bound bases more frequently than other prefixes, for example, the words *anomaly*, *anorexia*, or *anarchy*, neither of which has a ‘positive’ variation in English. As noted by Zimmer (26) or Bauer and Huddleston (1688), *a(n)-* is restricted to “classical bases”, that is, bases of Latin or Greek origin, which include bases that have no meaning in English and that appear only with this prefix, as is the case with the three mentioned above. In turn, we find that it itself is borrowed from Greek, with Zimmer claiming it “goes back to the Greek borrowing of *alpha privatum*” (26). Finally, it is clear that

the prefix is only capable of creating nouns and adjectives, as I was unable to find any verbs that would contain it. Bauer et al. (355, 357) further confirm this suspicion.

As I commented before, the number of words containing *a-* is extremely limited, and we may ask whether it is even still productive in contemporary English. Zimmer, who wrote his work on affixal negation in 1964, claimed that “[it] is clearly of very limited occurrence in English”, (26) whilst Bauer (qtd. in Bauer et al. 361) in 1983 claimed it is “marginally productive”. In *The Oxford Reference Guide to English Morphology*, the authors list a plethora of derivatives they managed to extract from the *Corpus of Contemporary American English* (361-2) along with three examples of texts in which they appear (362), and putting these claims into question in the process.

Another aspect the *Reference Guide* comments on (361) and that we may notice is the field in which they are used. Words like *anaerobic*, *anoxia*, *anorexia*, or *arrhythmia* all appear in scientific or medical discourse. Zimmer noticed in his research that out of 69 *a-* or *an-* adjectives listed in the *Oxford English Dictionary*, 23 of them “[were] cited as being exclusively terms from the vocabulary of biology, botany, medicine, optics, psychopathology, physics, and zoology, ...” (26). We can assign the same quality to most of the words listed in table 2, even though we also see some which would be associated with humanities (*atheist* – religion, *asexual*, *aromantic* – queer studies, etc.).

Finally, the semantics of the prefix appear to be of three different kinds: contradictory, scale-external, and privative. *The Reference Guide* also lists contrary negation as a possibility for this prefix (367), although I do not believe that any of the 44 examined words fit this description. As we can see in table 2, contradictory and privative negation are prevalent, whilst scale-external negation appears in only a very few cases, but it must be said that Bauer et al. do point out that *a-* is preferred in creation of scale-external negatives (369). In fact, I was not able

to find any other scale-external negatives without this prefix, suggesting that it is the only one capable of expressing this kind of negation.

I would like to pay special attention to the word *amoral*. Normally, if we were to give the opposite meaning of the word *moral*, it would be *immoral*. How is it possible, then, that there exists at least one more possible derivative? The key difference lies in the meaning that the different forms denote. Only *immoral* is considered to be a direct negation of *moral*, Zimmer specifies it as “contrary opposite”, whilst all the others, *amoral*, *non-moral*, and *unmoral* do not, and their precise meaning and any difference between them is difficult to point out (Zimmer 27). I consider *amoral* to mean ‘lacking morality’ and classify it as privative. The meaning of the others appears to be a bit more nuanced. I leave examples of all three extracted from AAM for the reader’s own consideration:

- (1) *Lovecraft's Magick Realism is far more dark and convulsive, as ancient and **amoral** forces violently puncture the realistic surface of his tales.*
- (2) *Now we add a clarifying argument, namely, that all forms of evil are, in essence, **non-moral** and hence attributable to God.*
- (3) *"I'm afraid I'm an **unmoral** soul, my Bella," said Mme Storey, smiling.*

4.2 *de-*

The prefix *de-* is in a somewhat strange position when compared with the others. Some researchers, notably Bauer et al., Hamawand, and Plag, do include it whilst discussing affixal negation, but others, such as Huddleston and Pullum or Zimmer, exclude it due to not expressing true negation, and rather functioning as a reversative. This paper accepts the position of the first three mentioned authors and will look at the prefix as if it were a negative prefix just like the others.

We can already start drawing comparisons between *de-* and *a(n)-* by looking at table 3. Obviously, this prefix sees much higher productivity than *a(n)-*, possibly because it is not bound by register or etymology of the base, and it has no allomorphs. The frequency of use is overall higher for *de-* derivatives, and the top lemma, *destruction*, nearly triples the frequency of the runner-up. More interesting, however, is perhaps the bottom part of the table. Even in the abstract, it is clear that *de-* is capable of creating new derivatives with a wider variety of bases, as there is a high number of words at the frequency limit and, in fact, a total of 108 lemmas had a frequency of 10 or lower.

A conclusion we may be able to draw from this is that although there are a lot of derivatives which do not see frequent use, there is a higher number of bases that may create them. However, the early results in table 3 suggest that there is not a great variety in the different types of negation the prefix may be able to express, and as evidenced in table 4, the overall results are not much better. We will discuss why shortly.

Table 3Extracts from the list of *de-* derivatives

No.	Lemma	Frequency	Category	Base structure	Negation type
1	<i>destruction</i>	3486	noun	bound	reversative
2	<i>deficiency</i>	1175	noun	complex	
3	<i>destructive</i>	1122	adjective	complex	
4	<i>degrade</i>	673	verb	simple	
5	<i>deforestation</i>	533	noun	complex	
6	<i>defective</i>	469	adjective	bound	
7	<i>delusion</i>	468	noun	bound	
8	<i>detach</i>	442	verb	bound	removal
9	<i>decode</i>	385	verb	simple	
10	<i>detachment</i>	331	noun	complex	
11	<i>debunk</i>	329	verb	simple	
12	<i>deficient</i>	296	adjective	complex	
13	<i>degenerate</i> – n.	279	noun	simple	
14	<i>degenerate</i> – adj.	279	adjective	simple	
15	<i>degenerate</i> – v.	279	verb	simple	
16	<i>decipher</i>	273	verb	simple	reversative
17	<i>delude</i>	234	verb	bound	
18	<i>decoder</i>	226	noun	complex	reversative
19	<i>dehydration</i>	217	noun	complex	
20	<i>delusional</i>	215	adjective	complex	
...					
246	<i>deprotected</i>	5	adjective	complex	
247	<i>demotivate</i>	5	verb	complex	
248	<i>deflower</i>	5	verb	simple	removal
249	<i>devalueing</i>	5	noun	complex	
250	<i>demagnetize</i>	5	verb	complex	
251	<i>demobilisation</i>	5	noun	complex	
252	<i>demystification</i>	5	noun	complex	reversative
253	<i>deinterlacing</i>	5	noun	complex	
254	<i>detripled</i>	5	adjective	complex	
255	<i>de-enrich</i>	5	verb	complex	reversative
256	<i>dehumanisation</i>	5	noun	complex	
257	<i>decaffeination</i>	5	noun	complex	
258	<i>de-identify</i>	5	verb	complex	
259	<i>demobilise</i>	5	verb	complex	
260	<i>deaccession</i>	5	noun	complex	removal
261	<i>de-leveraging</i>	5	noun	complex	
262	<i>defragmented</i>	5	adjective	complex	
263	<i>demilitarise</i>	5	verb	complex	

Table 4Semantics of *de-* derivatives in a random sample of 50 lemmas

REVERSATIVE	<i>destruction, decipher, decoder, decompose, destabilize, deform, deconstruct, decrypt, deregulate, desegregation, deceleration, de-identified, decompile, decentralisation, defibrillation, defocus, decertify, deserialization, dematerialise, devolutionary, decoupling, defrag, desaturated, delocalization, deprogramming, defacement, desuperheater, demystification, de-enrich</i>
REMOVAL	<i>detach, dehumanize, decapitate, dehydrator, detoxing, demilitarization, denature, delegitimize, deduplication, declaw, de-stemmed, decoherence, decarbonise, de-clutter, deleveraging, degloved, deflower, deaccession</i>
PRIVATIVE	<i>deform, demoralise, desensitise</i>
CONTRARY	<i>debuff</i>

Structurally, we notice that the bases of the words *de-* is able to attach to are either nominal, verbal, or bound (Bauer et al. 355). In particular, it is not rare for the prefix to require either of the suffixes *-ify*, *-ate*, and *-ise*, to form new verbs out of already existing ones (Bauer et al. 363; Hamawand, *Morphology* 71). Examples in table 4 include *demoralise*, *destabilize*, *decertify*, and others. It appears that the suffix *-ise*, or its alternative spelling *-ize*, is the most frequent one in this aspect. Notably, these verbs are able to undergo further derivation via the suffix *-ion*, creating nouns that denote “events or results of processes” (Plag 91). Examples include *demilitarization*, *demystification*, or *defibrillation*. Do note, however, that this is not an unavoidable requirement, as suggested by the words *destruction* or *decoherence*.

The prefix itself was “derived from Latin” (Hamawand, *Semantics* 62) and has the ability to change the word class of the base, which can be either native to English or otherwise, to verb (Bauer et al. 355). Looking at the words in table 4, we can clearly see that this rings true, with examples such as *decipher*, *deform*, *defocus*, *deprogram*, *detox*, *declaw*, *deflower*, and more. They can undergo further derivation, creating new nouns and adjectives in the process, for example, *de-stemmed*, *degloved*, *demilitarization*, etc. In general, it is capable of

combining with nouns, verbs, but also with bound bases, as seen in *detach*, *destruction*, *deceleration*, and others, as pointed out by Bauer et al. (356-7). If we were to look for more differences with *a(n)-*, we would soon find that it does not appear to have a preference for a specific area of language use.

Semantically, according to Bauer et al. (367), the prefix takes on privative meaning when it creates a noun, and reversative or privative when the resulting derivative is a verb. Hamawand's (*Semantics* 63) analysis is more detailed and includes removal as another possible category, saying: "[it] is construed when the negative prefix is affixed to concrete nouns denoting non-humans". He points out that the reversative reading appears in bases either "denoting things or places", or denominal verbs that include the suffixes *-ify*, *-ate*, or *-ise* as discussed above (*Semantics* 62), and the privative one in "simple noun bases denoting things or places" (*Semantics* 63). Apart from these 'prototypical' ones, he further mentions four more peripheral ones, namely reduction, analysis, dismounting ("getting off the vehicle described by the nominal base"), and cancellation (*Semantics* 63-4), although these appear to be quite rare, and I would argue we could potentially label them as subtypes of the main three.

I would like to pay special attention to one word that does not fit the semantic categories established by either Bauer et al. or Hamawand. The word *debuff* is a curious case in that I classify it as a contrary term, which is a category *de-* should not be capable of taking on. The first question we need to ask is, what is a 'debuff'? To answer this question, we need to understand how the word is used in its context. Here, I present two examples extracted from the corpus:

- (1) *The Spiritmaster is the **debuff** specialist and the only class that utilizes pets in Aion.*
- (2) *The new Arena Tie Break system WoW Insider reported last week on a pretty crazy **debuff** that a player had found on the patch 5.4 PTR.*

Particularly the second example makes it clear that the word is used mainly in the context of videogames, specifically the role-playing genre. The meaning here refers to a negative effect which players may either apply or receive, such as different damage-over-time effects, effects which reduce the movement speed of their characters, etc., usually lasting a few seconds. In that sense, we could consider this meaning to be privative, as it restricts and partially strips the affected character of its traits. My reasoning for classifying the word as a contrary term is based on its positive antonym, *buff*. Similarly to debuffs, buffs affect the characters by improving their statistics, such as increased health regeneration, increase in movement speed, etc. However, they may also come with a trade-off, for example, an increase in damage dealt may come with an increase in damage received, an increase in dodge chance may decrease the character's armour statistic, etc. In that sense, some buffs and debuffs may lie somewhere in the middle, thus making the terms *buff* and *debuff* contrary.

Does this then mean we can consider the prefix *de-* to have one more possible meaning? I would argue against it. Firstly, semantics of negative prefixes, as we explored in the previous paragraph, can be rather ambiguous, and, as I alluded to earlier, some may say that the word denotes a privative, rather than a contrary meaning. Secondly, I am not aware of another anomaly similar to this one. *Debuff* does appear to be a special case, which I see as a result of the relatively new coinage of the term.

It is interesting, however, that it was the *de-* variant that ultimately caught on. If we were to try and substitute the prefix for the others we are examining, only *non-* and *un-* feel acceptable, *nonbuff* being related to the original meaning of the adjective *buff* (meaning fit and muscular), and *unbuff* clearly functioning as a reversative verb. Of the other variants, *a-* is blocked by being limited to science-related terms, *dis-* might signal removal, even though it feels rather strange, and *im-*, which I imagine would be the best alternative, both seems somehow awkward to me and is not used at all. If we accept my interpretation, there does not

seem to be a good reason why this prefix in particular is preferred, other than it becoming established in the language. Of course, if we were to accept the privative reading, that would be within the earlier established limitations of *de-* by Hamawand and others.

4.3 *dis-*

The prefixes we have looked at so far were quite focused in their meaning, exhibiting only a few categories of negation. *Dis-* appears to be different in this aspect, as my sample displayed in table 6 included six different types of negation, five of which are already noticeable in the extracts in table 5. Naturally, not all of them are represented equally, but, as we are about to see, the fact that all these types are present is, by itself, significant.

Numbers-wise, we can, again, draw comparisons between this prefix and the previous ones. The total number of lemmas is slightly lower than that of *de-* derivatives, but their overall frequency is significantly higher, *disease* even eclipsing ten thousand uses in the corpus. More significant is the fact that the decrease in frequencies appears to be slower than we have seen so far, suggesting that *dis-* derivatives see a higher use in texts overall. Furthermore, it seems that the spelling of some words is not entirely standardised, as we can see in *dis-information*, spelt with a hyphen, or *disfranchise* without the base initial ‘en’; alternate forms of both of these lemmas appear higher in the list.

Overall, *dis-* derivatives see the highest average use of the three prefixes we have seen so far, even if we exclude *disease*, whose frequency is almost abnormally high.

Table 5Extracts from the list of *dis-* derivatives

No.	Lemma	Frequency	Category	Base structure	Negation type
1	<i>disease</i>	13506	noun	simple	
2	<i>disability</i>	6357	noun	complex	privative
3	<i>disorder</i>	5444	noun	simple	
4	<i>disaster</i>	3979	noun	bound	
5	<i>discount</i>	3309	noun	simple	
6	<i>disappear</i>	3150	verb	simple	reversative
7	<i>disclose</i>	2670	verb	simple	
8	<i>disclosure</i>	2390	noun	complex	
9	<i>disagree</i>	2369	verb	simple	
10	<i>discharge</i>	2343	verb	simple	
11	<i>disappoint</i>	1648	verb	simple	
12	<i>disabled</i>	1621	adjective	complex	
13	<i>discourage</i>	1186	verb	simple	
14	<i>disable</i>	1124	verb	simple	
15	<i>disadvantage</i>	1079	noun	complex	contradictory
16	<i>dislike</i>	1036	verb	simple	contrary
17	<i>disappointment</i>	924	noun	complex	
18	<i>discomfort</i>	879	noun	simple	
19	<i>discard</i>	862	verb	simple	
20	<i>disregard – n.</i>	801	noun	simple	
...					
221	<i>discharger</i>	7	noun	complex	
222	<i>disagreeableness</i>	7	noun	complex	privative
223	<i>disproof</i>	7	noun	simple	
224	<i>dislodgement</i>	7	noun	complex	
225	<i>disinclined</i>	7	adjective	complex	
226	<i>disintegrative</i>	6	adjective	complex	reversative
227	<i>disfluency</i>	6	noun	simple	
228	<i>dis-empowering</i>	6	adjective	complex	
229	<i>disintermediate</i>	6	verb	complex	
230	<i>disburden</i>	6	verb	simple	
231	<i>disfranchise</i>	5	verb	simple	reversative
232	<i>dismission</i>	5	noun	complex	
233	<i>disconfirm</i>	5	verb	simple	
234	<i>disambiguate</i>	5	verb	simple	
235	<i>disallowance</i>	5	noun	complex	
236	<i>dis-prove</i>	5	verb	simple	contradictory
237	<i>disconfirming</i>	5	noun	complex	
238	<i>dis-information</i>	5	noun	complex	pejorative

Table 6Semantics of *dis-* derivatives in a random sample of 50 lemmas

REVERSATIVE	<i>disappear, dismantle, disclaimer, dislodge, disillusion, disembark, dissociative, disassembly, disaggregated, disestablish, disjunctive, discounter, disbarment, disinter, disintegrative, disfranchise</i>
CONTRADICTIONARY	<i>disadvantage, disobey, disallow, disorganized, disobedient, discontinuous, dissonant, disproportion, discouraging, disinclined, disfavour, disquietude, disprove</i>
PRIVATIVE	<i>disability, disagreement, disgrace, disbelief, disinterested, discoloration, disharmony, disequilibrium, disloyalty, disenchantment, disunity, disagreeableness</i>
REMOVAL	<i>disarmament, dishonor (verb), dispossession, disambiguation, disassociation</i>
CONTRARY	<i>dislike, disservice, discordant</i>
PEJORATIVE	<i>dis-information</i>

Looking closer at table 6, we notice that, similarly to the previously discussed *de-*, there are no apparent allomorphs to this prefix. However, Bauer et al. recognise *dys-*, which appears predominantly on Greek bases, as its “orthographic variant”, meaning words such as *dysfunction*, *dyslexia*, or *dysplasia* can also be considered derivatives of this prefix (357). The default *dis-* is otherwise of Latin origin (Hamawand, *Semantics* 64) and capable of attaching most commonly to verbs and sometimes nouns and adjectives (Andreou, “Lexical negation” 393) and usually does not change the category of its base, although exceptions exist (Bauer et al. 357-8).

Latinate bases are also the preference for *dis-*, even though there are examples of words native to English that can admit the prefix, such as *disbelief*, *dislike*, or *disfathered* (Bauer et al. 358). Although most derivatives created with *dis-* have complex morphology, there is no apparent preference for words with certain suffixes to take on this prefix rather than a different one. As far as productivity is concerned, the prefix is only marginally productive in

contemporary language (Bauer et al. 362), and according to Zimmer (28), it was most productive during the 16th and 17th centuries.

As I alluded to earlier, *dis-* is able to denote multiple different types of negation. Judging by table 6, the most common are reversative, contradictory, and privative readings. Researchers (Bauer et al. 367; Plag 100) agree that there is a tendency for adjectives to be contradictory or contrary and for nouns to be privative, although, as is apparent in table 6, this does not apply universally. There is slight disagreement when it comes to verbs. Bauer et al. list these derivatives as either privative or reversative (367), whilst Plag believes them to be either reversative or negated “in much the same way as clausal negation” (100), which I interpret as either contradictory or contrary. My own data suggests both to be true, as even in the small sample I found examples of all four categories. Removal is another possible, although rarer, category that the prefix may take on, particularly with intransitive verbs, such as in *dispossess* (Hamawand, *Morphology* 72), or concrete nouns, in which case the change of category takes place, e.g., in *disarm* (Hamawand, *Semantics* 65-6).

As was the case with *amoral* earlier, there is another base whose negative counterpart we usually associate with a different prefix. The word *disinterested* is similar in that it also denotes a lack of its base, and is therefore privative, but this case is a little different. I would say that we most commonly associate the word *interest* with things like hobbies; however, in this sense, it refers to the lack of objectivity of the person when dealing with something, commonly used in the phrase ‘conflict of interest’. This is the meaning *disinterested* negates, and expresses the lack of interest, or impartiality. The *Oxford Advanced Learner’s Dictionary* (OALD) points out that “it is sometimes used instead of *uninterested*”, particularly in spoken language. I find that to be rather surprising, especially considering *un-* is the preferred prefix in contemporary language, owing to it being native to English, as we shall discuss later. For now, we can at least note that, seeing as this is the second example of this phenomenon, the existence

of a derivative with one prefix does not necessarily block other variants and that these have a tendency to create a reading that is neither contradictory nor contrary.

Finally, the random sample revealed an example of pejorative negation – *dis-information*, or its much more common hyphenless variant, *disinformation*. This meaning may be somewhat surprising, especially considering that Bauer et al. (367) do not list pejorative negation as one of the types of negation *dis-* should be capable of expressing, although the meaning “faulty X” is mentioned by Plag (100). Nevertheless, we can assume that this reading is rather rare for this prefix. What I find interesting is how we transform this noun into a verb. Notice that we would not usually try to ‘disinform’ someone, but rather ‘misinform’ them, the former having just a single example in the corpus, whilst the latter has over a hundred. The change of the prefix in this case is critical, as *mis-*, along with *mal-*, is the prototypical prefix capable of forming pejoratives. Nevertheless, Andreou (“Lexical negation” 4) recognises the verb *disinform* as a pejorative, along with *dishear*; a verb, which also has a better-known variant with *mis-*, and which does not appear in the corpus at all.

However, it is possible that this unique reading of *dis-* comes from an altogether different source. As the OALD points out, *disinformation* is not a word coined in the English language, rather, it was “formed on the pattern of Russian *dezinformatsiya*”. Is it possible that the use of *dis-* is in this case purely incidental? Further etymological research would be necessary to absolutely confirm this, but it appears to be rather likely. For this reason, I choose to think of *disinformation* as an anomaly caused by borrowing from another language.

4.4 *iN-*

The prefix *iN-* is interesting for its number of allomorphs, which depend on the first letter of the base to which they attach. A short look at tables 7-10 tells us that this affects their productivity greatly. Whilst there are almost 300 derivatives of the *in-* variant, there are only

14 *il-* derivatives. What all four tables show, however, is that derivatives created out of adjectives are far more prevalent than their related nouns created by further derivation, as we can observe in *independent* (8852) – *independence* (2607), *impossible* (5546) – *impossibility* (261), *irrelevant* (1049) – *irrelevance* (75), and *illegal* (4058) – *illegality* (70). This suggests that we are overall likely to find *iN-* in adjectives, rather than other categories. Furthermore, the numbers tell us that *iN-* is possibly one of the more historically productive prefixes, as it has the most lemmas out of the four prefixes we have seen so far. I say ‘historically’, because the contemporary production is a disputed topic, which we will explore later. The number of lemmas with a very low frequency (10 or lower) also seems rather small, suggesting that most of its derivatives see a wider use, unlike, for example, *de-* derivatives.

The number of allomorphs necessitates a small adjustment in how we choose derivatives for the semantic categorisation. Since they do not differ in meaning, it would be unnecessary to make a separate sample out of each list, so the lemmas were chosen proportionally, as if they were part of singular list. This leaves us with 34 *in-* derivatives, 10 *im-* derivatives, 4 *ir-* derivatives, and 2 *il-* derivatives, totalling the 50 lemmas shown in table 11.

Table 7Extracts from the list of *in-* derivatives

No.	Lemma	Freq	Category	Base str.	Neg. type
1	<i>independent</i>	8852	adjective	complex	
2	<i>incredible</i>	3327	adjective	simple	
3	<i>independence</i>	2607	noun	complex	privative
4	<i>inevitable</i>	1599	adjective	bound	
5	<i>infinite</i>	1545	adjective	simple	
6	<i>informal</i>	1442	adjective	complex	
7	<i>inequality</i>	1408	noun	complex	
8	<i>invisible</i>	1284	adjective	simple	
9	<i>injustice</i>	1186	noun	complex	
10	<i>inappropriate</i>	1180	adjective	complex	
11	<i>inability</i>	1160	noun	complex	
12	<i>inadequate</i>	1132	adjective	simple	
13	<i>incorrect</i>	1119	adjective	simple	
14	<i>invaluable</i>	982	adjective	complex	
15	<i>inexpensive</i>	968	adjective	complex	
...					
270	<i>insouciant</i>	5	adjective	bound	
271	<i>inclemency</i>	5	noun	complex	
272	<i>infeasibility</i>	5	noun	complex	
273	<i>indecorous</i>	5	adjective	complex	
274	<i>indifferentism</i>	5	noun	complex	
275	<i>incredibility</i>	5	noun	complex	
276	<i>inexistent</i>	5	adjective	simple	
277	<i>insolvable</i>	5	adjective	complex	contradict.

Table 8Extracts from the list of *im-* derivatives

No.	Lemma	Freq	Category	Base str.	Neg. type
1	<i>impossible</i>	5546	adjective	simple	
2	<i>immune</i>	2180	adjective	bound	
3	<i>imbalance</i>	586	noun	simple	
4	<i>immunity</i>	576	noun	complex	
5	<i>immoral</i>	553	adjective	simple	
6	<i>improper</i>	521	adjective	simple	contradict.
7	<i>immortal</i>	487	adjective	simple	
8	<i>imperfect</i>	398	adjective	simple	
9	<i>impartial</i>	364	adjective	simple	
10	<i>immortality</i>	346	noun	complex	
11	<i>impunity</i>	334	noun	bound	
12	<i>impatient</i>	324	adjective	simple	contradict.
13	<i>immature</i>	275	adjective	simple	
14	<i>impurity</i>	266	noun	complex	
15	<i>impossibility</i>	261	noun	complex	
...					
77	<i>impracticality</i>	7	noun	complex	
78	<i>impenitent</i>	7	adjective	simple	
79	<i>improvident</i>	7	adjective	simple	
80	<i>impracticability</i>	6	noun	complex	
81	<i>impenetrability</i>	6	noun	complex	
82	<i>impecunious</i>	6	adjective	simple	
83	<i>impalpable</i>	5	adjective	simple	
84	<i>imponderable</i>	5	noun	complex	

Table 9Extracts from the list of *ir-* derivatives

No.	Lemma	Freq	Category	Base str.	Negation
1	<i>irrelevant</i>	1049	adjective	simple	
2	<i>irrational</i>	586	adjective	complex	
3	<i>irregular</i>	546	adjective	simple	contrary
4	<i>irresponsible</i>	429	adjective	complex	
5	<i>irresistible</i>	287	adjective	complex	
6	<i>irreversible</i>	228	adjective	complex	
7	<i>irregularity</i>	209	noun	complex	
8	<i>irrevocable</i>	130	adjective	complex	
9	<i>irreplaceable</i>	112	adjective	complex	
10	<i>irreparable</i>	112	adjective	complex	
11	<i>irreverent</i>	102	adjective	simple	
12	<i>irrefutable</i>	94	adjective	complex	
13	<i>irrationality</i>	89	noun	complex	
14	<i>irreconcilable</i>	82	adjective	complex	
15	<i>irrelevance</i>	75	noun	complex	privative
...					
27	<i>irreligion</i>	11	noun	simple	
28	<i>irrecoverable</i>	8	adjective	complex	
29	<i>irrationalism</i>	8	noun	complex	
30	<i>irreversibility</i>	8	noun	complex	
31	<i>irreducibility</i>	7	noun	complex	contradict.
32	<i>irremediable</i>	6	adjective	complex	
33	<i>irresolvable</i>	6	adjective	complex	
34	<i>irremovable</i>	5	adjective	complex	

Table 10Complete list of *il-* derivatives

No.	Lemma	Freq	Category	Base str.	Negation type
1	<i>illegal</i>	4058	adjective	simple	contrary
2	<i>illicit</i>	502	adjective	bound	
3	<i>illiterate</i>	283	adjective	simple	
4	<i>illegitimate</i>	243	adjective	complex	
5	<i>illogical</i>	181	adjective	complex	
6	<i>illiteracy</i>	107	noun	complex	
7	<i>illegality</i>	70	noun	complex	
8	<i>illegible</i>	44	adjective	simple	
9	<i>illiquid</i>	38	adjective	simple	
10	<i>illiberal</i>	32	adjective	simple	
11	<i>illegitimacy</i>	24	noun	complex	
12	<i>illogic</i>	18	noun	simple	
13	<i>illimitable</i>	12	adjective	complex	
14	<i>illiquidity</i>	8	noun	complex	contradict.

Table 11

Semantics of *iN-* derivatives in a random sample of 50 lemmas with proportionally represented allomorphs

CONTRADICTORY	<i>insufficient, inconsistent, improper, impatient, inert, impersonal, incoherent, inflexible, intractable, immobilize, indivisible, ineffable, inoperable, imprudent, inapplicable, invariable, intransigent, indistinct, impolite, impermanent, indefinable, insubordinate, irreproachable, ineradicable, imperturbable, indisposed, illiquidity, infeasible, irreducibility, innumerate, insolvable</i>
PRIVATIVE	<i>independence, inconvenience, intolerance, inefficiency, inaction, inhuman, irrelevance, imbecile (N), incompatibility, indecency, indiscretion, inaccessibility, incapacitation, indiscipline</i>
CONTRARY	<i>illegal, irregular, incredulous, inexpedient, implausibility</i>

As established, *iN-* may appear in a total of four allomorphs; the result of what we may term as “obligatory assimilation” (Bauer et al. 180). The two most specialised ones are *il-* and *ir-*, which attach only to bases that begin with their corresponding consonants, /l/ or /r/. In the case of *im-*, it attaches to those bases which begin with bilabial consonants /b/, /m/, or /p/ (Huddleston and Pullum 1671-2, 1687), whilst the default *in-* is used in all other cases, with the caveat that the alveolar /n/ pronunciation is replaced by the velar /ŋ/, when attached to bases beginning with velar consonants. Whilst on the subject of pronunciation, we notice that the initial consonant of the base is doubled in writing, for example, in *illegal*, *irregular*, or *immobilize* from table 11, but at the same time, this doubling is not reflected in the pronunciation, and the added consonant of the prefix is deleted (Bauer et al. 180, 359).

From the purely morphological point of view, the prefix, much like *dis-*, attaches to non-native bases, but it does not appear to be capable of changing their category, not even occasionally (Bauer et al. 358), those being adjectives and verbs, with *iN-* nouns being the results of additional suffixation (Huddleston and Pullum 1689), even though Bauer et al. (356)

do list a few examples of nouns that appear to be primarily *iN-* prefixed without another affix aiding the nominalisation, as well as some derivatives of bound bases. We may, in my opinion, count *imbecile* among the latter mentioned, although the base is not recognised in contemporary language, the word literally meaning ‘without a supporting staff’, as per the OALD.

Contemporary production of the prefix is a subject of interesting discussion. Marchand (qtd. in Zimmer 29) believed that *iN-* is no longer productive and that most of its derivatives were coined in the 16th and 17th centuries, with the newer ones from the 19th century having “a learned, scientific character”. Zimmer does reflect this opinion, however he adds that “new formations with *in-* are not unheard of” and lists a quote from a message by US President Kennedy to USSR Premier Khrushchev containing the word ‘immanageable’ and adds that this is probably due to “a striving after “officialese” hypercorrectness” (29). Bauer et al. question the lack of modern-day coinages and list examples of possible new derivatives containing the prefix, including *immedical*, *inextractable*, *indescriptible*, and others (361).

One somewhat unfortunate characteristic of the form *in-* is its polysemy. Cartoni and Lefer (801) note *in-house* as an example of the prefix denoting a meaning different from negative. Furthermore, these ‘other’ *in-*s appear to still be productive, unlike the negative variant, which is further disadvantaged by the existence of *un-*. To expand on their point, consider the pairs *include* – *exclude*, *increase* – *decrease*, *input* – *output*. All three pairs may be seen as contrary, however, neither of them utilises *in-* as a negator. In these cases, the prefix has a directional meaning; in *include* and *input*, it functions similarly to the adverb ‘inside’, and in *increase* it denotes upward movement. *In-* is not the only prefix susceptible to this type of confusion. In the word *distinguish*, *dis-* is not a negative prefix, and the OALD notes in the word origin section that its meaning is closer to the adverb ‘apart’. The examples listed here are relatively easy to distinguish, but others, such as the word *discover*, may prove to be more difficult. Is the meaning of *dis-* here negative and, therefore, the word as a whole has a meaning

similar to that of ‘uncover’, or is it more nuanced, lacking the reversative aspect, closer to ‘pull apart’? Ultimately, it comes down to the context in which it is used, but both are possible interpretations.

Returning our focus to negation, the prefix *iN-* predominantly denotes contradictory and contrary meanings on adjectives and privative meaning on nouns generally meaning “lack of X” (Andreou, “Lexical negation” 393), although the former two are also possible (Bauer et al. 367). There are a few notable exceptions when it comes to adjectives. For example, the adjective *inhuman* denotes a lack of humanity and is thus considered privative. Possible questions may arise as to the status of the verb *immortalize*, which is classified in the table as contradictory. The *in-* verbs are obviously a result of further suffixation, mostly realised through suffixes *-ise*, *-ate*, and *-ify*, and tend to have the same meaning as the adjective.

Upon closer inspection, we may notice that the suffixes *-able* and *-ible* are often repeated in the derived adjectives. According to Zimmer (31), these forms can be “interpreted as compound”, the literal meaning of the suffix being “prone to X” or “capable of being X”. These adjectives can be further nominalised by adding the suffix *-ity*, meaning roughly ‘capability’. In the sample, 15 out of the 50 analysed words, or 30%, exhibit this kind of affixation, with the number reaching close to 40% in the whole corpus. Of course, this last number needs to be taken cautiously, due to the reasons I discussed at the beginning of the chapter, but it seems unlikely my filtering would skew the results so drastically as to make this estimate completely out of the realm of possibility. We can, therefore, draw the conclusion that there is probably a somewhat close connection between the prefix *iN-* and the *-able* and *-ible* suffixes.

4.5 *non-*

The last two prefixes we will discuss here, *non-* and *un-*, share two common characteristics. First, researchers universally agree that these are the two contemporarily

productive negative prefixes in the English language (Bauer et al. 361; Huddleston and Pullum 1688; Zimmer 32, 35). Second, probably due to the aforementioned factor, they are by far the most represented in the corpus. The total number of *non-* derived lemmas approached 900, most of these being adjectives with complex morphology. For the small sample, the total number of lemmas, which I will call the extended sample, was limited to 500, which should prove sufficient for the purposes of this thesis. As we can see in table 12, the frequency of these lemmas is not particularly high, but even the last lemma of the extended sample stays above the minimum frequency limit, due to the sheer number of derivatives the prefix creates. Two more immediately noticeable aspects of *non-* prefixation are the presence of a hyphen in most words in the table, which I will discuss shortly, and that most of the words we see are adjectives made out of complex, usually adjectival, bases. There are some nominal bases apparent in the extracts, but only a few seem to create new nouns, the majority rather also creating adjectives.

Table 12Extracts from the list of *non-* derivatives

No.	Lemma	Frequency	Category	Base structure	Negation type
1	<i>nonprofit</i>	2257	noun	simple	contrary
2	<i>non-profit</i>	2084	adjective	simple	
3	<i>nonsense</i>	1052	noun	simple	
4	<i>non-governmental</i>	463	adjective	complex	
5	<i>non-existent</i>	349	adjective	complex	
6	<i>nonfiction</i>	338	noun	simple	
7	<i>non-fiction</i>	334	noun	simple	
8	<i>non-commercial</i>	291	adjective	complex	
9	<i>non-stop</i>	222	adjective	simple	
10	<i>non-native</i>	193	adjective	simple	
11	<i>non-violent</i>	190	adjective	simple	
12	<i>nonexistent</i>	189	adjective	complex	
13	<i>noncommercial</i>	187	adjective	complex	
14	<i>nonlinear</i>	184	adjective	complex	
15	<i>non-refundable</i>	180	adjective	complex	
16	<i>non-traditional</i>	172	adjective	complex	
17	<i>nonviolent</i>	170	adjective	simple	
18	<i>nonsensical</i>	159	adjective	simple	contradictory
19	<i>non-member</i>	144	noun	simple	
20	<i>non-partisan</i>	141	adjective	simple	
...					
483	<i>non-delivery</i>	9	noun	complex	
484	<i>non-inferential</i>	9	adjective	complex	
485	<i>non-instrumental</i>	9	adjective	complex	
486	<i>non-IT</i>	9	adjective	simple	
487	<i>non-daily</i>	9	adjective	complex	
488	<i>non-proletarian</i>	9	adjective	simple	
489	<i>non-PTSD</i>	9	adjective	simple	contradictory
490	<i>non-genetic</i>	8	adjective	complex	
491	<i>non-law</i>	8	adjective	simple	
492	<i>non-approved</i>	8	adjective	complex	
493	<i>non-statutory</i>	8	adjective	complex	contradictory
494	<i>nonviable</i>	8	adjective	simple	
495	<i>non-negligible</i>	8	adjective	complex	
496	<i>non-management</i>	8	adjective	complex	
497	<i>nonuse</i>	8	noun	simple	
498	<i>nondeterministic</i>	8	adjective	complex	
499	<i>non-directive</i>	8	adjective	complex	
500	<i>nongovernment</i>	8	adjective	complex	

Table 13Semantics of *non-* derivatives in a random sample of 50 lemmas

CONTRADICTIONARY	<i>nonsensical, noncompliance, non-Jewish, non-threatening, non-EU, non-cash, non-judgmental, non-US, non-monetary, non-work, non-voting, non-uniform, non-descript, non-kosher, nonstandard, non-productive, nonlinearity, non-interference, non-intrusive, non-teaching, non-attendance, non-mainstream, noncustodial, non-controversial, nonlethal, non-Apple, noncompetitive, non-interest, non-linguistic, non-text, nonqualified, non-melanoma, non-carbonated, non-social, non-randomized, nonsectarian, non-parametric, non-cognitive, non-Islamist, non-PTSD, non-statutory</i>
CONTRARY	<i>nonprofit, non-essential, nonthreatening, non-fictional</i>
PRIVATIVE	<i>nonpayment, nonchalance</i>
STEREOTYPE	<i>nonresident, non-citizen</i>

As I alluded to earlier, the first notable characteristic of these derivatives is the presence of a hyphen in the vast majority of them. Of the 500 words analysed, almost 80% of them use a hyphen between the prefix and the base. This is not necessarily the only prefix to do this, there are cases of hyphenated *de-* and *dis-* derivatives as well, however, most of these have hyphenless alternatives in the corpus, and their number cannot compare to that of *non-*. Nevertheless, it is apparent that *non-* is quite a bit different from other negative prefixes, and as we will see, orthography is not the only thing that sets it apart from other prefixes we have discussed so far.

The last of the Romance prefixes (Hamawand, *Semantics* 68) attaches to both native and non-native adjectives and nouns, the latter apparently preferring this particular affix (Bauer et al. 355, 357, 362). That is not to say that it does not attach to verbs; however, these tend to create new adjectives, such as in the case of *non-stick*, and in fact, there is not a single verb in the whole extended sample. Similar use is apparent with certain nouns, for example, in the adjective *non-cash* from the table above. *Non-* often competes with *un-*, but this use is exclusive

to the former (Huddleston and Pullum 1688). Morphologically significant may also be the repeated presence of the suffixes *-al*, *-ible*, *-ic(al)*, *-ous*, and possibly others (Zimmer 32).

There is one other significant difference between *non-* and the other affixes we have seen so far. Possibly due to the frequent use of a hyphen, the prefix is capable of attaching to abbreviations, as we can see in *non-US*, *non-EU*, or *non-PTSD*, creating new adjectives that mean ‘not associated with’ or ‘not belonging to’. This use is not at all frequent, the total number of cases definitely does not exceed 5%, but that is still more than the 0% of all other prefixes combined. Clearly, there is some need for speakers to create these adjectives, most likely to express a difference between two things, for example, a country that is part of the European Union and a country that is not. The far more interesting question is: why *non-*? By the process of elimination, it is clear that both *a(n)-* and *de-* are out of the picture, the former being highly specialised, and the latter not being able to express this type of negation. Of the remaining ones, *iN-* does create hyphenated adjectives, but their meaning is locative, and there are none created from abbreviations. A single example of an *un-* adjective created out of an abbreviation that makes the frequency limit is *un-PC*, but there is also a *non-* variant that sees similarly low overall usage. Semantically, however, they appear equal. This means that there is possibly a similar type of blocking going on as there was with the denominal verbs mentioned in the previous paragraph.

The negation *non-* presents can be either contradictory or contrary on adjectives, or privative or stereotype on nouns (Bauer et al. 370-1; Plag 100-1). Bauer et al. also note contrary as a possible meaning in nouns (367, 370), Plag describes this as “not having the character of X” and notes that this reading was eventually broadened into stereotype negation (101), hence why we could read *non-resident* as either ‘not resident’ or ‘resident, but not from here’.

A notable difference between *non-* and its direct rival *un-* is that the same bases prefixed with the former remain emotively neutral, whilst those with the latter “may convey criticism

and gradability”. Examples of this difference would be the pairs *non-repeatable* – *unrepeatable*, *non-productive* – *unproductive*, and *non-professional* – *unprofessional* (Huddleston and Pullum 1989). Even when more affixal variants are present, *non-* remains the most neutral, as in the quartet *irreligious* (hostile to religion) – *unreligious* (secular) – *areligious* (scale-external negation) – *non-religious* (neutral) (Bauer et al. 379), or in the pair *unmoral* – *nonmoral* we saw whilst discussing the prefix *a(n)-*.

4.6 *un-*

The last of the negative prefixes is *un-*, which is, just like *non-*, highly productive in English. The number of lemmas extracted from the corpus easily extended one thousand, and, as we can see in table 14, even the last lemma of the extended sample has the frequency of 29, which is more than the last lemma of *non-* derivatives. The high number of lemmas and their high frequencies tell us that *un-* is unquestionably the most productive negative prefix in English today. Furthermore, particularly in the bottom part of table 14, there is a noticeable presence of adjectives derived from past participles, and indeed, a lot of such adjectives made it into the narrow sample in table 15 as well. Notably, there is a prevalence of new adjectives created with the prefix, but there are also nouns and, especially verbs, sprinkled throughout the list. Also notable is the slow decline in frequency across the different lemmas, as there do not appear to be significant drops between them from the fourth one downwards, which only further proves how often *un-* words are used.

Table 14Extracts from the list of *un-* derivatives

No.	Lemma	Frequency	Category	Base structure	Negation type
1	<i>unable</i>	4514	adjective	simple	
2	<i>unknown</i>	3931	adjective	complex	
3	<i>unusual</i>	2880	adjective	simple	
4	<i>unlikely</i>	2523	adjective	complex	
5	<i>unemployment</i>	2069	noun	complex	
6	<i>uncertainty</i>	1979	noun	complex	
7	<i>unexpected</i>	1952	adjective	complex	
8	<i>unnecessary</i>	1725	adjective	simple	
9	<i>uncover</i>	1472	verb	simple	
10	<i>uncomfortable</i>	1421	adjective	complex	contrary
11	<i>unprecedented</i>	1324	adjective	complex	
12	<i>unfold</i>	1231	verb	simple	
13	<i>unfortunate</i>	1181	adjective	complex	
14	<i>unlimited</i>	1159	adjective	complex	
15	<i>uncertain</i>	1156	adjective	simple	
16	<i>unfair</i>	1155	adjective	simple	
17	<i>unlock</i>	1127	verb	simple	reversative
18	<i>unconscious</i>	1051	adjective	simple	
19	<i>unclear</i>	982	adjective	simple	
20	<i>unveil</i>	965	verb	simple	
...					
483	<i>unverified</i>	32	adjective	complex	
484	<i>unbecoming</i>	31	adjective	complex	
485	<i>unbutton</i>	31	verb	simple	
486	<i>unconditioned</i>	31	adjective	complex	
487	<i>undeterred</i>	31	adjective	complex	
488	<i>unfazed</i>	31	adjective	complex	
489	<i>unstated</i>	31	adjective	complex	contradictory
490	<i>unsubscribing</i>	31	noun	complex	
491	<i>untitled</i>	31	adjective	complex	
492	<i>unapproachable</i>	30	adjective	complex	
493	<i>uncontaminated</i>	30	adjective	complex	
494	<i>unheeded</i>	30	adjective	complex	contrary
495	<i>uninvolved</i>	30	adjective	complex	
496	<i>unlisted</i>	30	adjective	complex	
497	<i>unreality</i>	30	noun	complex	
498	<i>unreliability</i>	30	noun	complex	
499	<i>untainted</i>	30	adjective	complex	
500	<i>unalterable</i>	29	adjective	complex	

Table 15Semantics of *un-* derivatives in a random sample of 50 lemmas

CONTRADICTORY	<i>unemployed, unused, uninsured, unreliable, unresolved, unsuitable, unheard, unimaginable, unaffected, unqualified, unmanned, uncontrollable, unlicensed, unplaced, unbounded, unfettered, untested, uncharted, unclaimed, undifferentiated, unsaturated, unrighteous, unreleased, unrepentant, undeclared, unscheduled, unmanaged, unbiblical, undaunted, unstated</i>
CONTRARY	<i>uncomfortable, unwilling, ungodly, untrained, unskilled, unwell, unreadable, undeserved, unselfish, unwed, unsophisticated, unconfirmed, unreachable, unopposed, untidy, unheeded</i>
REVERSATIVE	<i>unlock, unscrew, unclog</i>

The prefix *un-* is the only negative prefix native to English (Bauer et al. 357; Zimmer 35), but that is only the tip of the iceberg when it comes to its etymology. Authors (Horn 12; Zimmer 35) describe two separate affixes, which share the same spelling in today's language. The first *un*⁻¹, which attaches predominantly to adjectives, but also nouns, has remained the same throughout the different stages of the evolution of English and usually denotes a basic negative meaning. The other prefix, *un*⁻², was originally spelt *and-* or *ond-* during the early development of the English language and today attaches to either verbs or nouns to create reversative verbs. This difference is actually noticeable in the sample above, as all three verbs in it are indeed reversative. As both Zimmer and Horn point out, it may sometimes be difficult to distinguish which of the two *un*-s was used in the creation of a word, although these cases are quite rare. Both researchers (Zimmer 35; Horn 13) note the example *unbound*, which can be read as either 'not bound' or 'loosened'. There are researchers who do not recognise this distinction between the two *un*-s in present-day English, but these seem to be in the minority, and, as Horn (13) points out: "..., without a semantics of oppositeness or antonymy that generalizes across verbs, adjectives, and nouns, their one-*un* position represents more a promise than an analysis".

Although we normally would not associate the prefix *un-* with any allomorphs, there appears to be at least a degree of phonetic variety via “optional place assimilation” (Bauer et al. 180; Plag 101). So far, we have only seen obligatory assimilation with *iN-*, the difference between obligatory and optional assimilation seemingly being either the regularity with which it occurs, or, possibly, its reflection in the orthography of affected words, even though the latter claim is disputed (Bauer et al. 180). In the case of *un-*, assimilation of the final /n/ may occur, when the attached base contains an initial bilabial, in which case the prefix is pronounced /ʌm/, or velar, resulting in the pronunciation /ʌŋ/ (Plag 101). Bauer et al. (180) add that assimilation before initial labiodentals, such as in *unfavourable*, or other consonants may be possible as well.

Morphologically, the prefix has clear preferences for certain suffixes, as is observable in the sampled words in table 15. In particular, the past participle is especially popular, as it is present in a little over half of all words in the table and in over 40% of the extended sample. Zimmer’s (35) own analysis found that about 50% of all *un-* adjectives in his corpus included those derived from past participles. Furthermore, the present participle can also be negated with *un-*, although the number of examples is much smaller, a single example in the narrow sample (*unwilling*), a little under 10% of the extended sample, and 7% of Zimmer’s (36). He further notes that creating derivatives from the present participle is much stricter than from the past participle, and that prefixing these forms with *non-* is a bit more common, however, even that derivation has its limitations (44). Another relatively potent suffix is *-able*, present in seven examples in the small sample, approximately 12% of the extended sample, and 13% of Zimmer’s (36), along with *-ible*, which I personally found to be rather rare, spotting a single example in the whole extended sample. Zimmer also noticed that 2% of words in his corpus contained the suffix *-ful* (36), which would normally be negated by substituting it with the suffix *-less* (Huddleston and Pullum 1688). Bauer et al. (362) further add that suffixes *-ous*, *-ic*, *-al*, and *-ive* are also commonly found in *un-* derived adjectives.

It is now obvious that the adjectival *un-* and *iN-* are quite similar in a number of ways, whether it is their preferred suffixes or generally ‘not X’ meaning, so what sets them apart? The number one difference, which we have already discussed, is that *un-* is vastly more productive, making up a majority of new adjectives in English. Historically, *iN-* would attach to Romance adjectives, whilst *un-* would be restricted to those of Germanic origin, although this does not apply universally anymore (Huddleston and Pullum 1688). Furthermore, there appears to be a tendency for *un-* adjectives to develop a bit neutralised, but not entirely neutral, meaning, when compared to *iN-* adjectives of the same base, when their meaning becomes “desirable to avoid”, such as in the case of *unhuman* – *inhuman* (Zimmer 30), or in the pair *unmoral* – *immoral* from when we talked about the prefix *a(n)-*. However, this does not mean that all *iN-* derivatives have an *un-* alternative. We could draw some more similarities, this time with the prefix *non-*, which shares most semantic categories of negation with *un-*, however, as was pointed out earlier, *non-* keeps a more neutral position, whilst both *un-* and *iN-* usually possess a bit more pejorative connotations (Andreou, “Stereotype negation” 7; Horn 10; Plag 100), hence why *non-American behaviour* means ‘unlike characteristically American’ and *unamerican activities* are ‘hostile to America’ (Huddleston and Pullum 1689). As pointed out by Joshi (82), *non-* negates the explicit meaning of *American*, and *un-* negates its implicit meaning.

There are some forms *un-* cannot attach to. Most notably, short native adjectives consisting of a single morpheme, such as *good*, *tall*, *slim*, etc., are usually not prefix by *un-*, and their opposites are rather completely different, but also monomorphemic adjectives, such as *bad*, *short*, or *fat* (Bauer et al. 372; Zimmer 40, 43-4). This, of course, does not prevent speakers from forming adjectives like *unbad*, but their use is not regular and generally very sparse. Other forms that are considered ‘forbidden ground’ for *un-* are adjectives formed with the suffix *-less*, although, as mentioned above, negating adjectives with *-ful* is possible in some cases. Also unavailable are the so-called “superlatives”, or words denoting a high level of quality, such as

delicious or *sublime*, and lastly compound adjectives, such as *well-mannered*, *long-legged*, and others (Zimmer 44-5).

The prefix *un-* is capable of expressing many different categories of negation, even though it is not obvious, when we look at our sample. According to Bauer et al. (371), it has, along with *dis-*, “the widest range of possible meanings”, and we do not need to look too deep to see that this rings true. This was mentioned earlier, but it bears repeating that in adjectives, the prefix can be either contradictory or contrary (Andreou, “Stereotype negation” 6; Bauer et al. 371; Plag 101). When attached to verbs which imply “non-permanent result” (Bauer et al. 373), the usual result is a reversative (Andreou, “Stereotype negation” 6), however, a privative reading may also be possible (Plag 101). In relation to this, Bauer et al. cite Marchand’s examples of *unsex* and *unvoice*, and add some of their own (374), although, in my opinion, denominal verbs such as *unclog* or *unchain* are clear reversatives, as the state they reverse is the result of another previous action indicated by the nominal base. The latter example is actually cited by Hamawand as an example of removal (*Semantics* 71), which I am willing to accept as more probable than the privative meaning; however, I still stand by my initial classification.

So far, I have neglected to mention the remaining word class that *un-* may attach to – nouns. According to Horn (26), early *un-* nouns were mostly back-formations from their respective adjectives, so *untruth* came from *untrue*, *unhappiness* from *unhappy*, and so on. He, and for that matter other authors as well (Andreou, “Stereotype negation” 6; Plag 101), speaks of nouns which express either privation or stereotype negation. Examples of the former are easily found in our extended sample, all meaning ‘a lack of X’, for example, *unemployment*, *uncertainty*, *unwillingness*, etc. An example of stereotype negation is comparably harder to come by. Andreou uses *unpolitician*, a person, who is a politician, but without proper leadership skills (“Stereotype negation” 6-7) as an example, but I found it difficult to find many more. In

the extended sample, the word *unreality* is probably closest to a stereotype negative, and even that is dependent on context. Horn (30-6), as well as Bauer et al. (373), list and contextualise a somewhat large number of examples, but none of them appear to be commonly used. This, however, does not mean they are insignificant in the language; after all, the lack of lexicalisation did not stop most of the *non-* adjectives from existing. What their existence shows us is another pattern of usage. Similarly to the hyphenated *non-* adjectives, almost any noun could be potentially prefixed by *un-* to create a new one, expressing imperfect similarity with the base, meaning that just how Horn (30-1) speaks of *un-cola*, we could be speaking about *un-milks*, a new collective term describing the plant-based milk-like liquids, such as almond milk, oat milk, soy milk, etc.

There is one more aspect of *un-* prefixation that needs to be mentioned. According to Marchand (qtd. in Zimmer 29), the prefix *iN-* is being replaced by *un-* in adjectives; specifically, he points out that *incivilized*, *incompared*, *incomposed*, *inconcerned*, and *inconnected*, all words from the 16th and 17th centuries, have been replaced by their *un-* variants. He further lists *insubmergible*, *innutrient*, *irremisive*, and *inextensible* as examples of new coinages from the 19th century with “a learned scientific character”. I searched for all of these in the corpus and only *inextensible* records 2 results, whilst the others do not appear at all. Truth be told, the *un-* variants of most of these are also nowhere to be found in the corpus, including *unextensive*, which would suggest that they were not as established in the language to begin with. This would explain why the prefixes in *illegal*, *independence*, or *impossible* are not being threatened by this; these words are well established in the language with this prefix, therefore, there is no desire to replace that which is not broken. However, it is equally possible that they are not in the corpus simply because they do not commonly appear on the internet. An example I did find in the corpus that may be an example of the phenomenon and that has stumped me personally is the word *insupportable*. This is a perfectly valid example of *iN-* prefixation on a Latinate

base with the suffix *-able*, but I found it to sound a little off. Looking into OALD, only this form is listed. However, the corpus contains both forms; the *iN-* form is recorded 15 times, and the *un-* form 19 times. Is it possible, then, that we are witnessing a prefix substitution in real time? Well, it is not entirely impossible, but I would remain on the side of caution. After all, the corpus data is turning ten years old this year, and it is very much possible that it is another case of the meaning of the *iN-* variant becoming “desirable to avoid” (Zimmer 30). Therefore, the bottom line is that English is capable of substituting the prefix *iN-* with *un-*, possibly due to the latter being native to it and thus seeming more natural to the speakers of the language.

4.7 Summary

Each of the negative prefixes we discussed has its distinct characteristics, which may aid native speakers and learners alike to understand the meaning of the words they create more easily and without having to consult a dictionary. Here, I will try and summarise these characteristics.

A(n)- is of Greek origin and most commonly attaches to words of the same origin, or from Latin. It has multiple possible pronunciations and presents in two allomorphs, *an-* before vowels and *a-* before consonants. It creates new adjectives and occasionally nouns out of nouns, adjectives, or bound bases. It is capable of representing up to four kinds of negation: contradictory, contrary, privative, and scale-external, the last of which may apparently only be expressed by this prefix. Derivatives created with the prefix are usually related to natural sciences, in particular biology, medicine, and other related disciplines. It is in this type of register that the prefix still has potential to be productive.

De- is a Latinate prefix capable of attaching to nouns, verbs, and bound bases of both native and non-native origin. Furthermore, it has the ability to change the category of its base, most usually creating new verbs, and other word classes may be created through further

derivation. It shows preference for verbs suffixed with *-ate*, *-ify*, and *-ise*. Derivatives may express privation, removal, or, most commonly, reversal. Contemporary productivity is scarce, but achievable.

Dis- is a prefix of Latin origin and prefers non-native bases, although derivatives of native bases also rarely appear. It may attach to nouns, adjectives, and verbs alike and is generally non-category changing. It was most productive in the 16th and 17th centuries and new derivatives are rare. It may express a wide variety of meanings, including contradictory and contrary negation, removal, reversal, and privation.

The prefix *iN-* is morphologically the most versatile, as it possesses four allomorphs: *in-* is seen as the default allomorph and attaches to most bases, *im-* appears before bases with an initial bilabial consonant, and *il-* and *ir-* before initial /l/ and /r/ respectively. It most commonly attaches to non-native adjectives and verbs and does not change their category; derivation and creation of nouns is rarer, but also possible. Non-native adjectives containing the suffixes *-able* or *-ible* may be more likely to take this prefix. Contemporary production happens occasionally, but *un-* is usually preferred. Derived adjectives may be contradictory or contrary negatives, and nouns tend to be privatives.

Non- is the last of the Romance prefixes, capable of attaching to bases of either origin. The bases may be adjectives or nouns, in which case the prefix is non-category changing, or verbs, which are transformed into novel adjectives. Most of its derivatives show little lexicalisation and are written with a hyphen separating the prefix from the base. In comparison with *iN-* and *un-*, its derivatives are usually emotively neutral. It is capable of expressing contradictory, contrary, and stereotype negation or privation. It is one of the most productive negative prefixes today.

Un- is the only Germanic negative prefix in English and is the most productive of all negative prefixes. Today's *un-* is two historically unrelated prefixes merged together, the

adjectival negative *un*-¹ and the verbal reversative *un*-². It may attach to either of the three categories and is usually non-category changing. The adjectival variant shares some characteristics with *iN*-, most notably preference for *-able* and *-ible* suffixed adjectives, as well as generally negative meaning, and research suggests that original *iN*- forms are being replaced by *un*-. By far the most *un*- derivatives are created from past participles of verbs, derivation from the present participle is rare. Other commonly found suffixes in *un*- words are *-ive*, *-al*, *-ous*, and *-ic*. Along with *dis*-, it is capable of expressing the largest number of meanings; contradictory and contrary negation in adjectives, privation and reversal in verbs, and privation and stereotype negation in nouns.

The characteristics described above are displayed in tables 16 and 17, which are inspired from similar tables in Bauer et al. (355, 367).

Table 16

Morphological considerations of negative prefixes; N = nouns, A = adjectives, V = verbs

Morphological considerations	Prefix origin	Base origin		Input category	Output category	Category changing	Preferred suffixes	Productive
		Native	Non-native					
<i>a(n)-</i>	Greek		✓	A, bound	N, A			in specific register
<i>de-</i>	Latin	✓	✓	N, V, bound	V	N to V	<i>-ate, -ify, -ise</i>	sometimes
<i>dis-</i>	Latin		✓	N, A, V	N, A, V			
<i>iN-</i>	Latin		✓	A, V	A, V		<i>-able, -ible</i>	
<i>non-</i>	Latin	✓	✓	N, A, V	N, A	V to A	<i>-al, -ic(al), -ible, -ous</i>	✓
<i>un-</i>	English	✓	✓	N, A, V	N, A, V	sometimes N to V	past participle, <i>-able, -ible</i>	✓

Table 17

Semantics of negative prefixes

Semantics	Contradictory/Contrary	Stereotype	Scale-external	Privative	Reversative	Removal
<i>a(n)-</i>	✓		✓	✓		
<i>de-</i>				✓	✓	✓
<i>dis-</i>	✓			✓	✓	✓
<i>iN-</i>	✓			✓		
<i>non-</i>	✓	✓		✓		
<i>un-</i>	✓	✓		✓	✓	

5. Conclusion

If a new adjective or noun were to be introduced into the English language today and we wanted to create its negation by prefixation, the prefix of choice would be either *un-* or *non-*. These two prefixes rival each other in these two categories, with nouns having a slight preference for *non-*, creating mainly contradictory or contrary readings, but other types of negation we have discussed may be expressed by them as well. The main difference between the two is the more pejorative tone of *un-* words, whilst *non-* words remain comparatively neutral. Were this new hypothetical adjective created out of a past participle, it would most likely take *un-*, although *non-* prefixation in this structure is not entirely unheard of.

New verbs would probably take *un-*, although there is a slight competition between it and the prefix *de-*. The key difference between the verbs these two prefixes create is what it is they negate. Whilst the function of *de-* seems to be close to reduction, *un-* reverses the result of another action. *Un-* also cannot express removal, and that meaning is therefore reserved for *de-*. Note that although there are some verbs which we may classify as contradictorily or contrarily negative, these are not at all common and this type of negation is usually expressed using sentence negation and the negator *not*, therefore, it is unlikely any new verb would create this type of reading. One more possible meaning that may develop on verbs is privation, in which case, *de-* would be the more likely choice.

If the new word were to be used in scientific context and borrowed from Greek, its negation would take the prefix *a(n)-*. In that case, the word would probably express contradiction or contrariety, or possibly privation. There is a potential for a scale-external reading to manifest; however, it is highly unlikely, because it would require for the base to also be able to admit *non-* or *un-* to create a contrary reading.

This leaves us with *dis-* and *iN-* as the two marginally productive negative prefixes, which is actually not at all surprising. As these two affixes have a very limited capability of

attaching to Germanic bases, there are simply not many opportunities to be used in new words. With English becoming the new *lingua franca*, Latinate borrowings are becoming less and less common, and the Romance languages are more likely to borrow from English, rather than invent a word that would be borrowed into it. Therefore, although we cannot quite call *dis-* and *iN-* unproductive, the number of their derivatives is unlikely to significantly increase.

In fact, the number of *iN-* derivatives may actually decrease over time, as *un-* is reported to have created derivatives with the same bases with more or less the same meaning, only less emotively loaded. Of course, this danger does not concern all *iN-* derivatives. We are not going to see forms like *unlegal* or *undependent* any time soon, but those words which are not that established or highly used may eventually disappear and be replaced by their *un-* alternatives. How quickly that will happen, or indeed if it will happen, is a question for the future.

All of this brings us back to our initial question: How come some words take one affix, but not the others, and why can some words take multiple affixes? The answer boils down to the etymology of bases, sometimes their structure, and most importantly the meaning we intend to express. Latinate nouns and adjectives are most likely to be prefixed by *iN-*, whilst verbs are more likely to be prefixed by *dis-*. Words originating in English will almost always take *un-* or *non-*. Specific in meaning tend to be *de-*, used to express removal, and *a(n)-*, capable of expressing scale-external negation, as well as being used in specific register. However, it is *un-* that is the number one negative prefix in English. The reason for its prevalence is its variability, which is capable of attaching to bases of either origin, occasionally even replacing *iN-* in non-native derivatives, expressing many categories of negation, and probably the fact that it is native to English also plays a key part in its dominance in affixal negation.

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