The German complex affix: word formation and foreign language instruction

Da-Fu Huang

Abstract

The German suffix *bar,* unlike other German affixes, represents fairly distinctive grammatical and semantic features, and so do the *un…bar/lich/sam*-constructions, which are typically combined with transitive verb bases, and engender a negative modal meaning.   Despite the controversies about circumfixes (Aronoff & Fudeman, 2005), this paper explores the feasibility of positing a German circumfix or complex affix *un…bar/lich/sam* as a solution to the theoretical and language learning problems posed by the compositional analysis of the *un...bar/lich/sam*-constructions.   After major arguments for the circumfix

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at issue, the paper ends with an evaluation of the circumfix hypothesis along with its potential problems and suggestions for further research in the context of foreign language learning and pedagogy.

Key words:　word formation, circumfix, German word formation, compositional word structure, complex affix

從德語複合字綴談構詞理論與外語教學

黃大夫
摘要

德語裡常見的字尾 bar 無論在語法或語意的屬性皆與其他字尾有明顯不同。同樣的情形也出現在 un…bar/lich/sam 構詞結構中。 un…bar/lich/sam 構詞結構通常包含一個及物動詞的字幹，並衍生出否定字義。本文旨在分析討論德語 un…bar/lich/sam 構詞結構。儘管複合字綴，複雜字綴或不連續詞素存在與否尚有爭議 (Aronoff & Fudeman, 2005)， 本文針對 un…bar/lich/sam 構詞提出一個複合字綴的假設來解決組合構詞分析所產生的問題。本文最後也討論複合字綴假設所衍生的問題，並提出後續在外語教學與學習背景下值得研究的方向與議題。

關鍵詞：構詞，複合字綴，組合構詞，複雜字綴，德語構詞

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Introduction

Some languages are known to have circumfixes, or discontinuous morphemes, where morphemes are attached to a base morpheme initially and finally at the same time (Fromkin, Rodman, & Hyames, 2007, p.81).　A typical example of circumfixes is the German ge…t, a discontinuous morpheme (the prefix *ge-* plus the suffix *-t*) attached to a verb root to form a past participle of the verb.　Syntactically and semantically, the formation of this German affix is active and regular.　Compared to the *ge…t* circumfix together with other affixes in contemporary German, the affix bar in

German demonstrates a relatively distinctive grammatical behavior in terms of its particular semantic nature.　The same is also true of the word formations containing the affix construct *un...bar/lich/sam*, which is usually embedded with a transitive verb base, and engenders a negative passive meaning, parallel to a meaning derived from a passive sentence.　However, the derived meaning from the German *un...bar/lich/sam* word formations generates problems for the compositional hypothesis of the word structure. In the wake of such problems resulting from the compositional word structure perspective, this paper intends to toy with the possibility of a circumfix *un...bar/lich/sam* in German in order to get around the problems. In the following, the problems of the compositional analysis of the *un...bar/lich/sam* word formations will be pointed out, followed by the presentation of a series of arguments for the *un...bar/lich/sam* circumfix. The circumfix hypothesis, nevertheless, also creates problems.　At the end of the paper, the circumfix hypothesis will be evaluated, potential problems

for the hypothesis are then presented, and suggestions for further research
will also be made.

Problems of the Compositional Analysis of the *bar/lich/sam*-formations

According to Olsen (1986:54-56), the word structure of German must
be binary, recursive, endocentric, and right-branching.   Moreover, the
highest projection level of a word structure is N^o, and the projection level of
the word parts cannot be higher than the entire word structure (i.e. N^o).
This conceptualization can be represented through the following word
structure rule (WSR), which was originally developed by Selkirk (1982):

$$(WSR)\ X^n\ \rightarrow\ Y^p\quad X^m\quad (\ 0 \geq n\ \geq\ p, m\ )$$

The word unberechenbar should therefore be generated through the
repeated application of the word structure rule (WSR) in the sequence
indicated in (1) rather than (2):

$$(1)\ A^o \rightarrow\ X^{af}\qquad A^o\qquad (\ unberechenbar \rightarrow\ un + berechenbar\ )$$

$$\Downarrow$$

$$A^o \rightarrow\ V^o\qquad A^{af}\qquad (\ berechenbar \rightarrow\ berechen +bar\ )$$

$$*(2)\ A^o \rightarrow\ V^o\qquad A^{af}\quad (\ unberechenbar \rightarrow\ *unberechen +bar\ )$$

$$\Downarrow$$

$$V^o \rightarrow\ X^{af}\qquad V^o\qquad (*unberechen \rightarrow\ un +berechen\ )$$

The rule application in (2) ist excluded, because *unberechen is not

(but berechenbar is) an existing word in contemporary German, or the un-Affix is seldom attached to a verb base.　This would imply, although Olsen/Selkirk did not make it clear, that during the word derivation, the input of a word structure rule must be an existing word in the lexicon. This claim is made in Aronoff (1976: 21), but, obviously, problematic (cf. Bauer, 1983; and Di Sciullo, 1987) because there exist many counterexamples to this stipulation.　Consider the following contrastive word pairs (cf. Fleischer/Barz, 1992: 271, and Wurzel, 1980: 302):

　　　(3) (a) Unauslöslich/ (a') *auslöslich　　(b)Unaufhaltsam/ (b') *aufhaltsam

　　　　(c) unverkennbar/(c') *verkennbar　　(d) Unabänderlich/(d') *abänderlich

　　　　(e) unsäglich/(e') *säglich

　　　The contrastive word pairs in (3) constitute counterexamples for Aronoff's stipulation, because words (3a'-e') are non-existent in German. Consequently, we cannot explain, for example, that the word in (3a) is derived by the attachment of the affix un-　to the word in (3a').　Further counterexamples of this category can be found in Muthmann (1991), cited below:

Unverbesserlich/*verbesserlich	unaufhörlich/ *aufhörlich
Unversöhnbar/*versöhnbar	unaufhaltbar/*aufhaltbar
Unverlierbar/*verlierbar	ausbleichlich/*ausbleichlich
Unüberhörbar/*überhörbar	unausdenklich/*ausdenklich
Unbeirrbar/*beirrbar	unausdenkbar/*ausdenkbar
Unentrinnbar/*entrinnbar	unausschieblich/*ausschieblich
Unabweisbar/*abweisbar	unausschiebbar/*ausschiebbar
Unmißbar/*mißbar	unaussprechlich/*aussprechlich

Unüberschreitbar/*überschreitbar   unverbaubar/*verbaubar

Unrettbar/*rettbar   unausrottbar/*ausrottbar

These counterexamples also constitute learning problems for German
learners, who tend to learn the negative correlate of the preceding word pairs
by conceptualizing them as consisting of the un-prefix and a positive
adjective, which however is usually nonexistent or not well established in
modern German.   To be more exact, the German negative correlates of the
above adjective word pairs are more frequently used than the positive
counterparts, which either appear in very restricted contexts, or are seldom
accepted as words in the lexicon of native speakers of German.   In addition
to the difference in word frequency and acceptability, there also exist some
semantic difference between the two word groups of the un...bar/lich/sam
word formations.   In contrast with the positive word items, the negative
word items are semantically more specific, and typically refer to figurative
or metaphorical situations (see words in (4)).   It is therefore not appropriate
to simply categorize the above contrastive pairs into the positive group and
the negative group, and claim that the words of the latter derive
compositionally from the ones in the former through the attachment of the
un-prefix to the positive word items.   In order to keep the compositional
hypothesis for word structure, we have to establish a lexicon entry for the
un-prefix and stipulate that it will cause transfer in word meaning when
combined with other words.   This stipulation would complicate the matter,
because we would have to state in the lexicon entry when and how the
semantic transfer will occur as a result of the combination with the un-prefix.
Furthermore, the word bases to be combined with the un-affix can be nouns
(e.g. Unruhe), or adjectives (e.g. unklar).   For these cases, the un-affix does

not effect the semantic transfer.　　Only in the un...bar/lich/sam formations with verb bases do the un-affix seem to cause semantic transfer.　　It therefore seems reasonable to hypothesize that it is the complex affix such as un...bar/lich/sam, instead of the un-Affix, that functions to enable the transfer of word meaning.

(4) (a) sagbar　　　　　　(a') unsagbar (= äußerst groß, unbeschreiblich)

　　(b) nennbar　　　　　 (b') unnennbar (= unsagbar)

　　(c) *aussprechlich/　 (c') unaussprechlich (= unsagbar)
　　　　aussprechbar

　　(d) *vergleichlich/　 (d') unvergleichlich (= einzigartig; sehr)
　　　　vergleichbar

　　(e) ?antastbar/tastbar　(e') unantastbar (= unangreifbar)
　　　　　　　　　　　　　　/ ?untastbar

　　(f) trinkbar　　　　　 (f') ?untrinkbar (= ungenießbar)

　　(g) umgänglich　　　 (g') unumgänglich

　　(h) scheinbar　　　　 (h') unscheinbar

The words (4a'-f') usually refer to metaphorical, intensifying, and emotional dimensions of meaning, whereas the positive counterparts simply represent literal　meanings.　　In words (4c-c', d-d'), there exist positive word items with metaphorical meaning, but they can only be the words with a -bar suffix, despite also the existence of the non-metaphorical negative bar-words such as unaussprechbar, unvergleichbar.　　Words in (4e-e') seem to be a competing case in that only the non-metaphorical meaning is represented when the verb base is tasten, while the metaphorical meaning is possible with the verb base antasten.

The words in (4g-g'), nevertheless, create different problems.　　On the one

hand, the word item umgänglich   (= entgegenkommend 'cooperative')   is derived from the verb umgehen   ['_ _ _], and unumgänglich (= unvermeidlich 'unavoidable') from the verb umgehen [_ '_ _], on the other. For both umgänglich and unumgänglich, there exist no corresponding parallels; that is,   *unumgänglich (= nicht entgegenkommend 'not cooperative') and *umgänglich [_ '_ _] (= vermeidlich 'avoidable'), respectively.   Moreover, in cases of (4h - h') the two words stem from the same verb base, they are derived from the two different word senses of the polysemous verb stem scheinen, one meaning 'to give the appearance of' for the positive word scheinbar, und the other meaning 'to polish, shine' for the negative counterpart unscheinbar.   In this case, there exist no positive parallels with the same verb sense for unscheinbar, and likewise no negative parallel with the same verb sense for scheinbar.   As a consequence of the complicated semantic correspondence between the contrastive word groups discussed above, the examples in (4) constitute, to some extent, problems for the hypothesis of the compositional nature of word structure as propounded by Olsen/Selkirk and Aronoff .

Un...bar/lich/sam as a circumfix in German?

The problems encountered by the compositional approach to German word structure lead one to think of an alternative to solve them.   One necessary consideration is that according to Schnerrer (1982) the un...bar/lich/sam-words (including un...abel) account for approximately 45% of the un-words.   In addition, the word base of the un...bar/lich/sam-words is mostly a transitive verb.   We could hypothesize that in modern German there exists a circumfix un...bar/lich/sam, which is

bound with a transitive verb base, and serves as a shorter word formation process to express a passive meaning otherwise represented through a comparatively longer passive sentence. The following arguments are proposed to support this hypothesis.

Stress patterns of the un...bar/lich/sam-words

One argument for the circumfix hypothesis is that the circumfix at issue seems to condition an almost regular stress pattern, for which the un- prefix alone cannot be held responsible.　More specifically, the stress pattern of the un...bar/lich/sam-words is not conditioned by the un-prefix alone, and accordingly will not be the representation of the stress pattern of the un-words themselves.　In languages such as English as well as German, some affixes play no roles in word stress (v.(5)) , but some affixes may determine (v.(6)) or condition (v.(7), including non-native German words).

(5)　The affixes that play no roles in word stress:

English: *-ness, -ful, -ism, -less, -age, -er, -ist, -ive, -ize, -ship, -y* (Adj.), *a-, be-, en-,*etc.

German: *-en* (Adj.),*-er, -haft, -ig, -isch* (with a native base)*, -lich, -los, -sam, -ös, -bar,　-heit, -ung, -nis,　-schaft, -tum, ver-, zer-, ent-, be-,*etc.

(6)The stress falls on the affix itself:

English: -ette, -ee,　-eer, -ese, -esque, counter- (N.), step-, sub- (N.), etc.

German: *-ei, -ier, -(i)tät, -ismus, -asmus, -istisch, erz-, ur-, miß-*

(N., A.) , etc.

(7a) The stress falls on the penultimate syllable:

English: *-tion, -sion, -ic* (Adj.) , etc.

German: *-isch* (with a non-native word base), *-tion, -ik*

(7b) The stress falls on the last but two syllable:

English: *-ian, -ity, -ical, -graphy, -nomy, -logy,* etc.

German: No examples

The stress pattern of the *un*-words complies with the stress regularity
(5), when the *un*-prefix is bound with a noun base (v. (8)) or with an
adjective base (v. (9)).   Otherwise, the primary stress can be shifted from
the *un*-prefix to the base morpheme, as shown in (10) (cf. Wurzel, 1980 for
various asserted stress principles).

(8) Wetter/′Unwetter   Mensch/′Unmensch

(9) glücklich/únglücklich   moralisch/únmoralisch

(10) ?glaublich/únglaublich/ungláublich   säglich/únsäglich/un‘säglich

gesäumt/úngesäumt/unge‘säumt

From the preceding examples it seems to be the case that the stress
regularity of encompasses that of *un-*, because the stress pattern of
un...bar/lich/sam-words should, overall, pertain to the regularity of (10).
That is, the general stress regularity for the *un...bar/lich/sam*-words is that
the primary stress falls either on the *un*-prefix or on the syllable of the verb
base.   Examples in (11) show this stress regularity.

(11) unbesieglich　[_ _ ' _ _]/[' _ _ _ _]　　ununterscheidbar [_ _ _ ' _ _]/[' _ _　_ _ _]

　　　unbeugsam [_ ' _ _]/[' _ _ _]　　　　unüberwindlich [_ _ _ ' _ _]/[' _ _ _ _ _]

　　　unerschütterlich [_ _　' _ _ _]/[' _ _ _ _ _]　unverlierbar　[_ _ ' _ _]/[' _ _ _ _]

　　　unübersetzbar　[_ _ _ ' _ _]/[' _ _ _ _ _]　　unerkennbar　[_ _ ' _ _]/[' _ _ _ _]

　　　unverantwortlich　[_ _ ' _ _ _]/[' _ _ _ _ _]　　unbenutzbar　[_ _ ' _ _]/[' _ _ _ _]

When one checks most German lexicons or dictionaries (e.g. Duden, 1989; Wahrig, 1992; Duden, v.6; Muret-Sanders, 1991; Collins, 1991, etc.), a clear stress tendency of the *un...bar/lich/sam*-words can be observed; that is, the stress shift to the syllable of the verb base is preferred to the other possibility, although not all the lexicons are unanimous about this tendency for every word structure in question, and for some such word formations there might exist only one stress possibility.　One may attribute this stress tendency to regional variation.　The point is, why this tendency exists just for *un...bar/lich/sam*-words with a transitive verb base, but not for other *un*-words with no verb bases (e.g. *voreingenommen, vorschriftsmäßig, kameradschaftlich*, or longer words, which are harder to pronounce with the primary stress on the *un*-prefix)?　To recap the preceding discussion, we notice that the stress of *un*-words typically falls on the prefix itself, and the stress shift happens only on particular conditions.　In cases of stress shift for *un*-words, the stress of the base word usually becomes the primary stress of the entire *un*-word.　The stress pattern of the *un..bar/lich/sam*-words seems to deviate from this regularity, as suggested in (12).

(12) abdingbar/unabdíngbar/únabdingbar

abänderlich/una῾bänderlich/únabänderlich

　　annehmbar/unannéhmbar/únannehmbar

angreifbar/unangréifbar/únangreifbar

auffindbar/unauffindbar/únauffindbar

austilgbar/unaustílgbar/únaustilgbar

zumutbar/unzumútbar/únzumutbar

    If we take the above-mentioned stress regularity of *un*-words seriously,
then the stress of *unzumutbar* (based on zú*mutbar*), for example, should be
placed on the syllable of the preposition *zu*.   In terms of the examples in
(12), however, such German prepositions as *an, auf, aus, zu*, which are
"stressable," remain unstressed notwithstanding.   Moreover, the
un...bar/lich/sam-words in (12), like other *un*-words, reveal two stress
possibilities with stress shift preferred.

    I have in the previous sections attempted to present arguments for the
existence of *un...bar/lich/sam* circumfix in German from the perspective of
the stress regularity of German *un*-words.   In addition, the German
un...bar/lich/sam, like the above-cited English or German affixes capable of
conditioning word stress,   contains a transitive verb base and generates a
passive sentential meaning.   The stress regularity conditioned by
un...bar/lich/sam can be represented through rule (13).

   (13) α → (+ stressed) / # *un* + (... α ...)β +
bar/lich/sam #

      (α = head of the verb; β = transitive verb/ verb with Prep Obj)

    (13) is an optional rule for the *un...bar/lich/sam*-circumfix , and can be
applied when one intends to emphasize the passive meaning, parallel to the
application of *un*-prefix when one wants to negate, where possible, a base
word.   Moreover, rule (13) is not bi-conditional, and consequently the

un...bar/lich/sam-words that contain intransitive verb bases (e.g. *úndankbar, unéndlich*, etc.) will constitute no counterexamples for rule (13).　　For these exceptions, we must assume that they are generated from compositional derivation (e.g. *undankbar < un + dankbar*).　　For words derived from the compositional process, the stress on the *un*-prefix is relatively preferred to the stress shift.

Another argument for the <u>un...bar/lich/sam</u>-circumfix

　　One important condition for the application of rule (13) is that the word base of the *un...bar/lich/sam*-formations must be a transitive verb or sometimes a verb with a prepositional phrase.　　There are cases where intransitive as well as transitive verb stems exist, but only *un...bar/lich/sam*-words with transitive verb stems are possible (v. (14)).

(14)⎰streiten　　　　　streitbar　　　　　*unstreitbar/unstrittig
　　⎱bestreiten　　　　bestreitbar　　　　unbestreitbar

　　⎰zweifeln　　　　　　　　　　　　*unzweifelbar
　　⎱bezweifeln　　　　　　　　　unbezweifelbar /unanzweifelbar

　　⎰ úmgehen　　　úmgänglich　　　*únumgänglich
　　⎱ umgéhen　　　*umʻgänglich　　unumʻgänglich/ ['＿ ＿ ＿ ＿]

　　⎰ gehen　　　　　gehbar / gangbar　　　*ungehbar /ungangbar
　　⎱ begehen　　　　begehbar　　　　　　unbegehbar

　　German verbs such as streiten, zweifeln, umgehen, gehen are intransitive, and therefore for these verbs there exist no

un...bar/lich/sam-structures, as predicted by rule (13).   Existent
nevertheless are words such as unstrittig (instead of *unstreitbar), ungangbar
(instead of *ungehbar), and so on.

Evaluation of the circumfix hypothesis

        One advantage of positing a un...bar/lich/sam-circumfix in German is
that in cases where un...bar/lich/sam-words (with transitiv base verbs) exist
and their positive counterparts are not established and can only be accepted
under certain conditions, we can assume that un...bar/lich/sam-words
involve the un...bar/lich/sam-circumfix, while their positive parallels
involve the back formation.   The back formation assumption can be
justified by the English examples such as flappable vs. unflappable (cf.
Bauer, 1983).   The English word flappable, for example, is back formed
from unflappable.   From the diachronical perspective, moreover, the
German words faßbar and erträglich appeared later than their negative
counterparts unfaßbar and unerträglich respectively (cf. Duden, 1989, v. 7).
That is to say, the back formation process may play a decisive role in this
connection, although native speakers of German do not perceive the back
formation as a synchronic word formation process.   We could therefore
postulate that the back formation is an active word formation process that
generates positive word structures from their negative parallels, so long as
the back formed structures are contextually unambiguous and accepted by
the native speakers of German.   A decade ago, German politicians would
say that "die Menschenwürde sei unantastbar 'human dignity is
untouchable.'"   Many decades later, German politicians could possibly say
that "die Menschenwürde sei antastbar 'human dignity is

touchable,'" perhaps because almost all of the works will have been replaced by robots.　Until then, it could very possibly the case that the German antastbar would already be accepted as the positive parallel of unantastbar.　Along the same lines, the following positive word structures would in the future be expected to become established through the back formation from their negative counterparts (v. (15)).

(15) ??erschütterlich/unerschütterlich　　　??erforschlich/unerforschlich

　　　??übertrefflich/unübertrefflich　　　　??ausdenkbar/unausdenkbar

　　　??aufschiebar/unaufschiebbar　　　　?verzichtbar/unverzichtbar

　　　?sinkbar/unsinkbar

Moreover, for the cases where positive and negative correlates both exist, we could argue that either the positive is derived from the negative correlate through back formation, or the negative is derived from the compositional attachment of the un-prefix to the positive counterpart.　The compositional attachment of the un-prefix is particularly the case for the un...bar/lich/sam-structures with a intransitive verb base, or for the case where the negative is more commonly used than the positive correlate (v. (16)).　For words such as unglaublich and ungenießbar, in addition, although the corresponding positive parallels also exist, they tend to be used mostly in a negative context.
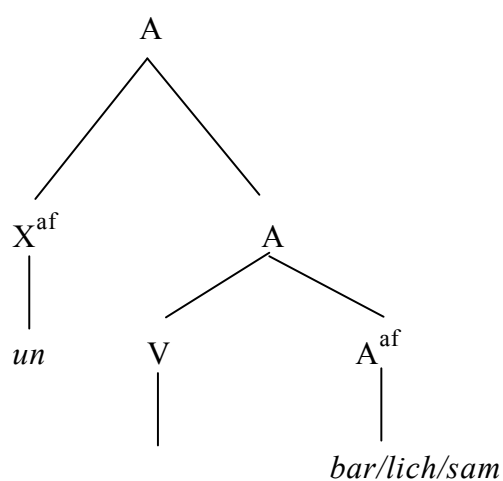
(16)　dankbar/undankbar　　　　　wandelbar/unwandelbar

　　　fehlbar/unfehlbar　　　　　　glaublich/unglaublich

　　　genießbar/ungenießbar
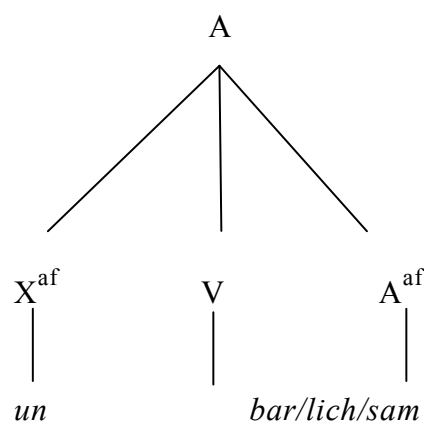
Potential problems of the circumfix hypothesis

Despite the advantage of positing a circumfix analysis for the German

un...bar/lich/sam-structures, there arise some problems which need to be addressed in future research.   For one, based on the preceding claims, one must consequently configure a circumfix-structure such as (18) instead of a compositional-structure such as (17) for the word structure of un...bar/lich/sam-words:

(17)

$$
\begin{array}{c}
\text{A} \\
\diagup\diagdown \\
\text{X}^{af} \qquad \text{A} \\
| \qquad\quad \diagup\diagdown \\
un \qquad \text{V} \qquad \text{A}^{af} \\
\qquad\quad | \qquad\quad | \\
\qquad\qquad\qquad bar/lich/sam
\end{array}
$$

(18)

$$
\begin{array}{c}
\text{A} \\
\diagup\ |\ \diagdown \\
\text{X}^{af} \qquad \text{V} \qquad \text{A}^{af} \\
| \qquad\quad | \qquad\quad | \\
un \qquad\qquad\qquad bar/lich/sam
\end{array}
$$

Configuration (18), however, would be a marked structure, because it is ternary, rather than binary, and therefore (18) disagrees with Olsen/Selkirk's word structure rules, which stipulate that the word structure be binary.

        In addition, the three variants of the un...bar/lich/sam-structures are not equally productive.   The un...bar-model is doubtless the most dominant and productive, while *un...lich*-model less productive, und *un...sam*-model not productive at all (i.e. in terms of passive meaning producing capability).

This corresponds with the result of statistical study by Schnerrer (1978) on *un*-formations in German, and of all the *un*-formations in German, the *un...bar*-words with transitive verb bases account for 18%, in contrast to 8% for *un...lich*-words, and 0.7% for the *un...sam*-words. It is therefore theoretically unconvincing to posit three different circumfixes for the German word structure.

Suggestions for further study

In response to the preceding problems regarding the un...bar/lich/sam-circumfix, further research is needed to address these remaining issues and, perhaps, generate an alternative and more encompassing approach to cope with the German un...bar/lich/sam-structures. One way to have a better understanding of the circumfix at issue is to conduct a corpus-based study of the structure to gain insights into the synchronic usage of the structure and other German circumfix candidates such as Ge…e expressions across various language dimensions and registers.

Aside from the theoretical consideration of the circumfix hypothesis at issue, attempts should be made to better understand the learning and pedagogical issues of the German un...bar/lich/sam-constructions due to their high frequency in the language corpus of German as well as their idiosyncratic semantic and syntactic properties. In particular, further study can be done on the learning difficulties encountered by German as a foreign or second language learners when they learn the German un...bar/lich/sam-constructions. For English majors of Taiwanese universities who learn German as their second foreign language, particular attention can also be focused on the interference from students' previous

knowledge of English, since the two languages have true and false cognates
with each other, and there emerge complicated interconnections between the
two languages in word formation rules. The results of such studies help to
develop effective vocabulary teaching strategies and methods for the
instruction of German vocabulary involving the circumfix formation rules.

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