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Approximation and comparison in word-formation: The case of denominal adjectives in Dutch, German, and English

Abstract: The paper presents a corpus-based comparative study of denominal adjectives in Dutch, German, and English. It aims at clarifying the notion of approximation. More specifically, it focuses on investigating the relation between approximation and comparison as semantic categories in word-formation. Drawing on equivalent patterns, we study both the relation between comparative and approximative readings in various word-formation patterns (derivation and compounding) in Dutch, German, and English as well as the respective differences between the languages. We specifically focus on suffixes and other right head constituents (in particular Dutch *-achtig*, German *-artig* and *-ähnlich*, and English *-like*), thereby addressing the question whether word class changing morphology is at all suitable for expressing approximation. We conclude that the patterns investigated in our study may have approximative readings but are not approximative in the strict sense.

Keywords: comparative morphology, approximation, semantics of word-formation, compounding, derivation, evaluative morphology, contrastive linguistics, West Germanic

1. Introduction*

Approximation is often paraphrased as approaching or imitating a concept. Typical examples of approximative morphology from the literature (in the domain of nominal and adjectival word-formation) are compounds with *pseudo-* or *semi-* (*pseudo problem*, *pseudo-transitive*, *semi-professional*). In traditional word-formation theory (on German, see e.g., Kühnhold et al. 1978: 188ff), these examples are semantically classified as privative word-formation. In such a semantic categorization, privative morphology stands next to other semantic groups such as comparison or gradation.

Studies on approximation often indicate a connection or overlap with evaluative morphology. For instance, some authors consider approximation as a sub-domain of evaluation

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and approximative morphological markers as evaluative markers from a functional point of view (e.g., Masini & Micheli 2020; Van Goethem & Norde 2020). Evaluative patterns serve to express speaker attitude and evaluation. Morphologically, they can be realized in different ways, mainly by affixes (e.g., German *Gesinge* (pejorative term for) ‘singing’, *Ministerchen* lit. little minister) and affixoids (*saukalt* lit. sow cold, ‘freezing cold’, *grotten-schlecht* lit. cave bad ‘lousy’).

From a semantic point of view, approximation (as a case of privative morphology) also resembles comparison. This resemblance is especially strong in adjectival word-formation (e.g., Kühnhold et al. 1978; Fleischer & Barz 2012) (German *heldenhaft* ‘heroic’, *hündisch* ‘doglike’, *grippös* ‘influenzal’, *grippoid* ‘grippoid’, *engelsgleich* ‘angelic’, *menschenähnlich* ‘human-like’). While evaluation is quite clearly a functional category in its own right, the semantic demarcation between approximation and comparison is much more difficult. In particular, there is no clear and exclusive assignment of morphological markers to either of these categories. This can be illustrated by the Dutch suffix *-achtig*. A formation like *leerachtig* (*een leerachtige substantie* ‘a leathery/leather-like substance’) might be classified as approximative if it is intended to express that the substance has leather-like properties but is not leather, i.e., when it is approximating the category leather (cf. (1)). On the other hand, it can be classified as comparative, if it is intended to refer to the presence of leather-typical properties, regardless of whether it is actually leather or not (cf. (2)). It is not always easy to differentiate between the two; both meanings seem to be possible in the case of (3):

- (1) Het kunstleder is een goed alternatief voor de stoffen en nylons. Het materiaal voelt zacht en **leerachtig** aan. (nlTenTen14)
‘Faux leather is a good alternative to fabrics and nylons. The material feels soft and leather-like.’
- (2) Skimmea Japonica is een groenblijvend heestertje dat niet hoger dan een meter wordt met een zeer compacte groei en **leerachtig** ovaal blad. (nlTenTen14)
‘Skimmea Japonica is an evergreen shrub that does not grow higher than one meter with a very compact growth and leathery oval leaves.’
- (3) Afgelopen zaterdag verdwenen uit de dameskleedkamer: bruin **leerachtig** kindergasje. (nlTenTen14)
‘Disappeared from the ladies’ locker room last Saturday: brown leathery/leather-like children’s jacket.’

Approximation and comparison are both related to the concept of similarity. However, although similarity (or resemblance) is an integral part of semantic descriptions of approximation in the literature, the distinction and demarcation of approximation and comparison has hardly been discussed so far.

For this reason, our contribution aims at describing and defining approximation more precisely as a category in its own right by comparing and distinguishing it from comparison as a central semantic group in word-formation. We argue that approximation should neither be equated with comparison nor similarity and that similarity is a necessary but not a sufficient part of the concept of approximation in the sense that approximation is derived from similarity through inference (Bauer et al. 2013: 313).¹ In other words, the expression of similarity does not suffice for qualifying as approximation. At the same time, however, our study also shows that the conceptual distinction between approximation and comparison cannot always be clearly made for all markers under discussion. We will, therefore, argue that while there are morphological markers that are unambiguously and exclusively approximative there are also other markers that are basically comparative but may have approximative readings in certain contexts.

In the following, we will focus primarily on such markers. We follow a contrastive approach, dealing with denominal adjective formation (derivation and compounding) in German, Dutch and English. The markers examined here are particularly interesting since all of them are right constituents (suffixes and stems) and thus heads that determine the word class of the resulting formations. In contrast, many of the known examples of approximative morphology from the literature are left constituents, namely prefixes, prefixoids, confixes, and stems. These elements are not word class changing since the word class is determined by the right constituent of the complex word.

Finally, our investigation also touches on issues of competition of morphological patterns, since it involves a number of word-formation patterns with similar or identical meaning.

¹ However, approximation in general is not necessarily derived from similitive items such as in the cases at hand. Other sources of approximative morphological markers include diminutives and degree markers as well as quantitative items, for instance.

2. Basic theoretical assumptions

Approximative, comparative, and evaluative morphological expressions share the basic structure on which their specific meanings are built: They are binary, with one constituent naming the basic concept to be modified and the other realizing the meaning change in question.

Evaluation is used to express speaker attitude in terms of the degree to which a concept is expressed or evaluated in relation to a standard or default value (e.g., Grandi & Körtvélyessy 2015). This includes more quantitative and objectively traceable evaluations as well as qualitative and subjective ones. Typical manifestations of evaluation are diminution and augmentation, i.e., the assessment of a concept as smaller/lower or larger/higher than the respective default value. Pejoration and melioration, in turn, serve the speaker's pejorative (negative) or valorative (positive) evaluation. However, quantitative and qualitative perspectives cannot always be separated: Diminution, for example, as belittling, is often associated with either a positive or negative evaluation. In this respect, evaluative morphology is often also expressive (cf., e.g., Scherer 2019), in the sense of Foolen (1997: 15): "It is the emotional feeling of the speaker that is expressed and communicated in the expressive function."

In West Germanic, the most important morphological means of evaluation are derivation and compounding whereas other languages also exploit processes such as reduplication or inflection (cf. Grandi & Körtvélyessy 2015, for instance). Scalise (1984) presented some assumptions about the formal properties of evaluative morphology. He claimed that evaluative processes never change the syntactic category of the base word. This assumption of categorial neutrality can be explained by the idea that evaluative markers have a modifying function rather than that of creating new lexemes (cf., e.g., Grandi 2015: 76). At the same time, however, there has been counter-evidence to this assumption in the literature for a long time since it is well known that there are also occasional evaluative processes with a change of word class (cf. Bauer 1997; Grandi 2015 and 2017, for discussion). Categorial neutrality, however, might well be a feature of approximative morphological processes. If true, this could possibly provide a means to differentiate approximation from evaluation.

Comparison is one of the most important functional-semantic classes of adjective formation (for German word-formation see Fleischer & Barz 2012; Kühnhold et al. 1978, for instance). Denominal comparative adjectives make a nominal concept available for comparison with another nominal concept and express similarity with the base noun. The similarity can either refer to individual salient properties or to the category as a whole (cf. Bauer et al. 2013: 312), as in the case of *childish* (with respect to unconcern or petulance) vs. *childlike* (with respect to the child in general). The similarity may vary in scope (Kühnhold et al. 1978: 321–354): (a) Reference identity of the two categories (*eine katastrophale Niederlage* ‘a catastrophic defeat’: i.e., something being both a catastrophe and a defeat at the same time; *ein flegelhafter Junge* ‘a boorish boy’: a person which is both a boy and a boor, (b) Similarity with respect to individual salient features or the entire category without reference identity (*das balladeske Lied* ‘the balladesque song’: a song which is not a ballad but shows some features typical of ballads; *der grippale Infekt* ‘the flu-like infection: an infection that is not the flu but flu-like’; *die gummiartige Masse* ‘the rubbery mass’, *das sackförmige Kleid* ‘the baggy dress’, *das nixenhafte Geschöpf* ‘the mermaid-like creature’, *die lederne Haut* ‘the leathery skin’, *der polizeimäßige Hausmeister* ‘the police-like janitor’, *ein sommerlicher Herbst* ‘a summery autumn’) or (c) Standard norms and values of the base noun are met (*die sommerliche Bekleidung* ‘the summery dress’, *die planmäßige Abfahrt* ‘the scheduled departure’, *das naturhafte Leben* ‘the nature-like life’, *die polizeimäßige Verhandlung* ‘the police-like trial’).

These three groups, especially the first two, are largely realized by the same suffixes. In addition, the characteristics of group (b) are found in many German comparative compounds with heads such as *-ähnlich* (‘-like’), *-getreu* (‘true to’), *-typisch* (‘typical’) and *-gleich* (‘-like’), e.g., *grippeähnlich*, *engelsgleich* (‘flu-like, angel-like’).² In all of these cases, the right constituent determines the word class of the complex word. These comparative formations make a nominal concept available in the form of an adjective.

The meaning or function of **approximation** has been described as ‘resemblance’, ‘similarity’, ‘vagueness’ (also intentional), ‘imitation and fakeness’ as well as ‘attenuation’ (as

² In addition, there are numerous comparative formations with qualitative adjective heads in adjectival compounds, which are not relevant in our context, since here the comparison is made with respect to the adjectival head, e.g., *lammfromm* (‘pious as a lamb’), *grasgrün* (‘grass-green’), *aalglatt* (lit. eel smooth, ‘slippery as an eel’).

reduced degree of a quality). So, approximation expresses a comparison and similarity to a certain concept with respect to one or more properties. It is essential, however, that approximative formations always express that category X – however great the similarity – is ultimately not present, which is why approximation is also referred to as privative. For example, Eitelmann et al. (2020: 805) emphasize that “in such cases, *-ish* does not serve to denote an unequivocal relatedness as with the associative sense, but on the contrary an ultimate dissimilarity”. Similarly, the meaning of the approximative marker *fake-* has been described as “(a) FAKE X is not (an) X” (Cappelle et al. 2018: 9; cf. also Van Goethem & Norde 2020). So *Scheinehe* (‘sham marriage’) or *eheähnliche Verbindung* (‘marriage-like union’) do exactly not denote a marriage (even if many features of a marriage are present), a *pseudo-contract* or *fake-contract* is not a contract, and *virus-like particles* are not viruses in the strict sense. For this reason, constructions like *ein virusähnliches Virus* (‘a virus-like virus’) or *Er war einer grippeähnlichen Grippe erkrankt* (‘He was sick of a flu-like flu’) are strongly marked, if not semantically ill-formed.

As mentioned above, in the literature, approximation is partly considered as an independent category, but partly also as a variant of evaluative morphology (cf., e.g., Grandi & Körtvélyessy 2015). In Kühnhold et al. (1978: 188ff), on the other hand, such cases are classified as privative word-formation alongside other meaning groups such as comparison or gradation. Thus, relevant examples can be found there in the section on ‘negation and restricted negation’ under the headings ‘is not, but appears to be’ (e.g., *pseudo-authentisch* ‘pseudo-authentic’, *scheinfromm* ‘sanctimonious’), ‘only halfway, barely, almost’ (*semi-professionell* ‘semi-professional’, *halblaut* ‘semi-loud’), and ‘not but nearly/approximately/almost’ (*quasi-stationär* ‘quasi-stationary’, *paramilitärisch* ‘paramilitary’).

The formal realization of approximation is heterogeneous. A large part of the relevant examples from the literature are prefixes, prefixoids, confixes and free stems in non-head position, for instance German *schein-* (‘appear’), *halb-* (‘half’), Dutch *nep-* (‘sham, fake’), *namaak-* (‘imitate’), *kunst-* (‘artificial’), *imitatie-* (‘imitation’), Italian *simil-* (‘similar to’) as well as loan elements that are used in various languages such as *semi-*, *para-*, *pseudo-*, *fake-*, *quasi-*, *sub-*, e.g., Van Goethem & Norde (2020); Masini & Micheli (2020); Cappelle et al. (2023). As left constituents they are not category-changing and result in modification processes. In addition, there are also some suffixal approximative patterns, among which the

English suffix *-ish* which has – besides other meanings – an approximative reading (*freeish*, *greenish*), cf. Eitelmann et al. (2020). The authors point out that the approximative reading of *-ish* is found mainly with adjectival bases, so that there is no word class change here either. At the same time they also give examples of approximative *ish*-derivatives on the basis of numerals or nouns (*fourteenish*, *1984-ish*), i.e., with word class changes. Finally, the Italian reduplicative construction N-*non*-N (Masini & Di Donato 2023) is phrasal in nature and it does not imply a change of the syntactic category.

3. Hypotheses on approximation and comparison

While evaluative morphology (as a functional domain) as well as comparison (as a semantic class) are established and clearly distinguishable due to their semantic-functional and morphological properties, this is less clear in the case of approximation. Thus the question arises whether approximation is actually a category in its own right or rather a variant of one of the other two categories.

Besides the question to what extent not changing the word class is constitutive for approximative morphological processes (in other words, whether only modification processes can be approximative), the meaning of the approximative markers themselves must also be clarified. The known examples are stems or prefixoids such as *schein-*, *quasi-*, *nep-*, or *kunst-*, confixes such as *pseudo-* or *semi-*, or prefixes such as *sub-* or *para-* (note that these assignments are neither unambiguous nor uniform in the literature). All of these markers have a lexical meaning. This distinguishes them from prototypical derivational suffixes that do not have a lexical meaning, but only or primarily a grammatical function, sometimes also called a ‘grammatical meaning’.³ The semantics of formations with approximative left-hand constituents thus results compositionally from the lexical meaning of the constituents (something similar can be assumed for the N-*non*-N construction in Italian). The approximative uses of the English suffix *-ish* form (again) an exception to these observations.

³ Both the demarcation between derivational affixes and stems and between lexical and grammatical meaning is far from clear and has been the subject of extensive discussion in the literature, in particular regarding the notion of affixoid (see for example Hüning & Booij 2014). However, this point cannot be developed further here.

Moreover, approximative markers such as *fake-*, Dutch *nep-*, or German *schein-* (all meaning ‘fake’, ‘sham’) do not only express the meaning ‘is not, but appears to be’ (cf. Section 2) but often also seem to convey the intentional pretense of the existence of a category, in particular with the intention to fool somebody (for a more detailed discussion see Van Goethem & Norde 2020). We will discuss whether this is a semantic feature of approximative meaning in general.

The guiding questions mentioned above will be examined in the following using data from the German-Dutch-English language comparison. We base our study on the following hypotheses:

1. Approximativity is derived from similarity.
2. Approximative patterns may be evaluative, comparative patterns are not.
3. Approximation in the narrower sense is characterized by intentionality: Approximative formations explicitly reject to be X.
4. There are markers that are exclusively approximative or comparative, as well as those that can be both, depending on the context.
5. Approximation is also possible for word-formation patterns with word class changes.
6. There are also non-lexical approximative markers.

We discuss these questions for the Dutch suffix *-achtig* and competing forms in Dutch, as well as for the equivalents in German and English. The starting point is the observation that in connection with nominal bases, *-achtig* sometimes allows approximative interpretations, e.g., *virusachtige deeltjes* (‘virus-like particles’), *migraine-achtige hoofdpijn* (‘migraine-like headache’). Therefore, besides English *-ish*, *-achtig* might be another approximative suffix although its lexical meaning has been lost in the course of history and although it can cause word class change.

4. Pilot study on approximative adjective formation in Dutch and German

The starting point of our pilot study on complex adjectives with an approximative meaning is the Dutch suffix *-achtig*. Adjectives like *virusachtig* or *migraine-achtig* correspond to adjectives with *-like* in English: *virus-like particles*, *migraine-like headache*.

As pointed out in Hüning (2004), the Dutch suffix *-achtig* can be used to form adjectives on the basis of nouns, adjectives and verbs, and the resulting adjectives can be grouped into several semantic categories. In this paper we focus on one group, namely denominal adjectives with *-achtig* with a comparative or approximative meaning.

As we are especially interested in the equivalence of this pattern with word-formation patterns in German, we first looked for translational equivalents. Candidates for corresponding suffixes are the etymologically related German suffixes *-haft* and *-artig* (cf. Pijnenburg 1993; Maesfranckx & Taldeman 1998; Hüning 2004). They are both used in comparative contexts: *griepachtige symptomen* – *grippeartige Symptomen* ('flu-like symptoms'), *lenteachtig weer* – *frühlingshaftes Wetter* ('spring-like weather'). However, in contexts for which we are inclined to assume an approximative interpretation for the adjective, *-achtig* often seemed to correspond to other German word-formation patterns, especially compounding with *-ähnlich*. *Ähnlich* is an adjective meaning 'similar, like X (with regard to certain features)', e.g.: *Er ist seinem Vater sehr ähnlich* 'he is very similar to his father; he resembles his father very much'. For this reason, compounding with *-ähnlich* might be another case of a comparative/approximative word-formation pattern.

As mentioned above, Dutch *leerachtig* 'leatherlike' can not only be used comparatively but also approximatively (cf. examples (1)–(3)). This approximative use is also found with German *lederähnlich*, cf. (4)–(5):

- (4) Das Armaturenboard ist künftig mit einem **lederähnlichen** Material mit Doppelnähten eingefasst. (deTenTen18)
 'In the future, the dashboard will be trimmed with a leather-like material with double stitching.'
- (5) Unser Familienunternehmen bleibt seiner Tradition treu und konzentriert sich ausschließlich auf die Veredelung von Leder und **lederähnlichen** Materialien zu hochwertigen Armbändern für Uhren. (deTenTen13)
 'Our family business remains true to its tradition and focuses exclusively on the finishing of leather and leather-like materials into high-quality bracelets for watches.'

Lederähnlich here means that the material is 'very much like leather, almost leather' (with the implication: but it is not), which makes it a good example of a denominal adjective with approximative semantics.

4.1 Methods and data

We tried to compare the relevant markers in the different languages by using parallel corpora on sketchengine.eu, but since we are dealing with low-frequency phenomena, they turned out to be too small and their focus on administrative and technical texts proved problematic for our queries.

Therefore, we used the much bigger and more diverse ‘TenTen Corpora’ (Jakubíček et al. 2013, available from sketchengine.eu). First, we compiled a list of English adjectives with *-like*. This word-formation element has been described in handbooks as a means for expressing approximative semantics in the adjectival domain. When attached to adjectives, *-like* seems “to mean not so much ‘similar to X’ but ‘approximating X’” (Bauer et al. 2013: 313). We assume that this ‘approximating X’ reading is also present in denominal formations and that *-like* is an example of a category changing marker with approximative semantics, cf. (6).

- (6) Tamiflu used to treat **flu-like** illnesses caused by agents other than influenza viruses
Types A and B virus in humans. (enTenTen20)

This list of *-like*-adjectives served as a basis for a selection of base words from different categories. We looked for the translational equivalents of these words combined with an adjectival suffix in the German and Dutch corpora. This way we collected complex adjectives corresponding to *X-like* in the three languages.

We chose 100 base words from different semantic categories, in particular:

- diseases (*aids, asthma, flu, pneumonia, stroke*)
- mass nouns (*honey, marble, meat, milk, velvet*)
- animal names (*bird, eagle, panda, peacock, wolf*)
- names for persons, functions etc. (*boss, dandy, professor, teacher, uncle*)

In order to distinguish comparative from approximative morphology, we were especially interested in competing word-formation processes. For our queries we used the lemma search offered by the TenTen Corpora and we looked for adjectives ending in:

- English: *-like, -esque, -ish*
- Dutch: *-achtig, -esk, -erig, -like, -matig*
- German: *-artig, -ähnlich, -esk, -haft, -like, -mäßig*

We hypothesized that *-like* might be used as a loan suffix in German and Dutch, and therefore included it in our queries in the respective corpora. In English, this suffix does not always express similarity. *Warlike*, for example, translates as both *kriegsähnlich* (‘similar to war’) and *kriegerisch* (‘belonging to war’), as in *warlike violence* (‘kriegerische Gewalt’). We will not discuss the latter use.

Very frequent suffixes like English *-y*, Dutch *-ig* or German *-lich* and *-ig* were not systematically taken into account. They are, however, semantically extremely versatile and therefore show some overlap with the categories we are mainly interested in.

We subsumed the inflected forms under the citation form of the adjective. Differences in spelling were not taken into account. Therefore forms with and without hyphens are listed together (*honey-like*, *honeylike*); the more frequent forms are used as citation forms.

We compiled files with KWIC-concordances for the three languages, which served as a basis for frequency lists of the different forms and for our further considerations. We used the following corpora on sketchengine.eu:

Tab. 1: Corpora used for this study

corpus (sketchengine.eu)	size (in million words)
English Web 2020 (<i>enTenTen20</i>)	38,149
German Web 2013 (<i>deTenTen13</i>)	16,526
Dutch Web 2014 (<i>nlTenTen14</i>)	2,254

Note the enormous differences in size of the corpora; this might influence the results.

As mentioned above, we started with a list of English denominal adjectives with *-like*. In the tables below, we present some frequency data to illustrate the distribution of the different markers in English, German and Dutch for our sample.

Tab. 2: Absolute frequencies of English denominal adjectives in *enTenTen20*

ENGLISH (<i>enTenTen20</i>)	<i>-like</i>	<i>-ish</i>	<i>-esque</i>
<i>AIDS</i>	418	–	–
<i>flu</i>	9775	101	–
<i>parkinson</i>	243	–	2
<i>stroke</i>	899	3	–
<i>honey</i>	1025	78	2

ENGLISH (enTenTen20)	-like	-ish	-esque
<i>marble</i>	817	4	3
<i>milk</i>	414	32	–
<i>velvet</i>	724	14	–
<i>wood</i>	1205	27	–
<i>bird</i>	8476	52	1
<i>eagle</i>	440	14	–
<i>panda</i>	73	4	2
<i>peacock</i>	118	35	4
<i>wolf</i>	2962	3808	1
<i>dandy</i>	54	473	31
<i>professor</i>	57	15	6
<i>student</i>	103	26	9
<i>teacher</i>	132	25	10
<i>uncle</i>	33	9	–

Tab. 3: Absolute frequencies of German denominal adjectives in *deTenTen13*

GERMAN (deTenTen13)	-ähnlich	-artig	-esk	-haft	-like	-mäßig
<i>AIDS</i> (‘AIDS’)	85	5	–	–	–	–
<i>grippe</i> (‘flu’)	4369	713	–	1	–	38
<i>parkinson</i> (‘Parkinson’)	196	36	1	1	–	–
<i>schlaganfall</i> (‘stroke’)	95	16	–	–	–	–
<i>honig</i> (‘honey’)	144	716		6	–	4
<i>marmor</i> (‘marble’)	196	166	1	20	–	1
<i>milch</i> (‘milk’)	133	173			–	5
<i>samt</i> (‘velvet’)	106	1524		14	–	–
<i>holz</i> (‘wood’)	325	731	–	1	–	25
<i>vogel</i> (‘bird’)	574	449	–	55	–	13
<i>adler</i> (‘eagle’)	37	52	–	35	–	6
<i>panda</i> (‘pande’)	9	5	–	2	–	5
<i>pfau(en)</i> (‘peacock’)	15	35	–	80	–	5
<i>wolf(s)</i> (‘wolf’)	599	202	–	7	–	12
<i>dandy</i> (‘dandy’)	1	1	82	583	25	7
<i>professor(en)</i> (‘professor’)	1	–	–	21	1	5
<i>student(en)</i> (‘student’)	10	1	–	12	4	18

GERMAN (deTenTen13)	-ähnlich	-artig	-esk	-haft	-like	-mäßig
<i>lehrer</i> ('teacher')	7	6	–	514	3	38
<i>onkel</i> ('uncle')	2	–	1	270	–	7

Tab. 4: Absolute frequencies of Dutch denominal adjectives in *nlTenTen14*

DUTCH (nlTenTen14)	-achtig	-esk	-erig	-like	-matig
<i>AIDS</i> ('AIDS')	3	–	–	–	–
<i>griep</i> ('flu')	732	–	1061	–	–
<i>parkinson</i> ('Parkinson')	37	–	–	–	–
<i>beroerte</i> ('stroke')	2	–	–	–	–
<i>honing</i> ('honey')	207	–	–	–	–
<i>marmer</i> ('marble')	82	–	–	–	–
<i>melk</i> ('milk')	755	–	13	–	–
<i>fluweel</i> ('velvet')	596	–	–	–	–
<i>hout</i> ('wood')	1368	–	1222	–	–
<i>vogel</i> ('bird')	87	–	–	–	–
<i>arend</i> ('eagle')	8	–	–	–	–
<i>panda</i> ('panda')	2	–	–	–	–
<i>pauw</i> ('peacock')	6	–	–	–	–
<i>wolf(s) wolven</i> ('wolf')	79	–	–	–	–
<i>dandy</i> ('dandy')	31	10	–	–	–
<i>professor(en)</i> ('professor')	3	–	–	–	–
<i>student(en)</i> ('student')	9	–	1	–	–
<i>leraar</i> ('teacher')	1	–	1	–	–
<i>oom</i> ('uncle')	2	–	–	–	–

4.2 General description of the data

Some things become directly clear when looking at these data sets. First of all, we can conclude that there is some limited competition in English between the adjectival markers *-like* and *-ish* (*flu-like* vs. *fluish*, cf. Bauer, Lieber & Plag 2013: 312–313). This seems especially true for certain groups of adjectives, since *-ish* is generally rather marginal in the

denominal domain.⁴ The use of *-esque* and its equivalent *-esk* in German and Dutch is even rarer.

Comparing the word-formation elements in the three languages reveals a direct equivalence between English *-like* and Dutch *-achtig*. All *-like*-adjectives correspond to an adjective with the suffix *-achtig* in Dutch and *-achtig* seems to be the only suffix used regularly in these contexts.⁵ German, on the other hand, has several elements that can be combined with the corresponding base nouns. The elements *-artig* and *-ähnlich* seem to compete in the formation of these adjectives, and *-haft*- and *-mäßig* also occur frequently.

The suffix *-mäßig*, however, mainly occurs in adjectives that are used adverbially, meaning ‘with regard to X’⁶, cf. (7). Occasionally, it also expresses similarity, cf. (8):

- (7) Mich hat es nämlich **grippemäßig** voll erwischt. (deTenTen13)
 (‘I have been hit by the flu.’)
- (8) ... weil mich so ein doofer **grippemäßiger** Infekt umklammert hat. (deTenTen13)
 (‘...because I had such a stupid flu-like infection.’)

These German adjectives denote a comparison on the basis of typical features of the noun they are derived from. *-matig*, the Dutch equivalent of *-mäßig*, is – contrary to our expectations – apparently never used in the contexts we are interested in. We did not find any approximative uses of the [N+*mäßig*]_A pattern.

The German suffix *-haft* is used especially with personal and function names (cf. Hüning 2004). This suffix is almost absent in the disease group and marginal with mass nouns. Animacy seems to play an important role for the distribution of *-haft*: diseases < mass nouns < animals < humans. Adjectives with *-haft* usually express similarity with respect to typical or standard norms and values or to salient features of nominal base concept, like in (9):

- (9) Umberto Eco in einer stilvollen, selten **professorenhaften** Sprache geschriebene Essays (deTenTen13)
 ‘Umberto Eco’s essays written in a stylish, rarely professorial language’

⁴ For *-ish* see the contribution by Eitelmann & Haumann (2023).

⁵ There are some lexicalized examples with *-erig* in Dutch which we will not discuss in this paper. *Griep(erig)* (‘fluish’) is often used predicatively (*ik ben wat griep(erig)* ‘I’ve got a touch of flu’) and *hou(er)ig* (‘wooden’) is often used metaphorically (*een hou(er)ig mens* ‘a stiff person’).

⁶ Adverbial German *-mäßig* and Dutch *-matig* are described in Diepeveen (2012).

There are, however, no approximative uses of [N+*haft*]_A in our sample.

Our hypothesis that *-like* might be used productively as a loan suffix in the other two languages could not be confirmed. We only found very few examples for German, especially with derivatives from personal or function names. They have a comparative meaning.

- (10) Zum Interview erscheint Matthias Haller **Professoren-like** mit Anzug und Krawatte – aber unstandesgemäss auf einem Velo. (deTenTen13)

‘Matthias Haller appears for the interview professor-like in a suit and tie – but unseemly on a bicycle.’

- (11) Sie ist ganz **studentenlike** mit der Mitfahrzentrale unterwegs. (deTenTen13)

‘She is travelling all student-like with the ride-sharing service.’

For Dutch, the yield is even lower (which might be due to the size of the Dutch corpus). In the following example, the use of the adjective could be analyzed as approximative, but it is unclear to what extent this needs to be explained by the form correspondence with the English adjective.

- (12) Mijn laatste ontwerp, de zwarte fascinator is van zwart **rubber-like** materiaal. Het gevoel en beweging van rubber ligt heel dicht bij vilt waar veel hoeden van gemaakt worden. (nlTenTen14)

‘My latest design, the black fascinator, is made of black rubber-like material. The feel and movement of rubber is very close to felt which many hats are made of.’

In any case, the general conclusion is that – contrary to our assumption – the possibility of forming *-like* adjectives is not popular in (written) German and Dutch.

This leaves us with the comparison of English *-like* and Dutch *-achtig* on the one hand and with German *-artig* and *-ähnlich* on the other. These are the elements that are used as markers both for comparison and approximation.

4.3 Approximative morphology?

We start with bases denoting a disease. While the adjective *flu-like* has a competitor in *fluish*, *AIDS* is only combined with *-like*. They all have a comparative meaning, but in certain contexts, they also have an approximative reading:

- (13) Mysterious **AIDS-like** illnesses also occurred in primate laboratories a few years before AIDS. (enTenTen20)
- (14) Researchers were able to confirm the **AIDS-like** disease is not contagious. (enTenTen20)

In line with Bauer et al. (2013: 312), contexts like “AIDS-like symptoms” where *-like* indicates similarity to individual salient qualities can be distinguished from cases such as “an AIDS-like disease”, where *-like* indicates the similarity to a whole, implying ‘but it’s not the same’. Therefore, we are inclined to regard this use of *-like* as approximation.

Fluish, on the other hand, is mainly used to indicate ‘attenuation’ (in the sense of reduction or a reduced degree of a quality). This fits the definition of *fluish* in the Merriam-Webster dictionary⁷: “mildly affected with influenza”.

- (15) Came home and ten days later came down with a strange **fluish** ailment and the first fever in years. (enTenTen20)

At the same time, there are also approximative usages, where some kind of holistic similarity is expressed.

- (16) I had too little methadone; after two-and-a-half weeks I felt **fluish**, with cold shivers. (enTenTen20)

Dutch *griepachtig* is also used to express similarity:

- (17) [Frühsommer-Meningoenzephalitis (FSME)] is een ziekte die kan variëren van een **griepachtig** beeld tot een ernstige hersenontsteking. (nlTenTen14)
- ‘TBE is a disease that can range from a flu-like appearance to severe meningitis.’

Griepachtige klachten or *griepachtige symptomen/verschijnselen* (all meaning ‘flu-like symptoms’) refer to aspects of an illness that are similar to symptoms of flu. A more holistic comparison is also possible, resulting in an approximative reading:

- (18) Aangewakkerd door uitbarstingen van **griepachtige** ziekten als de luchtweginfectie SARS en de vogelgriep, roepen vele deskundigen al jarenlang om het hardst dat we ons op het ergste moeten voorbereiden. (nlTenTen14)

⁷ <https://www.merriam-webster.com/> (accessed 14 March 2023).

‘Encouraged by outbreaks of flu-like illnesses such as the respiratory infection SARS and avian flu, many experts have been shouting out loud for years that we should prepare for the worst.’

Such uses of *-like* and *-achtig* correspond very well to *-artig* in German. In addition, German also uses adjectival compounds with the head constituent *-ähnlich* in order to express comparison and approximation. Both *-artig* and *-ähnlich* have a comparative meaning. The literal meaning of *-artig* is ‘belonging to a species (‘Art’). More generally, however, the meaning of *-artig* can be described as ‘similar, like X, showing resemblance in certain qualities or characteristics’. The meaning has thus been bleached and *-artig* has been grammaticalized as a general similarity marker. The grammatical status of *-artig* is, however, not fully clear. It is usually described as a suffix or as a suffix-like [sic!] bound element (cf. Fleischer & Barz 2012: 304). In contrast, *-ähnlich* has a clear lexical comparative meaning (‘similar, like X, showing resemblance in certain qualities or characteristics’) which is found both when used as an adjective and as compound head. Example (19) illustrates this use:

- (19) Die FSME äußert sich zunächst durch **grippeähnliche** Symptome wie Gliederschmerzen und Fieber. (deTenTen13)
- ‘TBE is initially manifested by flu-like symptoms such as aching limbs and fever.’

Examples like (20) and (21) show that in addition an approximative reading of *-ähnlich* is also possible.

- (20) Die chronische Uranvergiftung führt zu einem **AIDS-ähnlichen** Immundefekt oder zu Krebserkrankungen, insbesondere Leukämie. (deTenTen13)
- ‘Chronic uranium poisoning leads to AIDS-like immunodeficiency or cancer, especially leukemia.’
- (21) Die ersten SIV-Isolate wurden bei Rhesusaffen gefunden, die in Gefangenschaft in Zoos oder Primatenzentren gehalten wurden und an **AIDS-ähnlichen** Krankheiten verstorben waren. (deTenTen13)
- ‘The first SIV isolates were found in rhesus monkeys kept in captivity in zoos or primate centers that had died from AIDS-like diseases.’

An approximative interpretation of *-ähnlich* can also be found in formations with mass nouns, cf. (22)–(24).

- (22) In France, together with orange, lemon and sugar a **honey-like** jelly is made from the flowers and used as a spread. (enTenTen20)
- (23) Eine **honigähnliche** Zuckerpaste wird gegen die natürliche Wuchsrichtung des Haares aufgetragen und dringt so bis zum Haarschaft ein. (deTenTen13)
 ‘A honey-like sugar paste is applied against the natural direction of hair growth, penetrating all the way to the hair shaft.’
- (24) De suikers en het vruchtvlees concentreren, waardoor er bij het persen een bijna **honingachtig** vocht ontstaat. (nlTenTen14)
 ‘The sugars and pulp concentrate, producing an almost honey-like liquid when pressed.’

Honey-like, *honigähnlich* and *honingachtig* are used attributively with a noun X and compare X with honey. The implication is: X is almost honey, but ultimately it is not. In (24), this approximative reading is strengthened by the preceding adverb *bijna* (‘almost’).

In German, *honigartig* can be used in the same way, although *honigähnlich* seems to be preferred, since it expresses the approximative meaning more clearly (‘almost honey, but not really’). *Honigartig* as used in (25), on the other hand, leaves open the question whether X actually belongs to the category ‘honey’ or not.

- (25) Wer es süß mag, kann die frischen Blüten zu einem Gelee oder einem **honigartigen** Sirup für einen Brotaufstrich verarbeiten. (deTenTen13)
 ‘For those who like it sweet, the fresh flowers can be made into a jelly or a honey-like syrup for a spread.’

In other contexts, the noun that is modified refers to a property that is part of something else: X is similar to honey with respect to some property Y. Property Y is denoted by the noun which in turn is modified by the adjective. In the following examples this property is the color and the *honey-like color* refers to rosins, earwax and pale ale.

- (26) Many brands sell rosins in two colors, at the same price: a light, **honey-like** color, and a darker color, almost like licorice. (enTenTen20)
- (27) Normaal heeft het oorsmeer een **honingachtige** kleur. (nlTenTen14)
 ‘Normally, earwax has a honey-like color.’
- (28) Im Glas brilliert das East India Pale Ale durch seine appetitliche **honigartige** Farbe. (deTenTen13)
 ‘In the glass, the East India Pale Ale shines with its appetizing honey-like color.’

This means that the modified noun (the color) functions as a ‘tertium comparationis’: rosins, earwax and pale ale are similar to honey with respect to the color. In such contexts, the adjective is never approximative since rosins, earwax and pale ale are never ‘almost honey’. Thus, if an indirect comparison with individual properties introduced via a ‘tertium comparationes’ is involved rather than a direct comparison of whole categories, an approximate interpretation never emerges. Indirect comparisons referring to individual properties are thus clear examples of comparative meanings that cannot receive an approximative interpretation. German typically uses *-artig* in these comparative constructions, but *-ähnlich* is also possible:

- (29) Der Frühlings-Darjeeling Tee hat eine hellgelbe bis **honigähnliche** Farbe und ein lieblich-blumiges Aroma mit einem Hauch Muskat. (deTenTen13)
 ‘Spring Darjeeling tea has a light yellow to honey-like color and a lovely floral aroma with a hint of nutmeg.’

However, because of its lexical meaning, German *-ähnlich* often seems to be more appropriate for the expression of approximation. Here are some examples with mass nouns as the base of the adjective:

- (30) Moleskin ist ein **samtähnlicher** Stoff, jedoch mit geringerer Florhöhe als Samt. (deTenTen13)
 ‘Moleskin is a velvet-like fabric, but with a lower pile height than velvet.’
- (31) Die Insel Brač ist bekannt für ihren weißen, **marmorähnlichen** Kalkstein (deTenTen13)
 ‘The island of Brač is known for its white marble-like limestone’
- (32) Angeboten wird Cordon Bleu, Roulade und Truthahn – hergestellt aus Weizen-Eiweiß und Soja, die zusammen eine **fleischähnliche** Substanz ergeben. (deTenTen13)
 ‘Cordon bleu, roulade and turkey are offered - made from wheat protein and soy, which together create a meat-like substance.’

For the adjective in the last example, *fleischähnlich*, the approximative meaning has become almost lexicalized in times of veganism. Its counterpart *fleischartig* is sometimes used for a very different meaning:

- (33) Möglicherweise hat auch die damals im AStA-Kühlschrank gefundene **fleischartige** Substanz den Gammelfleischskandal ausgelöst. (deTenTen13)

‘It is also possible that the meat-like substance found in the AStA refrigerator at the time triggered the rotten meat scandal.’

Fleischartig here does not mean ‘almost Fleisch’. The word refers to substances that no longer have much to do with meat. We might call this usage ‘disproximative’ (in the sense of Cappelle et al. 2023).

Besides *fleischähnlich*, there are many more examples of ‘real world approximation’, i.e. words denoting substitutes for products that people want to avoid. *Kaffeeähnliche oder milchähnliche Produkte* (‘coffee-like or milk-like products’) belong to a certain lifestyle. Such examples indicate a possible functional division of labor between the two morphological markers according to which *-ähnlich* has (or gets) the function of approximation marker while *-artig* is (or becomes) the default marker for comparison.

To investigate this hypothesis, we took a closer look at a subset of 13 lexemes from our sample. For each lexeme we analyzed the contexts for the derivation with *-artig* and the compound with *-ähnlich*. We labeled them as ‘approximative’ or ‘comparative’ use according to the above mentioned criterion (at the beginning of 4.3) based on the argumentation in Bauer, Lieber & Plag (2013: 312). Distinguishing the uses is, however, not always easy and sometimes impossible. We labeled such uses as ‘other/uncertain’. For each pair of words, we examined 50 randomly selected examples per word. We also looked at 50 randomly selected examples of their counterparts in Dutch (with *-achtig*) and in English (with *-like*) (cf. Tab. 5–7).

Tab. 5: The meaning of German adjectives with *-ähnlich* and *-artig* (in %, N=50)

	GERMAN <i>-ähnlich</i> vs. <i>-artig</i>	comparison	approximation	other/uncertain
1	<i>Asthmaähnlich</i> (‘asthma-like’)	0	94	6
	<i>asthmaartig</i> (‘astma-like’)	4	94	2
2	<i>butterähnlich</i> (‘butter-like’)	46	46	8
	<i>butterartig</i> (‘butter-like’)	42	46	12
3	<i>fleischähnlich</i> (‘meat-like’)	56	38	6
	<i>fleischartig</i> (‘meat-like’)	54	34	12
4	<i>grippeähnlich</i> (‘flu-like’)	32	64	4

	GERMAN <i>-ähnlich</i> vs. <i>-artig</i>	comparison	approximation	other/uncertain
	<i>grippeartig</i> ('flu-like')	18	80	2
5	<i>gummiähnlich</i> ('rubber-like')	14	86	0
	<i>gummiartig</i> ('rubber-like')	8	84	8
6	<i>holzähnlich</i> ('wood-like')	44	54	2
	<i>holzartig</i> ('wood-like')	10	86	4
7	<i>honigähnlich</i> ('honey-like')	40	58	2
	<i>honigartig</i> ('honey-like')	72	18	10
8	<i>kaffeeähnlich</i> ('coffee-like')	38	58	4
	<i>kaffeeartig</i> ('coffee-like')	58	32	10
9	<i>katzenähnlich</i> ('cat-like')	16	70	14
	<i>katzenartig</i> ('cat-like')	14	76	10
10	<i>milchähnlich</i> ('milk-like')	18	82	0
	<i>milchartig</i> ('milk-like')	24	72	4
11	<i>plastikähnlich</i> ('plastic-like')	10	84	6
	<i>plastikartig</i> ('plastic-like')	24	56	20
12	<i>vogelähnlich</i> ('bird-like')	16	80	4
	<i>vogelartig</i> ('bird-like')	8	84	8
13	<i>zombieähnlich</i> ('zombie-like')	4	88	8
	<i>zombieartig</i> ('zombie-like')	10	84	6

Tab. 6: The meaning of adjectives with English *-like* (in %, N=50)

	ENGLISH <i>-like</i>	comparison	approximation	other/uncertain
1	<i>asthmalike</i>	4	96	0
2	<i>butterlike</i>	44	54	2
3	<i>meatlike</i>	40	58	2
4	<i>flulike</i>	4	94	2
5	<i>rubberlike</i>	22	76	2
6	<i>woodlike</i>	18	78	4
7	<i>honeylike</i>	46	44	10
8	<i>coffeelike</i>	40	54	6
9	<i>catlike</i>	30	58	12

10	<i>milklike</i>	14	82	4
11	<i>plasticlike</i>	10	84	6
12	<i>birdlike</i>	8	78	14
13	<i>zombielike</i>	14	64	22

Tab. 7: The meaning of adjectives with Dutch *-achtig* (in %, N=50)

	DUTCH <i>-achtig</i>	comparison	approximation	other/uncertain
1	<i>asthma-achtig</i> (N=0) ('asthma-like')	–	–	–
2	<i>boterachtig</i> ('butter-like')	42	46	12
3	<i>vleesachtig</i> ('meat-like')	38	54	8
4	<i>griepachtig</i> ('flu-like')	2	94	4
5	<i>rubberachtig</i> ('rubber-like')	32	66	2
6	<i>houtachtig</i> ('wood-like')	12	78	10
7	<i>honingachtig</i> ('honey-like')	66	28	6
8	<i>koffieachtig</i> (N=18) ('coffee-like')	56	39	5
9	<i>katachtig</i> ('cat-like')	10	84	6
10	<i>melkachtig</i> ('milk-like')	28	62	10
11	<i>plasticachtig</i> ('plastic-like')	26	64	10
12	<i>vogelachtig</i> ('bird-like')	10	84	6
13	<i>zombieachtig</i> ('zombie-like')	14	76	10

These results are somewhat inconclusive. They do not support our hypothesis of a systematic difference between the two word-formation patterns, i.e. *-ähnlich* mainly used for approximation and *-artig* mainly used for comparison. Instead, the distribution seems to obey other criteria and seems to be lexically driven in many cases. Overall, we found (for both patterns) much more approximation than comparison. The predicted distribution could only be proven for *Honig* ('honey') and *Kaffee* ('coffee'), both cases of 'real world approximation'. For instance, while *honigähnlich* ('honeylike') has a preference for the approximative interpretation (58% of the cases), *honigartig* ('honeylike') has this meaning in only 18% of the cases. For *fleischähnlich* ('meatlike'), however, the picture is clearly different, with the approximative reading in only 38% of all cases, which is almost identical to the distribution for *fleischartig* (with 34% approximative uses). Other base nouns form adjectives with a clear preference for the approximative use, like *gummiähnlich* (86%) or *gummiartig* (84%), both meaning *rubberlike* which is also mostly used approximatively in

English. Such cross-linguistic preferences for the approximative use can also be found in the case of *asthmalike* and *asthmaartig/asthmaähnlich* and for *birdlike* and *vogelartig/vogelähnlich*. Dutch *vogelachtig* joins this picture, but *asthma-achtig* does not occur at all.

We also found cases that ran contrary to our expectations: *woodlike*, *houtachtig* and *holzartig* are used approximatively in about three-fourth of the cases, while *holzähnlich* shows this reading in only half of the cases. *Holzartig* is, however, used in a particular collocation (*holzartige Biomasse* ‘the ligneous biomass’) in 19 out of 50 examples, which means this is not only a lexical but also a collocational effect (the combination with *Biomasse* does not occur with *holzähnlich*).

An important insight we gain from this little investigation is that the principle of isomorphism, according to which every linguistic form is ideally assigned a unique meaning or function, is at best an ideal, an example of linguistic wishful thinking. In reality, speakers often do not have any problems with synonymous forms. As far as our data allow this conclusion, this does not only concern the co-existence of single lexemes, but (also) of patterns. For the word-formation patterns with *-ähnlich* and *-artig*, there is no indication of the emergence of specific semantic niches, nor do the patterns block each other. Rather, the two patterns co-exist and in many cases show similar preferences of usage, which seems to be lexically determined.

Thus, in our data there are many synonymous uses of adjectives with *-artig* and *-ähnlich*. This can be illustrated by the following examples, where *kaffeeartig* and *kaffeeähnlich* show the same approximative reading:

- (34) Aus den ausgelösten und gerösteten Nüssen kann **ein kaffeeartiges Getränk** bereitet werden. Auch bei den amerikanischen Ureinwohnern waren Bucheckern als Nahrung weit verbreitet. (deTenTen13)
- ‘A coffee-like beverage can be prepared from the roasted nuts. Beech nuts were also widely used as food by Native Americans.’
- (35) Des Weiteren können die Samen geröstet werden und liefern dann **ein kaffeeähnliches Getränk**. Getrocknete Lupinensamen werden im Handel unter der Bezeichnung Tirmis vertrieben. (deTenTen13)
- ‘Furthermore, the seeds can be roasted and then provide a coffee-like beverage. Dried lupine seeds are sold commercially under the name Tirmis.’

In the above examples, it is clear that the beverages being discussed are not categorized as coffee. In (36)–(37), on the other hand, the boundary between coffee and non-coffee is blurred. Here, the beverages in question are characterized as not being ‘real’ coffee anymore because of the additional ingredients and because they are served cold. We analyze this as a ‘disproximative’ reading of the adjectives in the sense of Cappelle et al. (2023); see also example (33).

- (36) Im Café sitzen und einen Frappé (oder ein **anderes kaffeeartiges Getränk**) trinken ist eine Lieblingsbeschäftigung der Griechen.

‘Sitting in a café and drinking a frappé (or other coffee-like beverage) is a favorite pastime of Greeks.’

- (37) Starbucks hat seine erste Filiale in Seattle eröffnet (sie gehört zu den wichtigsten Sehenswürdigkeiten der Stadt) und von hier aus die ganze USA, und mittlerweile auch den Rest der Welt, mit Caramel Frappuccino, Iced Vanilla Latte und **anderen Kaffee-ähnlichen Getränken** überschwemmt.

‘Starbucks opened its first branch in Seattle (it is one of the city’s most important landmarks) and from here has flooded the entire U.S., and by now the rest of the world, with Caramel Frappuccino, Iced Vanilla Latte and other coffee-like beverages.’

The disproximative meaning makes these adjectives very suitable for expressive contexts and negative connotations, which becomes particularly clear in example (37). Even in such contexts, however, *-artig* and *-ähnlich* seem interchangeable. So far we have not been able to find a useful criterion for distinguishing them systematically.

5. Discussion

In order to answer our initial questions about the definition and distinction of approximation vs. comparison, we now discuss the hypotheses formulated in Section 3.

1. Approximativity is derived from similarity.

Unsurprisingly, the examples in the previous sections have shown that all approximative readings are at the same time also similitive, since approximation to a category presupposes similarity with this category. This connection is particularly clear since the markers at hand are similitive items. The similarity may relate either to the entire category or to single salient properties, both with or without referential identity.

2. Approximative patterns may be evaluative, comparative patterns are not.

As outlined in Section 2, the category of evaluation includes both more quantitative and objectively traceable as well as qualitative and subjective evaluations. Our hypothesis concerns the quantitative assessment of a category as very similar to another one. In other words, approximation can be used to express the extent to which one category approaches another, as is especially evident in cases such as *semi-*, *sub-*, *half-* etc. It can be reasonably argued that this meaning is not present in comparative patterns since the degree of similarity does not matter here but only the property to which the comparison refers. This is particularly obvious in comparative structures with a ‘tertium comparationis’ as in (26)–(29). Thus, our data seem to confirm hypothesis (2) since they do not explicitly denote the degree of similarity between the categories in question but just the fact that they are similar. However, some constructions with *-ähnlich* might have a quantitative evaluative flavor, due to the lexical meaning of this element, especially in contexts that suggest a high degree of similarity, such as in example (30), repeated here as (38):

- (38) Moleskin ist ein **samtähnlicher** Stoff, jedoch mit geringerer Florhöhe als Samt. (de-TenTen13)

‘Moleskin is a velvet-like fabric, but with a lower pile height than velvet.’

3. Approximation in the narrower sense is characterized by intentionality: Approximative formations explicitly reject to be X.

The criterion of intentionality and rejection seems to be restricted to approximative markers in the strict sense. Approximative patterns such as *simil-*, *fake-*, *pseudo-*, *quasi-*, *kunst-* etc. explicitly reject to be X. More precisely, the approximative marker (a) invokes the possibility that category identity might be present, while (b) at the same time clearly rejecting it (cf. Section 2). (Obviously, there are differences between the various left markers with respect to the exact nature of this pretending and negating, but this cannot be further addressed here, cf. e.g. Cappelle et al. 2023). Examples such as (39)–(40) show that this is not necessarily the case with comparative patterns: The dilution might be water or just similar to water, the particles might be viruses or just like viruses.

- (39) a. Insuman Infusat is een heldere en kleurloze oplossing voor injectie, met geen vaste deeltjes zichtbaar en een **waterachtige** consistentie.
 b. Insuman Infusat ist eine klare, farblose, **wässrige** Injektionslösung ohne sichtbare Teilchen.
 ‘Insuman Infusate is a clear, colorless, aqueous solution for injection without visible particles’
- (40) a. Es handelt sich um L1-Protein in Form von **virusähnlichen** Partikeln, ja, möglicherweise sogar um richtige Viren.
 b. Dit is L1 eiwit in de vorm van **virusachtige** deeltjes, mogelijk zelfs echte virussen.
 ‘It is L1 protein in the form of virus-like particles, possibly even real viruses.’

Thus, the patterns discussed here do not belong to this group. In fact, an explicit rejection of being X is not found in any of the examples discussed here.

4. There are markers that are exclusively approximative or comparative, as well as those that can be both, depending on the context.

All the comparative markers studied here (*-like*, *-ähnlich*, *-artig* and *-achtig*) also allow approximative readings. Our study suggests that the question whether they are predominantly used comparatively or with an approximative reading mainly depends on the respective base nouns. Thus, they are not exclusively comparative markers. This might, however, be different for other comparative markers such as *-haft* and *-mäßig* that were not in the focus of this study.

Note also that the markers investigated here are all suffixes or other kinds of right constituents. The finding that they are comparative markers which also allow approximative readings parallels English *-ish*, another suffix which has both a comparative and an approximative meaning (cf. Eitelmann et al. 2020: 805).

While neither exclusively approximative nor comparative markers have been attested in our study, we nevertheless assume that there are exclusively approximative markers, i.e. markers that have been referred to as ‘approximative markers in the strict sense’ above, e.g. *fake-*, *simil-*, *quasi-* etc. Although similarity is an essential part of their meaning, as argued before, they do not allow purely comparative readings.

5. Approximation is also possible for word-formation patterns with word class changes.

-like, *-ähnlich*, *-artig* and *-achtig* are head constituents and may change the word class, as in our data. They also allow approximative readings. Approximative readings are therefore also possible for patterns with a change of word class. At the same time, it has been found that approximative markers in the strict sense, i.e. markers that are exclusively approximative, are all left constituents and thus not word class changing.

6. There are also non-lexical approximative markers.

As argued above, non-lexical markers such as *-achtig* and *-artig* may have approximative readings (just as the English non-lexical marker *-ish*). On the other hand, approximative markers in the strict sense are all lexical markers. In this connection, it is interesting to review German *-artig* and *-ähnlich* and the respective differences since the latter is a lexical marker. Although the results of our pilot study indicate that there is no principled difference between *-artig* and *-ähnlich* with regard to comparative and approximative uses, it seems to us that approximative readings might be more easily available for *-ähnlich* than for *-artig*. This might have to do with the lexical meaning of *-ähnlich*: In addition to the comparative meaning ‘showing resemblance in certain qualities or characteristics’ (which does not say much about the degree of similarity, cf. hypothesis 2), *-ähnlich* can also be interpreted (also when used as an adjective) as ‘nearly but not exactly the same’, thus with a high degree of similarity and therefore approximatively.

6. Conclusion

The aim of our study was to contribute to a better understanding of the notion of (morphological) approximation. In particular, our aim was to delineate the notion of approximation from the notion of comparison and similarity. However, we have seen that this is only possible to a limited extent, at least with regard to the data examined here. Similarity, as shown, is a necessary part of the meaning of approximation, and comparative markers can have approximative readings.

In order not to dilute the notion of approximation and diminish its theoretical relevance, it might be better to reserve it for the entities that have been referred to here as “approximative markers in the strict sense” or to distinguish between approximative markers proper and those with an optional approximative readings, as in the present paper.

Approximative markers in the strict sense are left-headed, have lexical meaning, and explicitly express the rejection of category membership.

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