Non-morphemic word formation as an invitation to cognition.[1]
The role of recognition in word formation and language change

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This paper discusses four non-morphemic processes of word formation: clipping, suffix reinterpretation, libfixing and blending. It argues that recognition of common segments or of a model plays an essential role in these processes. Since these processes lead to new patterns, this study also shows how recognition can become a factor in language change. Zabrocki's theory of diacritical morphology is used in the analysis of the processes discussed. Especially his notion of confusivum – corresponding parts in different language forms – proves useful. Most of the data discussed in this study come from English.

Keywords: *non-morphemic word formation, language change, clipping, suffix reinterpretation, libfixing, blending*

1. Introduction

This paper discusses processes of word formation that receive little attention in traditional manuals because they do not fit within the classical framework of morphemic word formation. These processes can be called non-morphemic, since they are not morpheme based (cf. Fandrych 2004: 18).

In his classic work on English word formation, Marchand (1969²: 2-3) does mention that processes of non-morphemic word formation exist alongside normal word formation processes, which are based on the notions morpheme and motivation and which he calls grammatical. Examples of such non-grammatical processes of word-formation are for instance blending and clipping, processes which are also discussed here. Marchand argues, however, that they do not belong to the field of morphology because they cannot be analyzed in terms of constituent morphemes (Marchand 1969²: 441-454). Other handbooks such as Aronoff (1976), Bauer (1983), Spencer (1991), Štekauer (1998), Haspelmath (2002), Booij (2005) and Bauer et al. (2013) essentially all share Marchand's view. Plag (2003: 122-125) analyzes blending but not in a context of non-morphemic word formation. Schmid (2016³: 87-88, 211-223) does pay explicit attention to these word-formation processes. His analysis, however, focuses mainly on the conscious choice by which language users form these new words and on the expressive character of the outcome of these processes and less on how they come about. In his specialized study of neologisms, Schmid (2008) mainly focuses on the question of how neologisms can become established and which cognitive processes play a role in this.

In three important studies on non-morphemic word formation, Fandrych (2004, 2008a,b) mainly focuses on the question "how non-morphematic word-formation processes can be integrated into a comprehensive typology of word-formation processes" (Fandrych 2004: XI). She shows that non-morphemic word-formation can be integrated "into mainstream word-formation" (Fandrych 2004: XI) and can find a place in a word-formation taxonomy based on structural features (Fandrych 2004: 104). Fandrych and Schmid often use the term submorphemic in relation to non-morphemic word formation processes. This term is avoided here as it incorrectly suggests that the result of these processes automatically become

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morphemes in a subsequent step. For instance, the ending *-amping* from *camping* which one now finds in neologisms such as *glamping* (< glamorous camping) *flamping* (< flamboyant camping) and *gamping* (< gay camping or < garden camping) may finally become a suffix but it is highly unlikely that the also submorphemic parts *gl-* , *fl-* and *g-* will follow the same path.

The aim of this study, however, is different. This paper focuses on the role of recognition in the origin of non-morphemic word-formation processes. Since most of the processes discussed here lead to new patterns, they also cause language changes. Consequently, the role of recognition in language change is also dealt with.

1.1 *Recognition*

Traditionally, cognitive factors received little attention when it comes to the origin of word formation processes or to language change. Structural factors come first. In addition, incomplete intergenerational transmission and language contact appear to play an important role in language change. Recognition by the language user of segments and of patterns, however, turns out to be an underexposed factor. In the linguistic literature, one finds recognition or misinterpretation as a factor that plays a role in folk etymology. Folk etymology, however, has hardly been taken seriously as a systematic linguistic process. In the analysis presented here, recognition is a central notion. Recognition here refers to external or formal recognition. A few examples will clarify what is meant.

(1)   *edutainment*
         docutainment
         militainment

(2)   *ecopreneur*
         biopreneur
         solopreneur

How these words are formed is not described here. These processes are discussed in detail later in this contribution. What is at issue here is the process of recognition of segments in one or more source words.

The forms in (1) all contain a part *-tainment*, which originates from the source word *entertainment*. Since *entertainment* contains a part *enter* "naïve" language users may recognize the form of this part because they know the word *enter*. Consequently they appear to think that the source word *entertainment* is, what Marchand (1969²) calls, a *syntagma* and thus exists of two parts *enter* and *tainment*. Subsequently, this last part can be used to produce new formations as the ones presented in (1). A similar process of recognition takes place in (2). The source word here is, of course, *entrepreneur*. This word shares a first part with the data in (3).

(3)   *entrepot*
         entremets
         entresol
         entrecote

Although these words are all infrequent and have a smell of foreignness around them, just like *entrepreneur*, the "naïve" language user recognizes an identical part *entre* in this series, which

must therefore be something. Consequently, the word *entrepreneur* can also be seen as a syntagm and divided in *entre* en *preneur*, which then leads to examples such as those presented in (2). Recognition, as used here, has no primary relation to the semantic aspects of the source word or set of similar words. It involves formal similarity. Recognition searches for formally identical parts of words. It is only when the identical part is subsequently used productively in word formation that it appears to have retained (part of the) the meaning of the root word: *-tainment* refers to TV-formats in which amusement also plays an important role and *-preneur* to a person who is active in a certain business.

One last question remains, and that is whether recognition should not be equated to reinterpretation or misinterpretation. This is not the case. Recognition precedes reinterpretation: first comes perception, which leads to recognition, followed by a correct or incorrect interpretation.

The term "naïve" language user has been deliberately used above. This is because an educated speaker or a linguistically trained language user knows, for example, that the *enter* part in *entertainment* is not identical to the homophonous verb. A "naïve" language user is therefore a native speaker of a language without much linguistic knowledge. One could also use the term ordinary language user, but because this designation is ambiguous, "naïve" language user is preferred.

1.2 *Four processes*

Four non-morphemic word-formation processes will be discussed in the remainder of this study:
- Clipping/embellished clipping/pseudo-embellished clipping
- Suffix reinterpretation
- Libfixing
- Blending

As an aside, some examples of English diminutives and English and German hypocoristic forms are also being examined, when dealing with clipped forms.

At the end of this paper the question will be answered whether the analysis presented here should not be seen as a form of analogy.

The data presented in this contribution largely come from English, although some examples from Afrikaans, Dutch, German, and Polish will also be given. The data are found in the literature or come from targeted searches on the internet. No attempt has been made to experimentally substantiate the hypothesis presented here that recognition plays an essential role in the emergence of new non-morphemic word formation processes. This study aims to draw attention to recognition as a cognitive factor. Later experimental research can further substantiate this hypothesis.

For the sake of completeness: in this contribution it is often suggested that the language develops or takes steps. This is, of course, metaphorical language.

1.3 *Confusivum*

Before starting the investigation of the phenomena, it may be helpful to provide some explanation of the specific terminology used; especially the term *confusivum* may need some introduction. It was the Polish linguist Ludwik Zabrocki (1962, 1969) who introduced this notion as part of his theory of diacritical morphology or diacrisis. As a reaction to the Prague

school of phonology, he wanted to identify the perceptual differences and similarities between two language forms. For him, it is not the distinctive function of phonemes in minimal pairs that turns out to be essential but the opposition between members of what can be called diacritic paradigms as in (4) and (5).

(4)   Polish   gloss
        dom   'house'
        grom   'thunder'
        prom   'ferry'
        złom   'scrap'
        atom   'atom'

(5)   Dutch   gloss
        dom   'stupid'
        stom   'dumb', 'stupid'
        brom   'hum'
        blom   'flower'
        krom   'curved'

The procedure Zabrocki follows does not essentially differ from that of the traditional Prague minimal pair comparison. He searches for similarities and differences in a paradigm. In both diacritic paradigms *-om* appears to be the identical part. Such an identical segment is called a *confusivum*. The different parts are the so-called *diffusiva*. According to Zabrocki, a *confusivum* has a certain reality to *naïve* speakers. They recognize identical parts in different language forms, even when there is no formal or historical relationship between these forms. Often they reanalyze new forms on the basis of such recognized confusive elements, as will be shown in this paper. Zabrocki's diacritical morphology formed the basis for a number of distributional phonological studies (for instance Awedykowa 1981). However, here the emphasis is on another aspect of his theory, recognition, and extends the effectiveness of the theory to non-morphemic word formation and language change. The framework in which the notion *confusivum* is claimed to play an essential role here is that of non-morphemic word formation, this is word formation without morphemes.

2. Clipping

In this section, I will show how a common segment in disyllabic clipped forms with final *-o* is recognized by naïve speakers and subsequently used in a new process of word formation. Before discussing these examples, however, some attention should first be paid to traditional clipping and to a somewhat similar process involving disyllabic forms in which clipping occurs. Because the outcome of this last process shows similarities with diminutive formation and the formation of hypocoristic forms, aspects of this are also discussed as an aside.

2.1 *Traditional clipping*

Clipping is making new words by shortening longer ones (Kreidler 1979). Clipping is a non-morphemic word-formation process which is best described as a derivational process since

clipped forms are always truncated from longer full forms. Traditionally, clipping leads to a monosyllabic word (see the examples presented in Marchand 1969², 441-450), usually a CVC form, but the onset and coda can also be empty or consist of multiple consonants as some of the examples (6)-(8) show.[2] This pattern is called traditional clipping in the present study.

Marchand (1969²: 441-448) designed a taxonomy of different formal types of traditional clipping.

(6) back clipping
sax < *saxophone*
nip(s) < *nipples*
tute < *tutor*

(7) fore clipping
coon < *racoon*
droid < *android*
plane < *airplane*

(8) middle clipping
flu < *influenza*
jams < *pyjamas*
script < *prescription*

This is not the place for an extensive discussion of these different forms of clipping, see Hamans (2018, 2020, 2021a: 93-99) for detailed discussions. Suffice it to note that truncation does not appear to operate systematically at first glance. Sometimes the clipped part turns out to be a word, sometimes it consists of (parts of) one or more syllables and sometimes of a segment that cannot systematically be described. The output of the traditional clipping process, however, is almost always a monosyllabic word based on a CVC template. Therefore, the conclusion must be that clipping is an output oriented process.

The literature then shows that back-clipping, which is clipping from right to left, is the normal pattern of this traditional truncation process, not only in English, but also in languages such as French and Dutch. In the processes that follow back clipping is the only option.

Elaborating on Zabrocki's theory of diacrisis, one may conclude that the naïve language user does not recognize a common segment in the data presented in (6)-(8), but notices that they appear to share formal aspects: they share a common template, which is filled as a CVC monosyllabic word that results from a shortening process and that additionally belongs to a different, more colloquial register than the original source word. Thus, the *confusivum* is of a formal nature here.

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[2] Two-syllabic clippings also occur, as one reviewer rightly points out. For instance, *delish* < delicious, *vacay*< vacation and *exam* < examination. Hamans (2021a: 142-143) notices that "instances of polysyllabic clipped forms ending in a CVC syllable are difficult to find, which can be taken as evidence for the claim that the normal pattern of traditional clipping in English is CVC." In most of these cases, clipping takes place after a stressed syllable, however, not necessarily the syllable with main stress. "Most of these polysyllabic clipped forms have stress on the second syllable," see for instance *exam* < examination and *celeb* < celebrity. "Maybe one could suggest that the first part of these examples is unparsed. In that case they satisfy the CVC constraint." Since the aim of this study is not to analyze in detail mono- and polysyllabic CVC clippings, I refrain from further investigation of these data.

2.2 *Embellished clipping*

The term embellished clipping is introduced by Bauer and Huddleston (2002: 1632) for clipped forms that are extended by a suffix or a suffix-like segment. Their final form is disyllabic as the examples   presented in (9) and (10) show.

(9)   embellished clipping (independent clipped noun attested)
        embellished clipping   full form   clipped noun
            bevvy   <   *beverage*   *bev*
            sissy   <   *sister*   *sis*
            ciggie   <   *cigarette*   *cig*

(10)   embellished clipping (independent clipped noun not attested)
        embellished clipping   full form   * not attested form
            commie   <   *communist*   **com*
            hanky   <   *handkerchief*   **hank*
            granny   <   *grandmother*   *?gran*

Most likely, the *-ie/-y* suffix operating here has its origin in the endearment reading of the similar diminutive suffix.

The data presented in (9) suggest that first a traditional clipping process as described above in par. 2.1 has taken place followed by an optional process of suffixation. The examples of (10), however, show that suffixation is mandatory here. Anyway, part of the word formation process is clipping into a CVC form. In any case, a "naïve" language user notices when observing embellished clippings that the final form consists of a clipped part, which may or may not occur independently, and a suffix.

The examples presented in (9) and (10) share a *confusivum* which consists of several elements:
- a common suffixal segment *-y/-ie*, which corresponds to Zabrocki's substantial *confusivum*
- a common CVC template of the part preceding the suffix, which is the result of a clipping process
- a common trochaic metric pattern

In addition, all final forms belong to a colloquial register. Perhaps, the register should not be seen as a separate common feature here, but as a consequence of clipping, thus belonging to the second aspect of the *confusivum*. After all, clipping initially leads to the final form being informal. Because a precise positioning of this aspect is unimportant to the present research, which focusses on formal characteristics, this positioning is not discussed in more detail here, especially since the suffix may express endearment and can therefore also cause a change of register.

2.3 *Pseudo-embellished clipping*

Pseudo-embellished clippings are:

(11) *bloky*   *< bloke*
      foody   *< food*
      chappie   *< chap*[3]

Pseudo-embellished clippings are disyllabic forms consisting of a monosyllabic word followed by a suffix or suffix-like segment also used to form embellished clippings. The term pseudo-embellished clipping may cause confusion, because the source words of the forms presented in (11) are not shortened. The starting point is a full noun, e.g. *bloke*, *food* and *chap*. However, since there is such a clear parallel with the pattern of embellished clippings, this term is still preferred over the perhaps more insightful embellished pseudo-clippings.

It is striking that pseudo-embellished clippings find their starting point in monosyllabic CVC nouns. The final pattern is again a trochee, which is the most preferred word form in English (and Dutch, Afrikaans, German etc.). Apparently, they follow the pattern, or the model, of embellished clippings. It looks as if the "naïve" language user internalized the model of embellished clippings and implemented it here. Theoretically, however, it could have been the other way around as well: the "naïve" language user may have started with the pseudo-embellished pattern, thus suffixation of monosyllabic CVC nouns and may have implemented this pattern in the case of embellished clipped forms. Examples with final *-o* which will be discussed later make this unlikely. [4] The *confusivum* of these pseudo-embellished clippings consists of:
-   a common segment *-y/-ie*
-   a common CVC template of the part preceding the suffix
-   a common trochaic metric pattern

Pseudo-embellished clippings, like real embellished clippings, are part of an informal register. Whether the informal or even colloquial character of these words is an effect of the resemblance with embellished clippings or results from the suffix will not be discussed here, since the focus of this study is on the more formal aspects of clipped and pseudo-clipped forms.

2.4 *Diminutive formation*

'By comparison with other languages English has rather limited morphological means for creating diminutive formation,' (Dixon 2014: 171) rightly notices. Actually, there is only one

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[3] Originally *chap* is a clipped form of the now obsolete word *chapman*.

[4] A reviewer prefers this second option and so wants to consider suffixing with *-y/-ie* as the default pattern, meaning *foody* and *chappie* as a starting point. Subsequently, this pattern would have been applied to clipped forms and led to embellished clippings, so to *bevvy* and *commie*. This explanation runs into problems:
 - the number of dates comparable to *foody* and *chappie* is very limited and much smaller than that of embellished clippings. Generalization from such a small amount of data is unlikely
- if the suffixation pattern must have extended to clipped forms, the examples in (10) cannot be explained, since there are no independent monosyllabic forms of these forms
- in the (pseudo-) embellished forms with final *-o* to be discussed below, there is no suffixation with -o that can be regarded as default in the same way as those with the diminutive, endearment or hypocoristic suffix *-y/-ie*.

more or less productive diminutive suffix in English *-y* and its orthographic and allomorphic variants (Dixon 2014: 173).[5]

(12) *doggy*   <   *dog*
      piggy   <   *pig*
      mousy   <   *mouse*

It is worth noting that the source words from which English diminutives are derived are mainly monosyllabic. Moreover, one must conclude that the examples presented here are most often used as terms of endearment, which makes the suggestion presented above (§2.2) that the embellishment suffix comes from the diminutive suffix very plausible. What is also striking is that the output form corresponds in terms of trochaic, rhythmic pattern with that of (pseudo-)embellished clippings. The *confusivum* of these diminutives consists of:
   - a common segment *-y/-ie*
   - a common CVC template of the part preceding the suffix
   - a common trochaic metric pattern
   - being part of a colloquial register

2.5 *Hypocoristics*

Due to the frequent endearment reading of diminutives, it is not surprising to find the suffix *-y* in hypocoristics.

(13) *Andy*   <   *Andrew*
      Debbie   <   *Deborah*
      Monty   <   *Montgomery*

The word-formation process here is similar to that of embellished clippings: first truncation to a CVC syllable and subsequently mandatory suffixation. The output is again a trochee. Taken together, this leads to the *confusivum* being composed of
   - a common segment *-y/-ie*, which corresponds to Zabrocki's substantial *confusivum*
   - a common CVC template of the part preceding the suffix, which is the result of a clipping process
   - a trochaic metric pattern
   - the final form belongs to a colloquial register[6]

   The conclusion so far must be that there is a direct formal relation for the "naïve" language user between hypocoristics, diminutives, and (pseudo-)embellished clippings, since the confusiva of the forms produced by this word-formation processes are the same or almost

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[5] As both reviewers rightly point out, there are more diminutive suffixes in English, for instance *-ette* (kitchenette), *-let* (droplet), *-kin* (lambkin). Since the productivity of these suffixes is marginal, I prefer to agree with Dixon's view (Dixon 2014: 173).
[6] A reviewer rightly points out that "hypocoristics are not necessarily *only* colloquial (emphasis added). In some cases, the hypocoristic becomes the public name of an individual. For example, Chris (Christine) Evert, Rafa (Rafael) Nadal, Tom (Thomas) Cruise, Chris (Christopher) Hemsworth, Johnny (John) Depp, and others." Indeed, hypocoristic forms can ascend from an informal to a generally accepted language register.

the same. The difference is that diminutives and pseudo-embellished clippings are not the result of clipping, whereas hypocoristic formation and embellished clipping are.

2.6 *Examples from German and from Afrikaans*

The processes described so far are not exclusive to English. In German for instance, one finds a similar process in the case of hypocoristics, where mandatory suffixation follows truncation to a CVC monosyllable.

(14)   First names hypocoristics
Heini	<	*Heinrich*
Ulli	<	*Ulrich*
Peti	<	*Peter*

(15)   Family names hypocoristics
Schumi	<	*Schumacher*
Gorbi	<	*Gorbachev*
Honni	<	*Honnecker*

It is not unlikely that the German hypocoristic *-i* suffix also comes from a diminutive suffix in its endearment reading. Balnat (2011: 76), however, points to an influence from English. The process operating here is similar to that described for English hypocoristics as in (13) and for embellished clippings as in (10). However, German goes one step further than English when it comes to hypocoristic forms. The extension of the process runs parallel to the formation of pseudo-embellished clippings as in (11): the word-formation process takes a name consisting of one CVC syllable as its starting point.

(16)   Monosyllabic family names + *-i*
Schmitti	<	*Schmitt*
Krammi	<	*Kramm*
Frahmi	<	*Frahm*

Again, the "naïve" language user recognizes similarities in these three series (14)-(16). In (14) and (15) the *confusivum* consists of
- a common suffix *-i*
- a common CVC template of the part preceding the suffix, which is the result of a clipping process
- a common trochaic metric pattern
- being part of a colloquial register

The *confusivum* of (16) at the one hand and (14) and (15) at the other is the same as the *confusivum* described above, except that the CVC form is not the result of a clipping process. The fact that a similar word formation process can be used to form the hypocoristics in (16) shows that a preceding clipping process is not essential for the "naïve" language user.
A development similar to that of English clippings and (pseudo-) embellished clippings can be found in Afrikaans, where one comes across traditional clipped CVC forms as in (17) (Combrink 1990: 56, 343) next to embellished clippings (18) (Combrink 1990: 73) and pseudo-

embellished clippings (19). In Afrikaans, suffixation is compulsory to produce embellished clippings, see (18).

(17)   traditional clipping
       dok   <   *dokter*   *'medical doctor'*
       doom   <   *dominee*   *'minister'*
       kam   <   *kamermaat*   *'room mate'*

(18)   embellished clipping
       moffie   <   *mofskaap*   *'faggot'*   **mof*
       onnie   <   *onderwyser*   *'teacher'*   **on*
       wesie   <   *weeskind*   *'orphan'*   **wees*

(19)   pseudo-embellished clippings
       bergie   *'hobo'*   <   *berg*   *'mountain'[7]*
       dronkie   *'drunkard'*   <   *dronk*   *'drunkard'*
       soutie   *'Brit'*   <   *soutepiel*   *'salt dick'[8]*

The *confusivum* of the forms in (17) corresponds to the *confusivum* of the examples presented in (6)-(8). It is
- based on a CVC template, which is the result of a clipping process,
- belongs to an informal register.

The data in (18) share a *confusivum* which partially runs parallel to that of (17). The first part of the final form is filled by a CVC syllable, which is the result of a clipping process. The output form also belongs to an informal register.

       In addition, the *confusivum* of (18) consists of
- a common final suffix *-ie,*
- a common trochaic metric pattern.

The difference in confusiva of (18) and (19) is solely based on the fact that in (19) truncation appears not to be necessary.

2.7 Disyllabic clipped forms with final -o[9]

Recently, a new clipping process emerged in (American) English.[10] The first examples were clipped forms with a final *-o* that came from original long words.

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[7] A first group of hobo's lived at the Tafelberg, the mountain overlooking Cape Town.
[8] Here only the adjective *sout* 'salt' functions as the source word. Britons living in South Africa were supposed to still have one leg in the UK and the other in South Africa. Therefore, their *piel* 'penis' was thought to hang in the salt ocean.
[9] For an extensive discussion of this phenomenon see Hamans (2018)
[10] See for more details Hamans (2021a: 115-120).

(20)   disyllabic clippings
    psycho   <   *psychopath*
    homo   <   *homosexual*
    dipso   <   *dipsomaniac*

As before in the case of final *-y/-ie*, the "naïve" language user recognizes common elements in the data presented here. This *confusivum* again consists here of a substantial part and of formal aspects:
- the final *-o*
- the trochaic disyllable, which is the result of truncation of a longer word
- the reference to a human being
- the informal register

This final *-o* looks as if it were a suffix. In addition, the various corresponding features of the *confusivum* are related. For the "naïve" language user, final *-o* in a clipped environment thus implies the other features and can therefore be used productively as a sort of a suffix with the same effect, as the data in (21) shows. In other words, the "naïve" language user assigns a certain morphological status to the common segment *-o* and extrapolates on the basis thereof to a productive use.

(21)   embellished clippings
    afro   <   *African*
    lesbo   <   *lesbian*
    relo   <   *relative*

The *confusivum* here is:
- the final *-o*
- the common CVC template of the part preceding the suffix-like *-o*, which is the result of a clipping process
- the trochaic pattern
- the feature [+ human]
- the informal register

Just as the "naïve" language user no longer followed the condition of a clipped form in the examples (11), (16) and (19), so did he when producing pseudo-embellished clippings with an *-o* suffix as in (22). Now *-o* can be used as a normal suffix. The *confusivum* of the data in (22) corresponds with that of (21), except that clipping is no longer a requirement.

(22)   pseudo-embellished clippings
    sicko   <   *sick*
    creepo   <   *creep*
    kiddo   <   *kid*[11]

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[11] While final *-o* has a pejorative meaning in most of the cases presented above, *kiddo* does not. In this case, it is rather an endearment reading, which may be the result of a frequent familiar use of the form. In the case of *lesbo*, a change of meaning has occurred. Originally the term was pejorative, now it is a badge of honour.

2.8 Conclusion

The examples presented so far show what the language user does when he comes across new words or new series of corresponding words: he recognizes common elements in corresponding patterns and then starts to extrapolate the use of these elements in environments that resemble the original pattern, which leads to a new productive process of word formation and to changes in the language system.

3. Suffix reinterpretation

A similar process of recognition is found in the case of suffix reinterpretation.

(23)   suffix *-logy*
       biology
       theology
       geology
       pathology
       etymology

(24)   suffix *-ology*
       virology
       horology
       futurology
       Assyriology
       Kremlinology

(25)   suffix *-cide*
       homicide
       suicide
       patricide
       filicide
       regicide

(26)   suffix *-icide*
       Czaricide
       feticide
       infanticide
       adulticide
       aborticide

(27)   suffix *-ticide*
       hospiticide
       scabieticide

The examples above show how the boundary of a suffix can shift. Since here a reanalysis of the suffix boundary takes place after an initial recognition of a *confusivum* which is longer than

the original suffix, I call this phenomenon suffix reinterpretation. It is not difficult to determine what the language user here perceives as common parts, thus as a *confusivum*. In (23), the *confusivum* is the dactylic segment *-ólogy*, whereas the suffix is *-logy*, *-o-* etymologically belonging to the first part. Since this *confusivum* seems to fulfil the same morpho-semantic role, the language user assigns a grammatical status to this *confusivum* and starts to productively use it as a new suffix or more precisely as an allomorph of the original suffix.

In (25) the original suffix is *-cide,* the *confusivum*, however, is *-icide* which is preceded by a stressed syllable, such as *hóm*, *sú*, *fíl* and *rég.* Again, the language uses starts to productively use the newly found common part as if it was a suffix, as the examples in (26) show. Since the last four examples of (26) show a new common part *-ticide*, the next step is to assign grammatical status to this *confusivum* in order to use it as a new a suffix (27). It is remarkable that the new suffix does no longer require a preceding stressed syllable, as the stress pattern of *hóspticide* shows. In *scábieticide* secondary stress falls on the syllable preceding the new suffix *-ticide*. Because of this change of stress condition, one better does not call *-ticide* an allomorph of the original suffix *-icide*.

3.1 *Linking vowel*

One may argue that the *-o-* in (24) and the *-i-* in (26) is better described as a linking vowel between a root and a suffix or suffix-like segment. Although forms such as *virlogy* and *Czarcide* seem not to be excluded, the consonant or syllable clash at the border between root and suffix is clearly not preferred. Hamans (2021: 65) has taken a closer look at this proposal and discussed similar examples in Dutch.

(28)	*ecoloog*	'ecologist'	(29)	*bleekloog*	'hypochlorite'
	opsoloog	'fish expert'		*etsloog*	'etching solution'
	natronloog	'caustic soda'		*Kremlinoloog*	'Kremlinologist'

These examples show that there is no phonological need for a linking vowel. However, one must admit that the examples in (28) are derived forms, whereas these of (29) are compounds, each with their own stress pattern. Compounds with *-loog* (29) bear stress on the first part, whereas the main stress is on the final syllable in the derived data of (28).

If *-o-* and *-i-* are linking vowels in (24) and (26), one has still to explain why especially these vowels are chosen. Another, suprasegmental, explanation could be that the language user copies the metric pattern of the original forms, thus of the data presented in (23) and (25) respectively. The last three syllables of all forms presented in (23) and (25) exhibit a dactylic pattern.

(23a)   s w w   (25a)   s   w   w
          bi-o-lo- gy   *ho-mi-cide*

A language user who takes this pattern as a model for new formations, correctly produces (24a).

(24a)   s w w
          vi ro lo gy

Since the second syllable must be strong, this syllable must contain a full vowel. Due to the model *biology, theology* etc. a choice for *-o-* is obvious. In the case of *Czaricide* such a solution runs into problems.

(26a)   s w w
          Cza-ri-ci-de

In a language such as Dutch, where unstressed syllables are easily reduced to schwa, one would expect a form like *Czarəcide*, thus with a schwa instead of the full vowel *-i-*. However, such a pronunciation is excluded.

Finally, an explanation with *-i-* as linking vowel leaves unexplained how the forms in (27), where the final part consists of the segment *-ticide*, originated.

3.2 *Conclusion*

The "naïve" language user starts with the recognition of a *confusivum* in a paradigm of similar forms, subsequently he assigns morphological status to this *confusivum*, which in turn offers him the opportunity to finally use this new morpheme productively. Though the introduction of a new suffix or a new allomorph of a suffix is only a small step, it is in fact an addition to the language system, thus a change of it.

4. Libfixing

The term libfix is coined by Zwicky (2010) and refers to bound segments of opaque structures that do not have any morphological status but that can be *liberated*. Traditionally the term splinter has been used for such non-morphemic portions of words that have been split off (Bauer et al. 2013: 19, 525). Since the term splinter focuses on the result of the process of splitting and not on the morphological potential of this part, the term libfix is preferred here.

4.1 *Recognition of a part*

In the analysis that follows, two different types of source words will be distinguished, the first being source words in which an existing word can be recognized, a second category in which this is not possible. The following examples come from Marchand (1969²: 211- 213).

(30)   formations with *-scape*   (31)   formations with *-cade*
        landscape   *cavalcade*
        seascape   *autocade*
        mindscape   *aquacade*
        soundscape   *motorcade*
        memoryscape   *camelcade*

Landscape was originally an opaque form, borrowed from Dutch to describe a painting representing an inland natural scenery. The "naïve" English language user, however, recognized the part *land*, a *confusivum* with the English noun *land.* Thus, he reinterpreted *landscape* and concluded that it was possibly a compound or a derived word, whereby he

automatically assigned morphological status and meaning to *scape*. The status and meaning assignment then offered the possibility of new formations. First the new forms strictly followed the model of *landscape* – thus a monosyllabic word as the first part – but at some stage this condition became weakened as the example *memoryscape* shows.

"The word *cavalcade* was re-interpreted as containing the element *caval-* 'horse' [as in *cavalry* CH] and the suffix *-cade*" (Marchand 1969²: 212). Due to the recognition of the *confusivum caval-*, the remaining portion was also assigned a morphological status and the meaning 'procession, parade', which came to be used to contribute these aspects to the new formations *autocade* etc.

4.2 *Completely opaque forms*

In the two examples discussed above, the language user has possibly mistakenly recognized a part that he already knows from elsewhere in the language. Zwicky (2010), however, points to libfixes that have been consciously and deliberately extracted from a larger opaque word by a language user as in (32)-(34).

(32)	-pocalypse	(33)	-iversary	(34)	*-(ma)geddon*
	apocalypse		*anniversary*		*Armageddon*
	snowpocalypse		*monthiversary*		*snowmageddon*
	heatpocalypse		*blogiversary*		*carmageddon*
	Trumpocalypse		*friendiversary*		*Obamageddon*

At first glance, there is no question of a *confusivum*. The words *apocalypse*, *anniversary* and *Armageddon* do not have a part in common with other words. They are simply segmented by a conscious language user into two parts as if they were not opaque but the result of a word formation process. Thus into *a-pocalypse*, *ann-iversary* and *ar-mageddon*, where the last part is the libfix. Subsequently this final part, the libfix, has been introduced as a possible suffix-like formation. See *snow + -pocalypse*, *month + -iversary*, *snow + -mageddon* etc.

However, the data in (32)-(34) show that the language user still relates the libfix to the original word, which is also a form of recognition. He not only transferred the meaning of the original form to the libfix, he also retains the original syllabic and especially the metric form. For instance, *-pocalypse* forms a *confusivum* with its source word *apocalypse* and therefore can only take a stressed monosyllable as its first part. *Obamageddon* seems to be an exception. However, the extra initial syllable, *o-*, is unstressed and possibly unparsed. Thus, the original (left to right) stress pattern is maintained.

An example like *hasthtagiversary* seems to contradict this analysis. It is not unlikely, however, that this example is a next step in the word-formation process, where original conditions can be overridden, as we have also seen before (cf. 11, 16, 19, 22, 27 and the example *memoryscape*).

4.3 *Conclusion*

Whether a libfix is created by resemblance with an existing word or by conscious liberation, the result is the same. The language user recognizes the original word through the libfix and follows the model of this word in the new word formation process. Formally speaking, the

language user assigns to the libfix the meaning of the original word, a morphological, and a prosodic status. This is then used in productive word-forming processes.

5. Blends

Blending is the final non-morphemic word-formation process presented here in support of the claim that recognition can be an essential aspect of word-formation and language change. In other words, blends follow the example of a model. Due to limitations of space, it will not be argued here in detail that blending is a regular process and how blending works (see Hamans 2021a: 157-238, Hamans 2021b), here the emphasis is on the recognition aspects.

  Lexical blending may be defined as "a word-formation process that combines two or more source words into a single form, called *blend*, losing some phonological material in the process" (Moreton et al. 2017: 349).[12] The length of this phonological material can differ, as the data in (32) and (33) show. Because of this reason blending is often seen as unsystematic and unpredictable.

(35) *smog*   *< smoke* *+ fog*
    brunch *< breakfast* *+ lunch*
    glamping *< glamourous + camping*

(36) *Norglish* *< Norwegian + English*
    Oxbridge *< Oxford* *+ Cambridge*
    stagflation *< stagnation* *+ inflation*

In (35) the phonological material consists of one or more phonemes of the onset whereas in (36) blending affects syllables.

5.1 *Systematic aspects of blend formation*

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[12] One reviewer points out that the definition of blending given here is questionable since it takes only phonological aspects into account. He misses the fact that it is not mentioned that in many cases syllable or morpheme boundaries are ignored in blending, that very often there is overlap between the two constituents and that one of the most salient characteristics of blends is that the blending on the formal/structural level is reflected on the semantic level. It is correct that blending ignores morphological boundaries and that is why blending is discussed here as an instance of non-morphemic word formation. However, blending does take into account syllable boundaries or internal syllabic boundaries as the examples (34) and (33) respectively show and as the analysis in (40) demonstrates. Overlap appears not to be a condition for blending, as Hamans (2021: 208-210) shows in the discussion of Grésillon (1984: 15) and Fradin (2000: 27). The examples presented here conform this claim. Even the example given by the reviewer himself, *smog*, shows no overlap. It is the orthographic similarity between *smoke* and *fog* that leads to confusion. Phonologically there is absolutely no overlap. The claim that there is a parallel between the formal structure of blends and their meaning or more precisely their reference (see also Thornton 1993: 152; Frandrych 2008: 712; Kastovsky 2009: 11-12; Mattiello 2013: 135) is only partially correct. Blends such as *Oxbridge* and *stagflation* can be compared to copulative or dvanda compounds and thus show a parallel between formal and semantic properties. Other blends such as *glamping* or *flexitarian* exhibit an endocentric semantic relation between the constituents. Therefore, they cannot be defined as reflecting the structural level at the semantic level. The referents of these "endocentric" blends are not crossbreeds of two individual concepts or creatures, whereas *liger* or *tigon*, being offspring of a tiger and a lion, are. Another observation made by the reviewer, that blends have a high attention value due to their structure and are therefore often used in journalism and commerce, is undeniably correct, but does not shed light on the word-formation process by which blends are formed.

Despite this apparent irregularity, it can be established that blend formation follows a fixed system. Blends consist of parts of two words, source word1, sw1, and source word 2, sw2. Blends take the first part of sw1 and the final part of sw2 (Plag 2003: 123):

(37)   *advertisement + editorial → advertorial*
        A   B   C   D   A   D

Blends also exhibit a head. Take for examples the Dutch blend *potel* or the German *Sportel* or the English *malware*.

(38)   *(de) Polen   + (het) hotel   → (het) potel*   'hotel for Polish workers'

(39)   *(die) Sport   + (das Hotel) → (das) Sportel*   'hotel for sportsmen'

(40)   *malicious   + software   → malware*

In all three examples sw2 appears to be the semantic head. A *potel* is a hotel, just at the *Sportel* and *malware* is a sort of software. Formally sw2 is also the head. In (38) *potel* takes the neuter gender (*het*) of *hotel*, just as the number (singular of *hotel*, whereas *de Polen* is plural). Also *Sportel* takes the gender of sw2. In (40), *malware* takes the part of speech of sw2, which is a noun, whereas sw1, *malicious*, is an adjective.

Moreover, blends take the stress pattern of sw2.

(41)   blend   <   sw1   + sw2
        boatél   <   *boat*   + *hotél*
        advertórial   <   *advértisement* + *editórial*
        fertigátion   <   *fértilizer*   + *irrigátion*

Blends also take the syllabic pattern of sw2 or in other words as much syllabic material as is deleted from sw2 must be inserted from sw1.

(42)   sw1   + sw2   → blend
        breakfast   + *lunch*   → *brunch*   (onset deleted of sw2)
        Spanish   + *English*   → *Spanglish* (empty onset + nucleus deleted of sw2)
        Oxford   + *Cambridge*   → *Oxbridge* (σ deleted of sw2)
        flexible   + *vegetarian* → *flexitarian* (σσ deleted from sw2)

The data in (42) show how the process of blending works. It starts with the head, which is sw2. Since sw2 provides the final part of the blend, the final part of sw2 aligns to the right edge of the final blend. Since the blend takes the stress pattern of sw2, the stressed syllable of sw2 must be part of the resulting blend. However, the segmental content of this stressed syllable may be deleted, see *Spanglish* and *Oxbridge*. Actually, this means that the syllabic skeleton of sw2 is retained. Finally, the slots of sw2 that have become empty through deletion must be filled with corresponding syllabic material of sw1.

5.2 The role of the confusivum

When the language user produces a blend, whether he does this consciously or unconsciously does not seem to matter, he takes a sw2, deletes unnecessary parts but still keeps the original structure of sw2 in mind to fill the empty slots with corresponding material from sw1. In order to understand the newly coined blend the listener must recognize sw2 as the structural model of the new word. Subsequently he must be able to recognize sw1 from the often very short first part of the blend. Basically, he needs to recognize first the *confusivum* of the blend and sw2 and then the blend's *confusivum* and sw1. In the words of Frandrych (2004: 25): "Phonologically, blends evoke both words from which they draw." This process of evocation must be based on recognition, which impliesPP on 'confusiva'.

　　　Blends, thus, consist of a concatenation of two 'confusiva'. Apparently, the *confusivum* with sw2 is the most prominent part of a blend. This is the part by which the listener recognizes the original source word, also because it is the head of the new formation. Moreover, since this *confusivum* not only contains phonological material but also the formal syllable structure and the stress pattern of sw2, the language user recognizes this source word in all respects. The confusivum with sw1 plays a less prominent role, since it can only fill the deleted segments of sw2. However, since this confusivum is the beginning of the first source word, this segment gives a clear clue to recognition and interpretation.

5.3 Conclusion

Again, recognition of common parts appears to be essential for the interpretation of blends. In terms of production, thus as a word formation process, following a model appears to be essential, just as is the case with libfixing. The language user takes the appropriate part of sw2, a 'maximal' confusivum, but keeps the structure of the full sw2 in mind and uses this structure as basis for the word-formation process.

6. Analogy

The question now remains whether Zabrocki's theory of diacrisis and especially the extension to his theory presented here should not be considered as a form of analogy. If one understands analogy as looking for a pattern, then diacrisis is analogy as its best. As Fischer (2010: 284) puts it in her discussion of analogy:

> *Pattern-finding begins in animals and humans with an awareness of iconic relations (similarities and differences) between one object and another, and with learning the indexical relation between an object and its function/use (...). In a next stage, the repeated correlation between an object and its use leads to a higher-order level of iconicity and indexicality.*

The process Fischer describes here is similar to the process of diacrisis that "naïve" speakers of a language use. This is what analogy in its broad sense means: association of information in the brain (cf. Hofstadter & Sander 2013). Diacrisis – and especially the notion *confusivum* – operates in this way: it relates and associates similar language strings in the brain of "naïve" language users.

The analyses presented above can be considered exemplar based approaches. Schmid (2016³: 232) correctly states that "the riddle lies in the recognition of similarities between exemplars and a strong reliance on the cognitive process of analogy". In linguistics, the term analogy, however, is normally used to describe proportional relations between language forms. Although there always is a cognitive process underlying these proportional relationships, the emphasis is still on structural relationships. This study focuses on the language user and his intuitive recognition of shapes and patterns. Hence the term analogy is avoided.

7. Final Conclusion

Four non-morphemic processes of word formation are discussed. In all four processes recognition of similar forms, of an original form or of a model appears to play an essential role. This shows that recognition is important for word formation, at least for non-morphemic word formation. Since these processes lead to new word-formation patterns, recognition also appears to play a role in language change. In addition to structural factors, language acquisition features and language contact, recognition as a cognitive factor should be given a place in the study of word formation and language change.

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