# Nominal competition in present-day English affixation: zero-affixation vs. *-ness* with the semantic category STATIVE

Cristina Lara-Clares, University of Granada
Paul Thompson, University of Birmingham

*Word-formation processes may compete for the same domain of application in a given paradigm. This paper considers affixal competition (including zero) within the same derivational paradigm, specifically* -ness *vs. zero-affixation for the expression of the semantic category* STATIVE*, as in* alert *vs.* alertness*. The results are compared with those obtained previously in Lara-Clares (2017) for the competition between* -ation *and zero-affixation for the expression of the semantic category* ACTION*.*

*The data are a sample extracted from the complete frequency list of the British National Corpus (BNC) further enlarged with data from the Oxford English Dictionary (OED). For descriptive accuracy, the analysis of the sample separates lemmas into senses according to the lexicographic information available in the OED. This is in turn categorised for each affix in terms of the semantic classification of Bagasheva (2017). Potential cases of competition are screened based on a number of morphological constraints and thus researched: i) by entry, ii) by sense, and iii) by specific pairs or groups, both within entry and within sense.*

*Competing forms of each word class are then ranked by their prevalence, measured in two ways: i) in terms of their C-value (Fernández-Domínguez 2017), and ii) in terms of the distribution and dispersion of each form across the sample categories used by the BNC.*

**Keywords:** *competition*, *nominalisation*, -ness, *zero-affixation*, STATIVE

## 1. Introduction

The borrowing of forms and, thus, affixes, that took place from the 17th century plays a central role in the development of the English language and a consequence of this is the emergence of both native and non-native competing (rival) affixes (Riddle 1985: 452–455; Lieber 2004: 44; Bauer 2009: 189; Kaunisto 2009; Díaz-Negrillo 2017: 119). When affixes acquire new senses, competition also emerges, such that more than one affix may share the same meaning[1] and potentially also the same domain of application; "expansion into new "territory" creates new potential for formation and thus enhances productivity, which leads to further expansion, which leads to further synonymy and potential competitors." (Pounder 2000: 669; see also Lieber 2004: 115). The underlying assumption here is that language tends to an avoidance of synonymy, as has been argued in the previous literature (see §2).

Morphological competition became a topic of research in itself after the publication of Aronoff's (1976) monograph, where he discussed the competition between *-ity* and *-ness*, thus laying the foundations for subsequent studies on the resolution of competition. This topic has received increasing attention ever since, as evidenced by the number of references dealing with it (Kjellmer 1984; Riddle 1985; Kastovsky 1986; Plag 1999; McWhinney et al. 2014, among others), as well as by the fact that the *17th International Morphology Meeting* in Vienna (2016) was dedicated to the discussion of competition in morphology. These studies have benefited

[1] "If we can ascribe meanings to affixes themselves, it appears that one affix can bear several meanings, while, conversely, one meaning can be shared by several affixes." (Lloyd 2011: 5).

greatly from research on morphological productivity (see, e.g., Plag 1999; Bauer 2001) and on semantics (see, e.g., Lieber 2004) and serve as a way to understand to what extent both linguistic economy and transparency of expression are at work in situations of morphological competition.

The analysis of competing forms in this paper relies on corpus and dictionary data. Corpora allow for the extraction of frequencies and also context of use, whereas dictionary data provide information regarding the different meanings of the forms under study and the dates of earliest and latest attestation. Specifically, BNC (Davies 2004–), data was used in an initial stage for sample extraction and in a later stage for attestation of forms in present competition (identified using the OED), for a manual sense classification of concordances and for frequencies' analysis. The OED was used both to enlarge the original BNC sample by looking for all potential competitors of the selected competing pattern and for lexicographic data (dates of attestation, senses, etc.).

An overview of the competition between nominalising suffixes is presented here, followed by a study on the competition between *-ness* and zero-affixation[2] for the expression of the semantic category STATIVE. The results are compared depending on whether frequencies are taken by entry, i.e., as given by the BNC, or by sense, i.e., after manual sense classification of concordances in order to put to test the relevance of sense separations. Finally, the results are compared with previous research for identification of patterns in the resolution of competition.

This paper addresses the following questions:

- RQ1: Is there any historical trend in the resolution of the competition between *-ness* and zero-affixation for the expression of the semantic category STATIVE? If so, is this trend confirmed with present-day data?
- RQ2: If a resolution of competition between the affixes is expected, will zero-affixation or *-ness* come out of use or will one or both affixes become semantically specialised?
- RQ3: Does each cluster of competition follow the general trend of resolution that is found for the pattern as a whole for these competing affixes?

This paper is structured as follows: the next section (§2) provides an overview of previous research on competition. The method followed for data extraction and analysis is then described (§3). §4 presents the results, first from a diachronic point of view (§4.1) and then in present-day English (§4.2). §5 draws conclusions from the analysis and compares results with a previous study.

[2] *Zero-affixation* is used here for terminological convenience.

## 2. Morphological competition in English affixation: an overview

Several definitions of competition in derivational morphology have been put forward in the last 40 years. They have key points in common, but there is still a certain level of variation among them. There is a general agreement that competing forms have to share the same base ("based on the same stem" in van Marle 1984: 178; "correlated to the same lexical base" in Fradin 2016) and be derived with different affixes (Plag 2000: 2; Fradin 2016). The third characteristic competitors have to possess is a relation of synonymy, although the degree of synonymy required is not the same for each author. Plag (2000: 2), Pounder (2000: 669) and Koehl (2015: 56), among others, claim that there is a need for competitors to have the *same* meaning, whereas other authors are more flexible in that respect: for Hoesktra & Versloot (2016), competitors should have "*roughly* the same semantic content" (emphasis added). Similarly, van Marle (1984: 178) claims that they should be "semantically similar" and Palacios (2013: 46) holds that they should "overlap in the expression the same or a very similar meaning [sic]." Also, competitors have to have the same distribution (Fradin 2016) or operate in the same domain and, thus, they occupy the same slot in a derivational paradigm (see Pounder 2000: 669; Bauer et al. 2013: 568).

This paper considers that, for competition to take place, forms have to:

i) share the same base,
ii) be derived with different affixes,
iii) take affixes that express the same semantic category(s),
iv) operate in the same domain, and
v) no constraints (e.g., phonological, morphological) may apply.

Competition can be between individual words or between word-formation patterns. The latter seems to be dependent on the former: in Bauer's words (2009: 181), "if sufficient doublets are formed and word-formation *x* wins out in the majority of cases, then word-formation *x* will become the dominant process." Competition is expected to be resolved within a period of time, but this resolution is justified in different ways by different authors: some claim that it should be expected due to the principle of linguistic economy, according to which "a linguistic system will avoid having two forms for the same purpose" (Bauer et al. 2010: 1). Other authors claim that avoidance of synonymy is a key driving force behind competition (Lindsay & Aronoff 2013), and some equate competition in natural languages with Gause's (1934) struggle for existence, where "[t]he fate of the less efficient species is local extinction." (Aronoff 2016: 39; see also MacWhinney et al. 2014: 367). Be it as it may, competition is expected to be resolved after an indefinite period of time.

The resolution of competition can result in various outcomes:

i) one competitor prevails over another, which eventually comes out of use,
ii) each competitor finds a niche or domain of application, be it phonological (e.g., complementary distribution), stylistic (e.g., formal or informal contexts of use), or of some other kind,
iii) both forms disappear (if no naming need or if another form fills that slot), or
iv) both forms coexist for a period of time (e.g., negative prefixes for 700 years, according to Bauer (2009: 193)).

However, Pounder (2000: 322) holds that competition needs *not* be resolved, because "equivalent formations" may coexist and "there does not […] appear to be any competition at the lexical level that would imply a low tolerance for synonymy." We would then expect forms to exist peacefully alongside each other as long as there is not a more frequent or productive operation (Pounder 2000: 322, 669–672).

The relation between competition and productivity is undeniable[3] and the analysis of the productivity of word-formation patterns is essential in any study of competition. However, there is, to the best of our knowledge, only one measure of productivity that is specifically designed for this field or research (see Fernández-Domínguez 2017 for a review of competition and productivity and for details of the measure). The productivity of word-formation patterns is dependent on the number of constraints applying and, thus, the way competition resolves will also be dependent on them.

Constraints can be of different kinds: etymological, morphological, phonological, pragmatic and semantic (for an overview of previous literature on constraints on competition, see Díaz-Negrillo 2017 and Lara-Clares 2017). Etymological constraints are typically related to the origin of the base (e.g., Germanic vs. Latinate, as in *-ity* and *-ness*, see Bauer et al. 2013: 248; Arndt-Lappe 2014: 498, 501), while morphological constraints relate to the affixation already contained in the base of the derivative (e.g., *-ic* vs. *-ical*, where *-ical* is preferred over *-ic* in bases ending in *-olog*, see Lindsay 2012: 193). Phonological constraints are of especial relevance when they lead to the complementary distribution of affixes, as is the case of *-ify* and *-ize* (Plag 1999: 197, 228; see also Plag 2000: 10). Pragmatic or stylistic differences may lead to a specialisation of affixes and, thus, the resolution of competition. Looking at register distribution may prove to be useful in this respect, as in Guz (2009), where *-ness* is shown to prevail in more informal contexts than *-ity*. Finally, semantics can constrain the creation of derivatives, as with deadjectival adverbs, where it is reported that there is a tendency for dynamic adjectives to be more liable to form *-ly* adverbs than stative ones (Kjellmer 1984). The role other factors, such as blocking[4] or analogy[5], play in the resolution of competition is still under debate.

This paper aims at an overview on the competition between nominalising affixes to see how competition may be resolved (or not) in a case study. This considers the constraints that may apply as well as the productivity of the affixes.

## 3. Method

The sample used for the present study was extracted in two stages: a first sample (henceforth, Sample1) was extracted from the BNC, which was chosen over the *Corpus of Contemporary American English* (COCA; Davies 2008–) for its comparatively more fine-grained sample classification (for a thorough comparison of both corpora and for an analysis of morphological competition, see Fernández-Domínguez 2017). In a second stage, the OED was used to enlarge the sample using lexicographic data (henceforth, Sample2).

[3] "[I]t comes as no surprise that competition and productivity cross their paths, as productivity by nature compares two or more derivational rules." (Fernández-Domínguez 2017: 79).

[4] See Aronoff (1976) and Rainer (1988), but type-blocking is dismissed as a morphological mechanism by others (cf. Plag 2000; Giegerich 2001 and Bauer et al. 2013)

[5] See Arndt-Lappe (2014), although other authors tone down the relevance of analogy in word-formation (cf. Bauer 2001: 83).

3.1 *Extraction and analysis of Sample1*

The extraction of Sample1 was based on the complete BNC frequency list, which amounts to approximately 615,000 types. The list was sampled using *Scáthach* (Lara-Clares & Lara-Clares 2016), which allows automatic extraction of non-hyphenated affixed forms of a given word class. The base form of the units extracted was then analysed with OED data (see further below, Table 2). The affixes introduced in the software were taken from two sources: Quirk et al. (1985: 1540–1552, 1557) and Stockwell & Minkova (2001: 194–204). The decision to select only affixed forms stems from the fact that the same base appears more than once in the frequency list (e.g., the base *artificial* would be extracted from *artificialness*, *artificiality* and *artificialism*). Besides, the selection of affixed forms would potentially lead to the extraction of more cases of competition between affixes or between affixes and zero-affixation[6]. The exclusion of forms containing a hyphen served as a way to filter out hyphenated compounds (e.g., *self-awareness*), because compounding as a word-formation process is outside the scope of this paper. Other types of compounds (e.g., *minesweeper*) as well as any unwanted element, such as typos, foreign forms or entries containing symbols or numbers (e.g., *d[sep]amor*, *aimee*), were discarded in a later stage, in which every unit in the sample was analysed manually.

Sample1 was extracted and analysed in three stages for manageability reasons. The size of the sample for each stage was calculated using a tool for the calculation of the sample size of a population (Raosoft Inc. 2014). Both nominal and verbal forms were extracted in each stage, amounting to 1,147 nouns and 1,117 verbs (Table 1). The word class selected for further analysis was 'noun', due to the variety of patterns of competition found in this word class. The initial *nominal* sample was later enlarged as described in §3.2.

Table 1: Size of first sample per stage and total number of forms extracted for each word class

| Word class | Stage 1 | Stage 2 | Stage 3 | Total |
|---|---|---|---|---|
| Noun | 384 | 382 | 381 | 1,147 |
| Verb | 377 | 370 | 370 | 1,117 |

Forms extracted from Sample1 (and, later, also Sample2) were analysed with data from the OED and classified using a template (Table 2). Competing forms appear in the first column, followed by the competing sense in the OED and the word-class of their base. The meaning of the competitors is given in the fourth column: first the semantic category, following Bagasheva's (2017) classification, and the definition in the OED. The fifth column provides the senses extracted from the OED, classified into in use, obsolete/dated, dialectal and register/domain and followed by the absolute frequencies of the BNC. Finally, there is the timeline of each form: first, the date of earliest attestation and then, when applicable, the date of latest attestation (†).

[6] Forms were considered to be zero-affixed when there is another attested word which is formally identical but of a different word class. Zero-affixed forms did not appear in the frequency list sample but they were later identified using the OED.

Table 2: Example of a competing cluster in the template with the base *representative*

| Competing forms | Sense | Base w-class | Meaning | | Senses (OED) | | | | Freq. | Timeline | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sem. category | Def. (OED) | In use | Obs./ Dat. | Dial. | Reg./ Dom. | BNC | Earliest | † |
| *representativeness* | 1 | Adj | STATIVE | quality, state, or condition of being representative | 1 | | | | 49 | 1664 | |
| *representativeship* | 1 | Adj | STATIVE | state or condition of being representative | | 1 | | | 0 | 1692 | 2009 |
| *representativity* | 1 | Adj | STATIVE | representativeness | 1 | | | | 1 | 1901 | |

Competitors were identified using the list of entries on the right-hand side of the OED web. For example, in the BNC sample the derivative *representativeness* was extracted. It was then searched in the OED, where potential competitors could be identified using the entries list (Figure 1). In this example, *representativeship* and *representativity* as nouns have a sense that is apparently synonymous to that of *representativeness* and, thus, they are a priori identified as competitors.


Figure 1: Caption of the OED web entries list

For forms to be considered competitors and, thus, part of a cluster, they had to comply with the characteristics described above (§2). If we take as an example the cluster from Table 2, competitors had to:

i) share the same base (*representative*$^{Adj}$),
ii) be derived with different affixes (*-ness*, *-ship* and *-ity*),
iii) take affixes that express the same semantic category(s) (STATIVE),
iv) operate in the same domain (they are not classified as dialectal or pertaining to any particular register or domain in the OED),
v) and no constraints (e.g., phonological, morphological) may apply (a priori, inasmuch as the forms are attested, it is expected that no constraints apply, but that is verified in a later stage).

The semantic category of the affixes was determined based on the definition of the OED and later tested in a manual classification of BNC concordances (see further below). In the example, both *representativeness* and *representativeship* included the term *state* in the definition, and the definition for *representativity* leads to *representativeness*, which has also been classified as STATIVE.

This paper focuses on present-day competition, so only forms attested in the BNC were selected for further analysis. In the example in Table 2, *representativeness* and *representativity* were thus selected, and *representativeship* was discarded. Note that, in this example, lexicographic and corpus data agree in that *representativeship* is no longer in use. However, that is not always the case: in *warm*$^{N}$, the sense corresponding to the semantic category STATIVE is classified as rare in OED2[7] (sense 1) but a manual semantic classification of concordances of the BNC showed that that sense was attested in two out of three concordances.

### 3.2 *Extraction and analysis of Sample2*

The second sample was extracted after analysing and classifying the initial sample. A specific group of affixes competing for a particular sense was chosen from all the potential patterns[8] for analysis. For this paper, the semantic category chosen was STATIVE, and the affixes that were found in competition for the expression of this semantic category were *-ety*, *-ity*, *-ness*, and zero-affixation. More clusters of these patterns of competition were searched for using the OED's advanced search facility. This allowed for selection of entries from the dictionary according to their language of origin (English), to the affix (**ness*, **ety* and **ity*, in three separate searches) and to the keywords used in their definition (here, *state* or *condition*). Five entries ending in *-ety*, 545 ending in *-ity*, and 1,626 entries ending in *-ness* were analysed in search for additional competing clusters of the said pattern, with the aim of getting as complete an image as possible of this pattern of competition. Besides, using the OED as a source for the extraction of data allows the identification of competing clusters over time, independently of whether forms are attested in contemporary corpora, or not. This resulted in a total of 437 competing clusters (see Table 3).

Table 3: Size of the second sample and number of competing clusters by affix

| | *-ety* | *-ity* | *-ness* | Total |
|---|---|---|---|---|
| Occurrences | 5 | 545 | 1,626 | 2,176 |
| Competing clusters | 1 | 140 | 296 | 437 |

After classification of both samples using the template shown in Table 2, the competing clusters for analysis were selected, namely, in this paper, the competition between zero-affixation and *-ness* for the expression of the semantic category STATIVE.

Both affixes are productive in present-day according to the specialised literature: zero-affixation is an "extremely productive process" (Plag 1999: 219) and *-ness* is reported to be the default resource for derivation of abstract nouns from non-verbal categories (Bauer et al. 2013: 246). Regarding the constraints applying to each process, the suffix *-ness* "is not sensitive to the phonological or prosodic structure of its bases, nor does it affect either the

[7] The version of the OED is specified where necessary because some entries have not been updated in more than a century and, thus, their classification as, e.g., in use or obsolete, is to be taken with caution.
[8] See Fernández-Alcaina (2017: 168) for a definition of *cluster* and *pattern*.

segmental phonology or stress patterns of the bases it attaches to." (Bauer et al. 2013: 248). In contrast, restrictions on noun to verb conversion have been found, e.g., monosuffix constraint (Don 2005), but this does not play a role here, because all the bases attested as in present competition are simple. Phonological restrictions on adjective to noun conversion, finally, do not seem "promising […] on cases of conversion involving adjectives." (Lohmann 2016: 229).

Nine clusters of this pattern of competition pattern were found in present competition in our data, amounting to a total of 7,898 concordances. All the concordances of the competing forms were semantically classified because, even though the forms under study are polysemous, the focus is only on one of their senses (STATIVE). The semantic analysis was done manually; in this case, each concordance was classified into two main categories:

i) STATIVE, and
ii) non-STATIVE, where the keyword of the concordance:
    a. is of a non-competing semantic category,
    b. is of a different word class (adjective, verb, adverb), or
    c. is ambiguous regarding meaning.

The semantic classification proved to be particularly complex either because some concordances can be interpreted in several ways or because slight differences in meaning could be identified within the semantic category under study (see Riddle 1985; Aronoff & Cho 2001; Baeskow 2012 and Díaz-Negrillo 2017 for the difficulty of applying general semantic definitions in order to capture differences in meaning between affixes).

The category STATIVE is described by Bagasheva (2017: 56) as a "particular condition of being, be in a state" (e.g., *sadness*). This category comprises both temporal states, i.e., states that remain for a period of time, and permanent states, which have been classified as quality nouns (*nomina qualitatis*) elsewhere (Rainer 2015; see also Luschützky 2015). The difficulty of applying this distinction in a classification of concordances, however, lies in the fact that many suffixes can be found in both categories, as in the case of the suffix *-ness* (e.g., *cleverness* as a permanent quality, and *drunkenness* as a temporal state) (Rainer 2015: 1269–1271). What is more, in the sample, competing derivatives showed both readings, so a decision was taken to classify as STATIVE in this paper only the concordances which reflect a temporal or non-permanent sense (1), as opposed to a permanent one (2):

(1) *The only dealers who remain in their jobs are those who can sustain* ***alertness*** *during their long working hours* (EUU)
(2) *Occupation is unquestionably one of the most important factors in preserving mental* ***alertness*** *and bodily health* (CKP)

The classification allowed also for an 'ambiguous' tag for those concordances in which no clear meaning could be captured from context (3).

(3) *Very often, as we've mentioned already in this programme, there's contrast between* ***alertness****, brightness, whatever you call it, with words in speech and the disability in writing it down* (KRH)

Besides, some concordances were classified as non-STATIVE because they were part of a set phrase (4) or because they were (part of) a proper name (5), e.g.,

(4) *Or do you think he's got the **hots** for this fabulous brown-eyed career woman he's acquainted with in London?* (GV8)

(5) *Eliot's reading of Heart of **Darkness** whose Buddha-like clerk, Marlow, saw London as 'one of the dark places of the earth' further blended savage and 'sepulchral city'* (A6B)

The sample thus obtained was further analysed in later stages: the C value of the forms in each cluster was calculated in order to quantify the probability that a form would prevail over another (§4.2.1); the register distribution of forms was explored to look for hints as to a possible specialisation in their usage (§4.2.2) and, finally, the dispersion of the register distribution was computed to test whether competitors are or are not attested evenly across the registers, modes and domains of the BNC (§4.2.3). In sum, BNC data was used in the initial stage for sample extraction and in a later stage for attestation of forms in present competition (identified using the OED) and for frequencies' analysis. The OED was used both to enlarge the original BNC sample by looking for all potential competitors of the selected competing pattern and for lexicographic data (dates of attestation, senses, etc.).

## 4. Competition of nominalising suffixes

This section first presents an overview of the patterns of competition found in the samples and, more specifically, of the competition between zero-affixation and *-ness* suffixation for the semantic category STATIVE from a diachronic point of view (§4.1) and then looks at the present competition of the selected forms (§4.2).

### 4.1 *Overview*

After analysis of the samples, 10 senses were found to be in competition for nominal word formation according to the abovementioned conditions (§2 and §3.1). From these senses, STATIVE was chosen for further analysis in this study, and approximately 20 affixes were attested as competing for that sense in the OED. The suffix *-ness*, in competition with nearly 20 affixes, was selected for further analysis. Diachronically, the competition between *-ness* and *-ity* is the most widely attested one in this data (171 clusters), followed by *-ness* and zero-affixation (27 clusters), the latter being the pattern selected for this study (see Table 4).

Table 4: Patterns of competition of *-ness* with the semantic category STATIVE, the number of competing clusters and the total absolute frequencies of the forms attested in the BNC for each pattern (diachronically)

| Patterns | | N clusters | Abs. freq. BNC |
|---|---|---|---|
| *-ness* vs. | *-acy* | 8 | 296 |
| | *-ance*/*-ence* | 3 | 101 |
| | *-*(*at*)*ion* | 22 | 4,086 |
| | *-dom* | 5 | 9,736 |
| | *-ety* | 3 | 378 |
| | *-hood*/*-head* | 25 | 2,964 |
| | *-ing* | 2 | 5,592 |
| | *-ism* | 7 | 27 |
| | *-itude* | 1 | 24 |
| | *-ity* | 171 | 58,389 |
| | *-ment* | 3 | 84 |
| | *-ry* | 4 | 153 |
| | *-ship* | 3 | 138 |
| | *-th* | 3 | 44 |
| | *-ty* | 3 | 8,461 |
| | *-ure* | 2 | 48 |
| | *-y* | 2 | 46 |
| | zero-affixation | 27 | 10,535 |

The dates of earliest and latest attestation in the OED of the competitors under study suggest different resolutions (Figure 2). Overall, it seems that the competition between zero-affixation and *-ness* tends to be resolved towards the decay of the former (e.g., *cool*, *glad*, *late*). However, that is not always the case: for some bases (e.g., *altogether*, *low*, *dry*), both affixes seem to remain in competition, because they are classified as in use in the OED; for others, forms do not actually co-exist with the sense STATIVE at any point in time: *laxative*$_{N}$ decays in 1527 (OED2) and *laxativeness* is attested earliest in 1610 (OED2), *watertight*$_{N}$ is only attested once in the OED in 1539 (OED3) and *watertightness*'s earliest attestation is in 1826 (OED3). In one case, zero-affixation wins out over *-ness*: *ripe*$_{N}$ decays in 1500 (OED3) while *ripeness* stays in use until present day (OED3) and, in another, zero-affixation wins shortly but then it also disappears (*warmness* decays in 1681 and *warm*$_{N}$ in 1839, both in OED2). As simple as this seems to be, the actual image is more intricate (Figure 3).

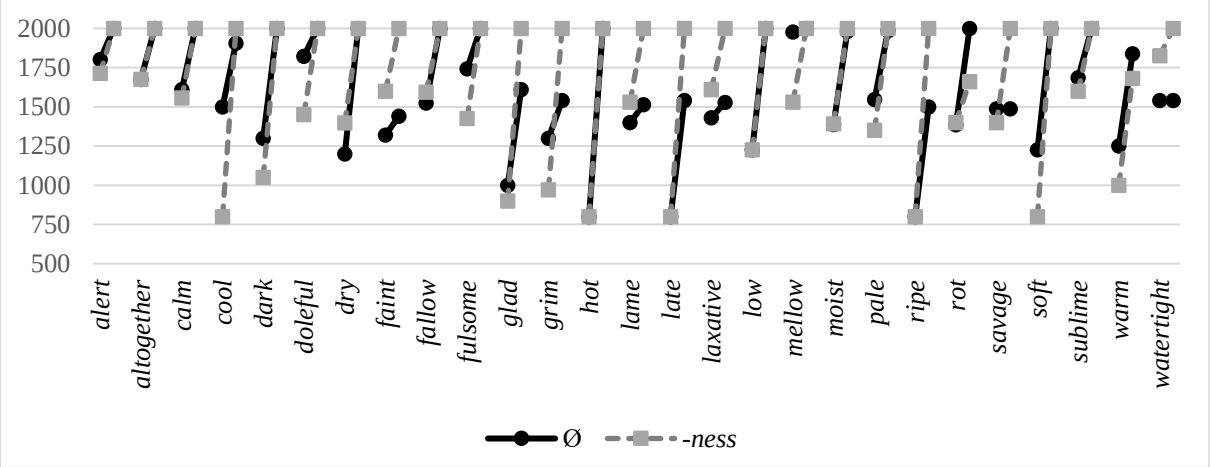


Figure 2: Timeline of the earliest and latest attestation of the competitors zero-affixation (continuous black line) and *-ness* (broken grey line) for the expression of STATIVE (OED)

Figure 3 shows that, quite often, there are more than two members in a cluster of competition. Five bases (out of 27) have at least three competing forms within the cluster. In *cool*$_{\text{Adj}}$, the forms derived with *-ness* and *-th* remain in competition because the competing sense is classified as in use in OED3, whereas *cool*$_{\text{N}}$ came out of use in 1905 (OED3). In *soft*$_{\text{Adj}}$, the *-head* derivative is the one first attested the latest (1350, OED3) but it is also the only form to come out of use (1500), whereas *soft*$_{\text{N}}$ and *softness* remain in use and, thus, in competition (both in OED3). The competition for the bases *glad*$_{\text{Adj}}$ and *moist*$_{\text{Adj}}$ seem to be resolved. In *glad*$_{\text{Adj}}$, the *-ship* and zero-affixed forms were attested latest in 1597 and 1609 (both in OED2), respectively, and *gladness* prevails because it remains in use (OED2). Regarding *moist*$_{\text{Adj}}$, the three forms are earliest attested within an 11-year period, but *moisture* is the first to disappear (1912, OED3), followed by *moist*$_{\text{N}}$ (1981, OED3); the *-ness* form prevails, as it is the only one within the cluster that remains in use in present day according to lexicographic data (OED3). Finally, four competitors were found for the base *savage*$_{\text{Adj}}$, where *-ism* and *-ness* remain in competition according to the OED3 data.

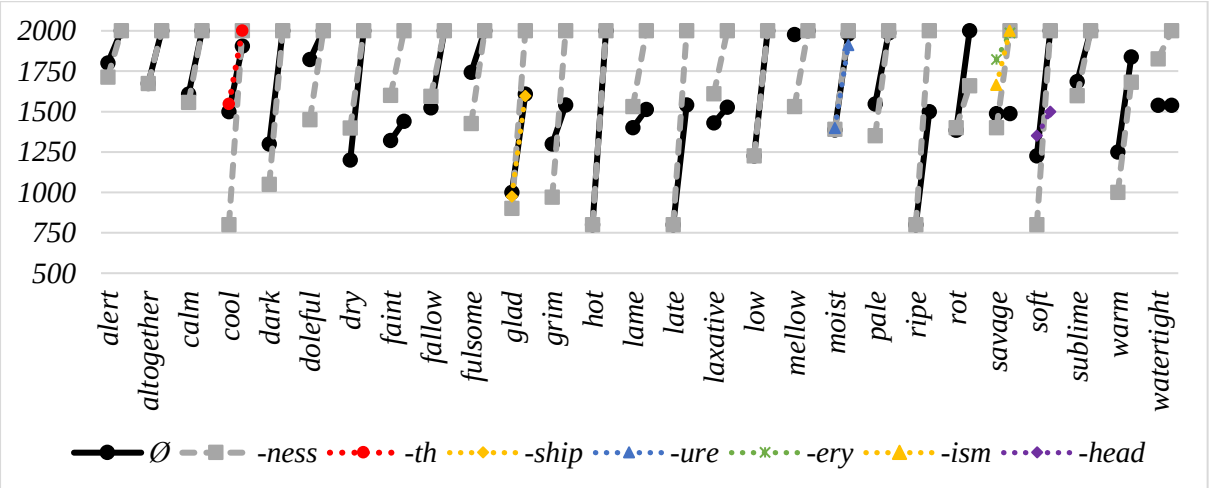


Figure 3: Timeline of the earliest and latest attestation of the competing nominal forms for the expression of STATIVE (OED)

Although lexicographic data of this kind should be taken with caution, it is still a relevant source (Bauer 2001: 156–157; Bauer 2009: 178, 181–182; Kaunisto 2009: 78; Bauer et al. 2010: 3; Arndt-Lappe 2014: 518). These data suggest, in answer to the first research question posed in §1 (RQ1, "is there any historical trend in the resolution of the competition between *-ness* and zero-affixation for the expression of the semantic category STATIVE?"), that there is a historical trend towards the resolution of this pattern of competition that favours the formation of *-ness* nouns over zero-affixed nouns for the expression of the said semantic category.

### 4.2 *Present-day competition*

Despite the historical trend pointed out in the previous section (§4.1), there still seems to be some cases of present competition of the affixes under study. For this reason, clusters in which at least two forms were attested in the BNC were selected for further analysis. The competition pattern *-ness* vs. zero-affixation for the expression of the semantic category STATIVE in present-day English was selected for further analysis.

Table 5: Manual classification of BNC concordances of competitors (STATIVE and non-STATIVE)

| | STATIVE | Non-STATIVE | | | |
|---|---|---|---|---|---|
| | | Diff. sem. cat. | Ambiguous | Adjective | Verb |
| *alertness* | 72 | 7 | 6 | 0 | 0 |
| *alert* | 34 | 116 | 9 | 0 | 33 |
| *coolness* | 82 | 30 | 21 | 0 | 0 |
| *cool* | 39 | 0 | 13 | 44 | 8 |
| *coolth* | 1 | 0 | 0 | 0 | 0 |
| *darkness* | 667 | 2,434 | 30 | 0 | 0 |
| *dark* | 268 | 1,689 | 44 | 1,905 | 1 |
| *dryness* | 100 | 16 | 7 | 0 | 0 |
| *dry* | 0 | 0 | 0 | 2 | 0 |
| *faintness* | 19 | 0 | 0 | 0 | 0 |
| *faint* | 7 | 3 | 1 | 20 | 1 |
| *hotness* | 11 | 1 | 4 | 0 | 0 |
| *hot* | 0 | 17 | 1 | 0 | 22 |
| *lowness* | 3 | 1 | 0 | 0 | 0 |
| *low* | 35 | 123 | 18 | 179 | 0 |
| *savageness* | 1 | 0 | 0 | 0 | 0 |
| *savage* | 0 | 242 | 0 | 64 | 0 |
| *savagery* | 82 | 56 | 9 | 3 | 0 |
| *warmness* | 2 | 0 | 1 | 0 | 0 |
| *warm* | 0 | 1 | 0 | 2 | 0 |

All the concordances of the competing forms within the selected cluster were manually classified, as described in §3.2. Table 5 shows the number of concordances of each competitor

that were classified as being STATIVE or non-STATIVE and, within non-STATIVE, as being of a different semantic category, ambiguous regarding meaning, an adjective or a verb. Overall, the majority of concordances were classified as being of a different semantic category (4,736), followed by adjectives (2,219), and concordances that had a STATIVE reading (1,423). There was semantic ambiguity in 164 concordances and 65 forms were actually verbs.

Competitors suffixed with *-ness* were mainly classified as being of a semantic category different from STATIVE (71%), whereas 27% of concordances did show a STATIVE reading. There was ambiguity in 2% of the concordances. Concordances of zero-affixed forms, in contrast, were classified as being of a different semantic category in a 44% of cases, and as STATIVE in only an 8%. The percentage of ambiguity was again a 2%. Strikingly, in a 45% of concordances the derivative was an adjective and in a 1% it was a verb. That is the reason why, even though zero-affixation was more frequent than *-ness* overall (4,180 zero, 3,562 *-ness*), after-sense-classification absolute frequencies of the semantic category STATIVE are higher for *-ness* suffixation (957 *-ness*, 383 zero).

4.2.1 *Index of Competition (C)*

Frequencies from the BNC (by entry) and after sense classification (by sense) were used for the calculation of the Index of Competition (C) (Fernández-Domínguez 2017), which quantifies the likelihood that a morpheme outlasts its competitors. The index is calculated using the following formula:

$$C = \frac{N/_{Nc}}{Vc},$$

where N is the token frequency of a competing form, Nc is the token frequency of all forms in the cluster and Vc is the number of forms in current competition.

The interpretation of the resulting value is checked against the *Reference C*, a figure which fluctuates from 0 to 1 depending on the number of competitors and which therefore varies across clusters. The measure C posits that the more units are in direct competition, the more challenging their individual survival will be. Under this assumption, the maximum possible result from C is 1, which happens when a cluster is made up of just one unit, i.e., other competitors have disappeared and the unit has succeeded in competition. Likewise, the more competitors there are in a cluster, the lower the Reference C because the mere presence of other units means the existence of rivals, and then each unit gets fewer chances of success. Thus, Reference C is 1 if there is one lexeme in the cluster (i.e. resolved competition); 0.5 if there are two competitors; 0.33 if there are three; 0.25 if there are four; etc. The advantage of this measure is hence that the competitive status of a form is not assessed through an isolated numerical value, but it is set in the context of the cluster in question through several variables. For instance, a C value of 0.24 may indicate complete dominance for a unit if the Reference C is 0.25 (i.e., there are four competitors in its cluster, so 0.25 is the maximum possible result), while 0.24 is a rather poor value for a Reference C of 0.5 (i.e., there are two competitors in its cluster, so 0.5 is the maximum possible result).

According to the resulting value of the computation of C using BNC frequencies, *-ness* is expected to prevail in just one cluster (*dry*), zero-affixation in seven (*alert*, *cool*, *dark*, *faint*, *hot*, *low*, *savage*) and both would remain in present competition in another (*warm*) (Table 6). Opposite patterns are found if frequencies after sense separation are taken: *-ness* suffixation is expected to prevail in 7 clusters (*alert*, *cool*, *dark*, *dry*, *faint*, *hot*, *warm*), zero-affixation in one

(*low*) and a third member of a cluster, *-ery* (*savage*), in another (Table 7). This difference evidences the need to manually classify the concordances of each form for research on competition.

Table 6: Computation of C value for *-ness* vs. zero-affixed derivatives by entry. A plus symbol (+) means that the form is expected to prevail over the others in the cluster

| | N | Nc | Vc | C | Exp. prevalence | Reference C |
|---|---|---|---|---|---|---|
| *alertness* | 86 | 279 | 2 | 0.1541 | | 0.5 |
| *alert* | 193 | 279 | 2 | 0.3459 | + | |
| *coolness* | 134 | 291 | 3 | 0.1535 | | 0.33 |
| *cool* | 156 | 291 | 3 | 0.1787 | + | |
| *coolth* | 1 | 291 | 3 | 0.0012 | | |
| *darkness* | 3,132 | 6,271 | 2 | 0.2497 | | 0.5 |
| *dark* | 3,139 | 6,271 | 2 | 0.2503 | + | |
| *dry* | 2 | 125 | 2 | 0.008 | | 0.5 |
| *dryness* | 123 | 125 | 2 | 0.492 | + | |
| *faint* | 32 | 51 | 2 | 0.3137 | + | 0.5 |
| *faintness* | 19 | 51 | 2 | 0.1863 | | |
| *hotness* | 16 | 56 | 2 | 0.1429 | | 0.5 |
| *hot* | 40 | 56 | 2 | 0.3571 | + | |
| *lowness* | 5 | 361 | 2 | 0.0069 | | 0.5 |
| *low* | 356 | 361 | 2 | 0.4931 | + | |
| *savageness* | 1 | 458 | 3 | 0.0007 | | 0.33 |
| *savage* | 307 | 458 | 3 | 0.2234 | + | |
| *savagery* | 150 | 458 | 3 | 0.1091 | | |
| *warmness* | 3 | 6 | 2 | 0.25 | + | 0.5 |
| *warm* | 3 | 6 | 2 | 0.25 | + | |

Results obtained using after-sense-separation frequencies provide an answer to the second question posed in RQ1: if there is a historical trend in the resolution of the competition of these affixes, is it confirmed with present-day data? (§1). The answer is positive, because the aforementioned frequencies are in line with the general trend found according to OED data (§4.1), and they also support the need to semantically classify concordances. This leads to the next research question: if a resolution of competition between the affixes is expected, will zero-affixation or *-ness* come out of use or will one or both affixes become semantically specialised? (RQ2, §1). This question will be answered considering the register distribution of these affixes in the next section.

Table 7: Computation of C value for *-ness* vs. zero-affixed derivatives by sense. A plus symbol (+) means that the form is expected to prevail over the others in the cluster

| | N | Nc | Vc | C | Exp. prevalence | Reference C |
|---|---|---|---|---|---|---|
| *alertness* | 72 | 106 | 2 | 0.3396 | + | 0.5 |
| *alert* | 34 | 106 | 2 | 0.1604 | | |
| *coolness* | 82 | 122 | 3 | 0.2240 | + | 0.33 |
| *cool* | 39 | 122 | 3 | 0.1066 | | |
| *coolth* | 1 | 122 | 3 | 0.0027 | | |
| *darkness* | 659 | 927 | 2 | 0.3554 | + | 0.5 |
| *dark* | 268 | 927 | 2 | 0.1446 | | |
| *dry* | 0 | 100 | 2 | 0 | | 0.5 |
| *dryness* | 100 | 100 | 2 | 0.5 | + | |
| *faint* | 7 | 26 | 2 | 0.1346 | | 0.5 |
| *faintness* | 19 | 26 | 2 | 0.3654 | + | |
| *hotness* | 11 | 11 | 2 | 0.5 | + | 0.5 |
| *hot* | 0 | 11 | 2 | 0 | | |
| *lowness* | 1 | 34 | 2 | 0.0147 | | 0.5 |
| *low* | 33 | 34 | 2 | 0.4853 | + | |
| *savageness* | 1 | 83 | 3 | 0.00402 | | 0.33 |
| *savage* | 0 | 83 | 3 | 0 | | |
| *savagery* | 82 | 83 | 3 | 0.3293 | + | |
| *warmness* | 2 | 2 | 2 | 0.5 | + | 0.5 |
| *warm* | 0 | 2 | 2 | 0 | | |

4.2.2 *Register distribution*

The register distribution[9] of the competing affixes was looked at using BNC frequencies both by entry and by sense in order to see whether there is any specialisation (register, mode or domain) of either the word as a whole or of concordances classified as STATIVE.

In order for the distribution of forms in the BNC and after sense separation to be comparable, the latter were also classified and normalised using the registers, modes and domains from the BNC. It is important to highlight here that frequencies reflecting the semantic category under study are very low for most of the competitors, but they are evidence of the attestation of the sense under study in each corpus part. Also, low frequencies could either point to an increasing or decreasing use of the form, which could be the cause or the result of competition.

Normalised frequencies from the BNC (Figure 4) show that the use of both affixes is balanced for Spoken (13% *-ness*, 10% zero), so they are expected to remain in competition in

[9] Normalised frequencies, both by entry (BNC) and by sense (after sense separation) are presented as percentages in Figures 4–5 for easier comparison, as frequencies are always lower after sense separation. Percentages are calculated with respect to the frequency of the form in the BNC, e.g., *darkness* has a frequency of 23 in Spoken and a total frequency of 659, so it is attested in a 3.49% of cases in Spoken. Tags show the normalised frequency of each item with respect to the size of each corpus section as well as the percentage.

that mode. Regarding the Written mode, zero-affixation is used more frequently overall in all registers but *fiction*, where *-ness* has a normalised frequency of 134.58 and zero-affixation of 122.07. Their frequencies are very similar in *non-academic* and *miscellaneous*.

It should be noted that, in Figure 4, *-ness* seems to be more frequent than zero-affixation in *non-academic* and *miscellaneous* because data is presented in percentages, i.e., with respect to the total frequency of the word. However, it is actually zero-affixation that is slightly more frequent in both registers (23.94 and 22.31 in *non-academic*; 30.58 and 27.07 in *miscellaneous*).

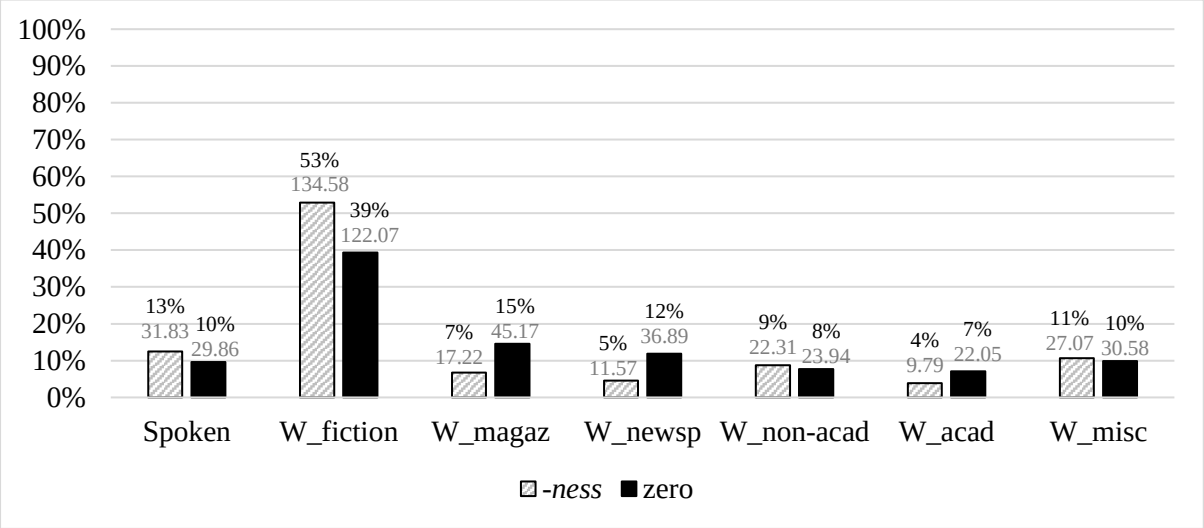


Figure 4: Register distribution of *-ness* (striped grey) and zero-affixed (black) forms with the semantic category STATIVE (normalised frequencies and percentages by entry)

However, if after-sense-separation normalised frequencies are taken (Figure 5), the difference of use between the two affixes becomes wider. Zero-affixation prevails in the Spoken mode (17%), whereas *-ness* suffixation prevails in the Written mode (96% in total) in all registers but *newspaper* (4.29 zero, 3.14 *-ness*). The gap becomes especially relevant for *academic*, where *-ness* suffixation sextuples the frequency of zero-affixation; or *non-academic* and *miscellaneous*, where it is quadrupled.

The data thus lead to the conclusion that there may be a difference between the affixes in question regarding the mode in which they are used. On the whole, *-ness* is expected to prevail over zero-affixation for the expression of the semantic category STATIVE, although there seems to be a process of mode specialisation underway, where zero-affixed forms would prevail in Spoken. If this were confirmed with a larger quantity of data, the competition between these affixes would be considered to be resolved, in that each of them would have a specific domain of application. Still, it might be the case that specific cases of competition do not follow the expected pattern, as claimed elsewhere for other patterns of competition (Lara-Clares 2017) (see §5). In order to test whether each cluster of competition follows the general trend of resolution found for the pattern as a whole for these competing affixes (RQ3, §1), the register distribution after sense separation of each pair of competitors was looked at, and it did show that not every cluster follows the expected trend.

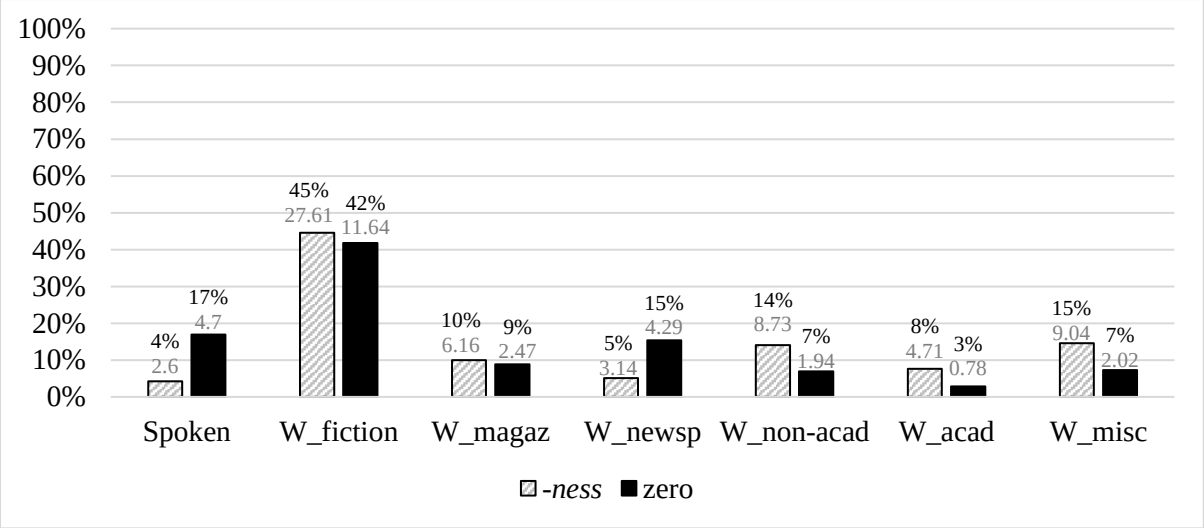


Figure 5: Register distribution of *-ness* (striped grey) and zero-affixed (black) affixed forms with the semantic category STATIVE (normalised frequencies and percentages by sense)

The cluster *darkness* vs. *dark* does follow the pattern described above: *dark* prevails in Spoken (16% zero, 3% *-ness*), and *darkness* does so in the Written mode overall, with the exception of the register *fiction*, where 333 concordances of *darkness* and 155 of *dark* were classified as STATIVE. Examples (6) and (7) are two concordances within the Spoken mode that belong to the same speaker, 'Danny', and which illustrate how similar the context of use of one and the other form with the semantic category STATIVE can be:

(6) *The light will hit the moon and half the moon will be in* ***darkness*** *and half the moon will be in light yes?* (KPA)
(7) *When you look at the moon half of it will be in light half of it will be in* ***dark*** *you will see a moon which looks like half a moon* (KPA)

In *alertness* vs. *alert* (Figure 6[10]), *coolness* vs. *cool* and *faintness* vs. *faint*, the same pattern as in *darkness* vs. *dark* is found, and the zero-affixed form prevails in *news* within the Written mode, as in Figure 5. Again, some instances were found where two forms were used in similar domains (*fiction* for the base *cool*, and *other* for the base *alert*) for the expression of the semantic category STATIVE, even though they were formed with different affixes: *-ness* in (8) and (10) and zero-affixation in (9) and (11):

(8) *Slowly she chafed her arms with her fingers, aware now of the* ***coolness*** *of the late evening (HA6)*
(9) *The sudden* ***cool*** *of evening made it advisable to keep the cooking fire alive (APU)*

[10] Absolute frequencies, both by entry (BNC) and by sense (after sense separation) are presented as percentages in Figures 6–8 for easier comparison. Tags show the absolute frequency of each item with respect to the size of each corpus section as well as the percentage. Note that there are two more registers here than in the BNC, as the manual classification of registers allowed for a more fine-grained classification of corpus sections (*W_essays* and *W_letters*).

(10) *Whilst orthopaedically designed seating and sophisticated ventilation help keep the driver **alert** and in control, even on the most fatiguing of journeys* (CFT)
(11) *But many find they help to maintain **alertness** and reduce headaches and eye strain from close work* (ED3)

However, other clusters of competition show a different distribution: in *lowness* vs. *low* (Figure 7), zero-affixation prevails in all registers (*lowness* is only attested once with the competing sense (12), in *fiction*, a register in which *low* is attested thrice (13)); in *faintness* vs. *faint* it is *-ness* suffixation that prevails overall (19 *-ness*, 7 zero), and so does in *dryness* vs. *dry*, *warmness* vs. *warm*, *savageness* vs. *savage*, and *hotness* vs. *hot*, where no zero-affixed form was classified as STATIVE. The register distribution of the latter, *hotness* vs. *hot* (Figure 8) is particularly striking in that all the concordances reflecting the semantic category under study are within only two registers of the Written mode: *fiction* and *other*.

(12) *His depressions were an illness, not merely a feeling of **lowness** or irritability* (FU2)
(13) *On an emotional and spiritual '**low**', she had accepted, and been grateful for, his advice, his support, his protection* (JY2)

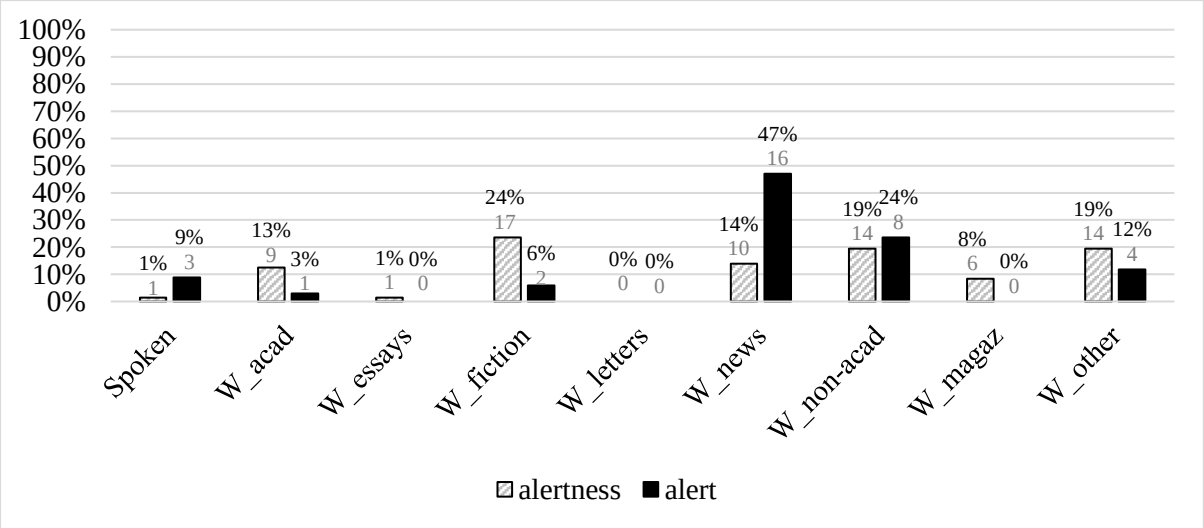


Figure 6: Register distribution of *alertness* and *alert* with the semantic category STATIVE (absolute frequencies and percentages by sense)

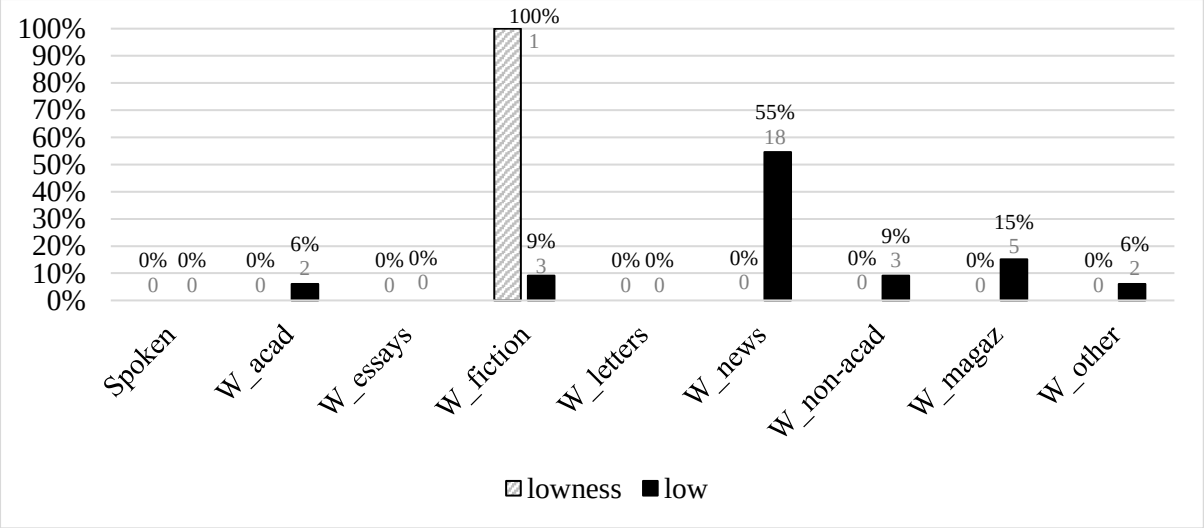


Figure 7: Register distribution of *lowness* and *low* with the semantic category STATIVE (absolute frequencies and percentages by sense)

An example of *hotness* with the semantic category STATIVE is (14):

(14) *He could feel the **hotness** of inflamed flesh and the steady throbbing of a dozen tooth-sized bruises* (ACW)

The concordances of *hot*, in contrast, where either used as a verb (*to hot up*) (15) or as part of the set phrase *have the hots for* (4), and no instance of *hot* as STATIVE was thus found.

(15) *And when the sparring **hots up**, the blow can sting* (CGE)

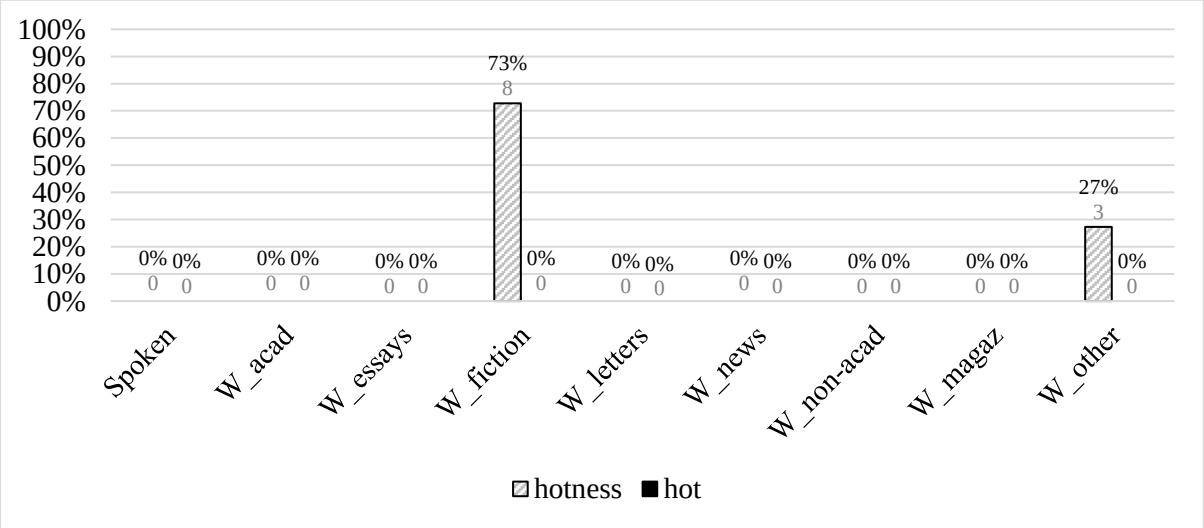


Figure 8: Register distribution of *hotness* and *hot* with the semantic category STATIVE (absolute frequencies and percentages by sense)

The data presented above suggest that, even though there seems to be a trend for the resolution of this pattern of competition, the analysis of particular clusters of competition yields disparate results.

4.2.3 *Dispersion*

The dispersion of the register distribution was calculated in order to see whether competitors are (or not) attested evenly across registers, modes and domains and, as a consequence, whether the forms may be specialised. The dispersion measure is calculated using the following formula (Gries 2008; Lijffijt & Gries 2012):

$$DPnorm = \frac{DP}{1-\min(s)},$$

where *DP* is the dispersion and *min(s)* is the size of the smallest corpus part. A value close to zero indicates that the sample is evenly distributed, and if it is close to 1 the sample is unevenly distributed[11], even though results can fall outside that range (see Lijffijt & Gries 2012: 148). The *DPnorm* was calculated for each affix (zero-affixation and *-ness*), using both frequencies by entry and by sense (Table 8). The dispersion of these affixes with respect to the whole corpus shows that zero-affixed forms are more evenly distributed than *-ness* forms. Considering the dispersion of the semantic category STATIVE with respect to the frequency of each affix in the BNC, both affixes are very evenly distributed.

Table 8: *DPnorm* for *-ness* vs. zero-affixed derivatives with respect to the whole corpus and of the semantic category STATIVE with respect to the frequency of the form in the corpus

| | *-ness* | zero-affixation |
|---|---|---|
| By entry (whole corpus) | 0.445519616 | 0.292273107 |
| By sense (word) | 0.146011956 | 0.133894084 |

An even distribution a priori discards a specialisation in the use of competing affixes, which would theoretically lead to a resolution of the competition. Further research is needed, then, to fully test whether the differences in frequency between each of the registers, modes and domains are statistically significant or not.

## 5. Conclusion

Based on a sample of over 1,000 units from the BNC and over 2,000 from the OED, 437 clusters of competition were found. Diachronically, 27 clusters were identified for the competition between zero-affixation and *-ness* for the expression of the semantic category STATIVE. Of these, only nine clusters have at least two members attested in the BNC and are thus (a priori) in present competition, amounting to a total of 7,898 occurrences in the corpus.

[11] "[V]alues close to 0 indicate that *a* is distributed across the *n* corpus parts as one would expect given the sizes of the n corpus parts. By contrast, values close to 1 indicate that *a* is distributed across the *n* corpus parts exactly the opposite way one would expect given the sizes of the n corpus parts." (Gries 2008: 415; Lijffijt & Gries 2012: 147).

Opposite results are found when clusters are analysed by entry and by sense: competition seems to resolve in different ways according to data of each specific cluster of competition. Looking at the Index of Competition (C) by entry, zero-affixation is expected to prevail over *-ness* (zero-affixation would prevail in seven clusters out of nine), but an opposite tendency is found by sense (*-ness* would prevail in seven clusters). The data obtained after sense separation supports the trend found in the OED, in that *-ness* would prevail over zero-affixation for the expression of the semantic category STATIVE (RQ1). The register distribution of these affixes shows that, by entry, both affixes are used equally within the Spoken mode, but zero-affixation prevails overall in the Written mode, with the exception of *fiction*. However, there does seem to be a difference in the domain of use when looking at data by sense: zero-affixation prevails in the Spoken mode, whereas *-ness* prevails in the Written mode (RQ2). It is important to note, however, that the computation of the *DPnorm* shows an even distribution of competitors, both by entry and by sense. However, even though a general trend was found regarding the resolution of the competition between these affixes, results may vary if every cluster is looked at individually, e.g., no attestation of the semantic category STATIVE was found in the BNC for *hot* (RQ3).

A comparison of these results with those obtained in Lara-Clares (2017) for the competition of zero-affixation vs. *-ation* for the expression of the semantic category ACTION shows that one affix (here, zero) may win out when competing with one affix for one sense but it may also be in a process of decay or register specialisation when competing with another affix for a different sense. In the previous study, zero-affixation seemed to prevail overall, even though results by sense were not so conclusive (zero-affixation would prevail over *-ation* in four cluster and *-ation* in three) (Lara-Clares 2017: 224–225, 228–229). The distribution of the competing affixes, both by entry and by sense, showed that zero-affixation prevailed overall, and no hints were found that would point to a specialisation of the affixes (Lara-Clares 2017: 225–226, 230). This contrasts with the results from this paper, where zero-affixation is expected to become specialised (mainly used in the Spoken mode), even though the computation of the *DP* contrasts with that view and should be tested further.

The results presented in this paper focus on two ways of nominalising an adjectival base, that is, by affixation by *-ness* or by zero-affixation. However, the derivational paradigm of each base is much more complex and analysing it for a study of competition could give new insights to the results. Also, competitors are likely to be found in any study of derivational paradigms, as acknowledged by Pounder (2000: 670): "for bases in the common (lexico-semantic) domain […], lexical paradigms may well contain sets of synonymous alternates of equal status (except for the productivity differential)", and should thus not be ignored.

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## References

Arndt-Lappe, Sabine. 2014. Analogy in suffix rivalry: The case of English *-ity* and *-ness*. *English Language and Linguistics* 18(3). 497–548.

Aronoff, Mark. 1976. *Word formation in Generative Grammar*. Cambridge, MA: MIT Press.

Aronoff, Mark. 2016. Competition and the lexicon. In Elia, Annibale & Iacobini, Claudio & Voghera, Miriam (eds.), *Livelli di Analisi e Fenomeni de Interfaccia: Atti del XLVII Congresso Internazionale di studi della Società di Linguistica Italiana (SLI)*, 39–51. Roma: Bulzoni Editore.

Aronoff, Mark & Cho, Sungeun. 2001. The semantics of *-ship* suffixation. *Linguistic Inquiry* 32(1). 167–173.

Baeskow, Heike. 2012. *-Ness* and *-ity*: Phonological exponents of *n* or meaningful nominalizers of different adjectival domains? *Journal of English Linguistics* 40(1). 6–40.

Bagasheva, Alexandra. 2017. Comparative semantic concepts in affixation. In Santana-Lario, Juan & Valera, Salvador (eds.), *Competing patterns in English affixation*, 33–66. Bern: Peter Lang.

Bauer, Laurie. 2001. *Morphological productivity*. Cambridge: Cambridge University Press.

Bauer, Laurie. 2009. Competition in English word formation. In van Kemenade, Ans & Los, Bettelou (eds.), *The handbook of the history of English*, 177–198. Malden, MA: Blackwell.

Bauer, Laurie & Díaz-Negrillo, Ana & Valera, Salvador. 2010. Affixation vs. conversion: The resolution of conflicting patterns. In Rainer, Franz & Dressler, Wolfgang U. & Kastovsky, Dieter & Luschützky, Hans Christian (eds.), *Variation and change in morphology: Selected papers from the 13th International Morphology Meeting*, Vienna, February 2008, 15–32. Amsterdam: John Benjamins.

Bauer, Laurie & Lieber, Rochelle & Plag, Ingo. 2013. *The Oxford guide to English morphology*. Oxford: Oxford University Press.

Davies, Mark. 2004–. *BYU-BNC* (Based on the *British National Corpus* by Oxford University Press). (http://corpus.byu.edu/bnc/) (Accessed 2018-07-25.)

Davies, Mark. 2008–. *The Corpus of Contemporary American English (COCA): 520 million words, 1990-present*. (http://corpus.byu.edu/coca/) (Accessed 2018-05-06.)

Díaz-Negrillo, Ana. 2017. On the identification of competition in English derivational morphemes. The case of *-dom*, *-hood* and *-ship*. In Santana-Lario, Juan & Valera, Salvador (eds.), *Competing patterns in English affixation*, 119–162. Bern: Peter Lang.

Don, Jan. 2005. On conversion, relisting and zero-derivation: A comment on Rochelle Lieber: *English word-formation processes*. *SKASE Journal of Theoretical Linguistics* 2(2). 2–16.

Fernández-Alcaina, Cristina. 2017. Availability and unavailability in English word-formation. In Santana-Lario, Juan & Valera, Salvador (eds.), *Competing patterns in English affixation*, 163–206. Bern: Peter Lang.

Fernández-Domínguez, Jesús. 2017. Methodological and procedural issues in the quantification of morphological competition. In Santana-Lario, Juan & Valera, Salvador (eds.), *Competing patterns in English affixation*, 67–117. Bern: Peter Lang.

Fradin, Bernard. 2016. What can we learn from doublets? (Paper presented at the *16th International Morphology Meeting*, Vienna, 18–21 February 2016.)

Gause, George F. 1934. *The Struggle for Existence*. Baltimore, MD: Williams & Wilkins.

Giegerich, Heinz J. 2001. Synonymy, blocking and the Elsewhere Condition: Lexical morphology and the speaker. *Transactions of the Philological Society* 99(1). 65–98.

Gries, Stefan Th. 2008. Dispersions and adjusted frequencies in corpora. *International Journal of Corpus Linguistics* 13(4). 403–437.

Guz, Wojciech. 2009. English affixal nominalizations across language registers. *Poznań Studies in Contemporary Linguistics* 45(4). 447–471.

Hoekstra, Eric & Versloot, Arjen. 2016. Frequency, similarity and the blocking principle. (Paper presented at the *16th International Morphology Meeting*, Vienna, 18–21 February 2016.)

Kaunisto, Mark. 2009. The rivalry between English adjectives ending in *-ive* and *-ory*. In McConchie, Roderick W. & Honkapohja, Alpo & Tyrkkö, Jukka (eds.), *Selected proceedings of the 2008 Symposium on New Approaches in English Historical Lexis (HEL-LEX 2)*, 74–87. Somerville, MA: Cascadilla Press.

Kastovsky, Dieter. 1986. The problem of productivity in word formation. *Linguistics* 24. 585–600.

Kjellmer, Göran. 1984. Why *great*/*greatly* but not *big*/**bigly*? On the formation of English adverbs in *-ly*. *Studia Linguistica* 38(1). 1–19.

Koehl, Aurore. 2015. Deadjectival nominalizations: Suffix rivalry and synonymy. In Audring, Jenny & Koutsoukos, Nikos & Masini, Francesca & Raffaelli, Ida (eds.), *Proceedings of the 9th Mediterranean Morphology Meeting – Morphology and Semantics*, 54–63. University of Leiden, University of Patras, University of Bologna, University of Zagreb.

Lara-Clares, Cristina. 2017. Competition in Present Day English nominalization by zero-affixation vs. *-ation*. In Santana-Lario, Juan & Valera, Salvador (eds.), *Competing patterns in English affixation*, 207–244. Bern: Peter Lang.

Lara-Clares, Cristina & Lara-Clares, Alicia. 2016. An online tool for big data sampling in research on competition in English word-formation. (Paper presented at the 4th meeting *Linguistics Beyond and Within* – International Linguistics Conference, Lublin, 20–21 October 2016.)

Lijffijt, Jefrey & Gries, Stefan Th. 2012. Correction to Stefan Th. Gries' "Dispersions and adjusted frequencies in corpora", International Journal of Corpus Linguistics, 13:4 (2008), 403–437. *International Journal of Corpus Linguistics* 17(1). 147–149.

Lieber, Rochelle. 2004. *Morphology and lexical semantics*. Cambridge: Cambridge University Press.

Lindsay, Mark. 2012. Rival suffixes: Synonymy, competition, and the emergence of productivity. In Ralli, Angela & Booij, Geert & Scalise, Sergio & Karasimos, Athanasios (eds.), *Proceedings of the 8th Mediterranean Morphology Meeting – Morphology and the architecture of hrammar*, 192–203. Patras: University of Patras.

Lindsay, Mark & Aronoff, Mark. 2013. Natural selection in self-organizing morphological systems. In Montermini, Fabio & Boyé, Gilles & Tseng, Jesse (eds.), *Morphology in Toulouse: Selected proceedings of Décembrettes 7*, 133–153. Munich: Lincom Europe.

Lloyd, Cynthia. 2011. *Semantics and word formation. The semantic development of five French suffixes in Middle English*. Bern: Peter Lang.

Lohmann, Arne. 2017. Phonological properties of word classes and directionality in conversion. *Word Structure* 10(2). 204–234.

Luschützky, Hans Christian. 2015. Status nouns. In Müller, Peter O. & Ohnheiser, Ingeborg & Olsen, Susan & Rainer, Franz (eds.), *An international handbook of the languages of Europe*, 1268–1284. Berlin: De Gruyter Mouton.

MacWhinney, Brian & Malchukov, Andrej & Moravcsik, Edith (eds.). 2014. *Competing motivations in grammar and usage*. Oxford: Oxford University Press.

Palacios, Amutio. 2013. Suffix competition in Old English word formation. *Revista electrónica de lingüística aplicada* 12. 45–62.

Plag, Ingo. 1999. *Morphological productivity: Structural constraints in English derivation*. Berlin: De Gruyter Mouton.

Plag, Ingo. 2000. On the mechanisms of morphological rivalry: a new look at competing verb-deriving affixes in English. In Reitz, Bernhard & Rieuwerts, Sigrid (eds.), *Anglistentag 1999 Mainz. Proceedings*, 63–76. Trier: Wissenschaftlicher Verlag Trier.

Pounder, Amanda. 2000. *Process and paradigms in word-formation morphology* (Trends in Linguistics 131). Berlin: De Gruyter Mouton.

Proffitt, Michael. 2018. *The Oxford English Dictionary*. (http://www.oed.com) (Accessed 2018-07-20.)

Quirk, Randolph & Greenbaum, Sidney & Leech, Geoffrey & Svartvik, Jan. 1985. *A Comprehensive grammar of the English language*. London: Longman.

Rainer, Franz. 1988. Towards a theory of blocking: the case of Italian and German quality nouns. In Booij, Geert & van Marle, Jaap (eds.), *Yearbook of morphology*, 155–185. Dordrecht: Foris.

Rainer, Franz. 2015. Quality nouns. In Müller, Peter O. & Ohnheiser, Ingeborg & Olsen, Susan & Rainer, Franz (eds.), *An international handbook of the languages of Europe*, 1268–1284. Berlin: De Gruyter Mouton.

Raosoft Inc. 2004. *Sample size calculator*. (http://www.raosoft.com/samplesize.html?nosurvey). (Accessed 2018-01-14).

Riddle, Elizabeth M. 1985. A historical perspective on the productivity of the suffixes *-ness* and *-ity*. In Fisiak, Jacek (ed.), *Historical semantics: Historical word-formation*, 435–461. Berlin: Mouton.

Stockwell, Robert & Minkova, Donka. 2001. *English wordsHistory and structure*. Cambridge: Cambridge University Press.

van Marle, Jaap. 1984. *On the paradigmatic dimension of morphological creativity*. Dordrecht: Foris.

*Cristina Lara-Clares*
*c/o Salvador Valera Hernández*
*Departamento de Filologías Inglesa y Alemana*
*Facultad de Filosofía y Letras Campus de Cartuja*
*18071 Granada*
*España - Spain*
*cristinalara@correo.ugr.es*

*Paul Thompson*
*Department of English Language and Linguistics*
*University of Birmingham*
*Edgbaston*
*Birmingham B15 2TT*
*United Kingdom*
*p.thompson@bham.ac.uk*

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