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German affixes *-lich*, *-tum*, *-schaft*, and Umlaut

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1. Introduction

German noun-forming affixes *-tum* and *-schaft* behave in similar fashion in several respects. For instance, the sets of their complements noticeably intersect, e.g. *Beamtentum* 'civil service'/*Beamtenschaft* 'the community of civil servants' (<Beamten 'civil servants'), etc. Also, both *-tum* and *-schaft* lend themselves to adjectivization by means of suffixation of *-lich*. In that case however, they respond differently: while *-tum* undergoes Umlaut, e.g. *altertümlich* 'medieval' (<Altertum 'Middle Ages'), *-schaft* does not, e.g. *wissenschaftlich*/**wissenschäftlich* 'scientific' (<Wissenschaft 'science'). Shedding light on this differential behavior is the topic of this squib. While the literature is unanimous in viewing *-lich* as an irregular umlauter, I will argue, on the contrary, that *-lich* is a fully consistent umlauter. On the other hand, I will argue, *-tum* and *-schaft* occupy different syntactic positions, in consequence of which *-tum* and *-lich* may spell out at the same phase (hence the possibility of Umlaut), though *-schaft* and *-lich* never will (hence no Umlaut ever).

In a first section, I lay out just enough information for the reader unfamiliar with Umlaut to follow the argument. As well, I briefly recapitulate the view put forth in Lieber (1987) for background. Then, in section 2, I propose the basics of a framework for handling the relationship between affixes and roots. In section 3, I show how Umlaut can be handled in that framework. Section 4 is devoted to *-schaft* and why it can never umlaut. A brief conclusion follows.

2. Umlaut

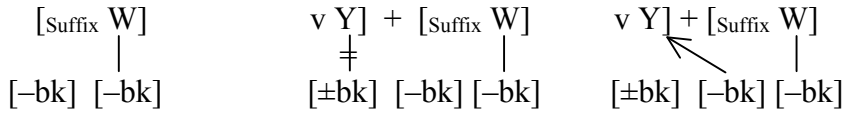
Umlaut refers to the phenomenon whereby the back vowel of a stem – au, a, o, u – becomes fronted (noted *äu*, *ä*, *ö*, *ü* respectively, according to spelling conventions) upon

suffixation.[1] Affixes fall into the three categories in (1) with respect to their ability to front a stem vowel.

(1) a. Some affixes *never* trigger Umlaut, e.g. *-bar* $_{\text{Adj}}$]: *Zoll* 'customs'/*zoll-bar* 'liable to customs' (**zöll-bar*)
b. Some affixes *always* trigger it, e.g. *-er* $_{\text{Plural}}$]: *Buch* 'book'/*Büch-er*
c. Some affixes trigger it in seemingly unpredictable fashion, e.g. *-lich* $_{\text{Adj}}$]: *Mann* 'man'/*männ-lich* 'manly' vs. *Amt* 'office'/*amt-lich* 'official'

Lieber (1987) represents the phonological equipment of umlauters in the form of a [–back] floating autosegment as shown in (2a). In the presence of the floating autosegment, the specification of the target stem vowel for [back] is delinked (2b), and the floating [–back] of the suffix subsequently docks onto that position (2c).

(2)



In addition, Lieber accounts for the behavior of sporadic umlauters by proposing that each such affix comes in two versions at all times, one with the [- back] floating autosegment responsible for the implementation of Umlaut, the other without. This is shown in (3) with *-lich*.

(3)

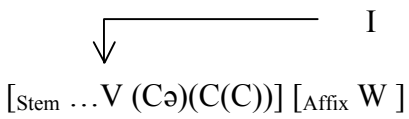
In consequence, any instance of suffixation of sporadic umlauter *-lich* is expected to yield two well-formed realizations of the adjective – one with umlaut, the other without – though not all such pairs are necessarily part of the active vocabulary of most speakers. Following Lieber's conjecture on the bi-allomorphic representation of irregular umlauters, *eigentümlich* 'peculiar', the adjective corresponding to *Eigentum* 'property' (<Eigen 'own'), must involve the Umlaut triggering allomorph of *-lich* (3a); while *wissenschaftlich* 'scientific' involves its non-Umlaut triggering allomorph (3b). But, because the allomorphs are in free variation, *eigentumlich* and *wissenschäftlich* would have been just as likely instead of, or even alongside, the attested forms. I take exception with this last prediction and I intend to show that, while *eigentumlich* is indeed as well-

[1]For comprehensive presentation and analysis of Umlaut, cf. Wurzel 1970, Wiese 1996 and references therein. See Pöchtrager 2014) for a vigorous rejection of Umlaut as a *bona fide* phonological phenomenon.

formed as attested *eigentümlich*, *wissenschäftlich* is hopelessly ungrammatical (as will be any attempt at umlauting suffix *-schaft* in any context).

As I pointed out in the introduction, my intention is to argue that there is no such thing as an irregular umlauter. From that perspective, Lieber's two-allomorph solution is not an option. Rather, my proposal must be that all umlauters are endowed with a fully stable property, a floating I element, which discharges in the form of Umlaut. This is shown in (4).

(4)



In the next two sections, I develop my proposal as to what morpho-syntactic configurations define the reach of umlauters.

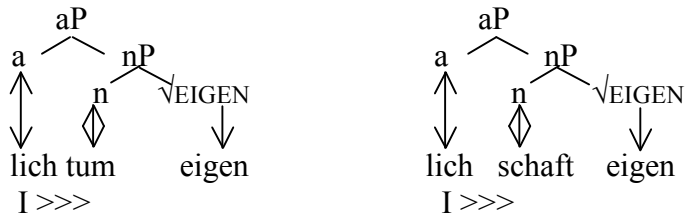
3. Roots and affixes

Following Marantz (1997), Borer (2005), and others, I accept the idea of an inert lexicon consisting of a list of uncategorized roots, e.g. √CAT, √DRINK, √SMALL, etc. Upon selection by a categorial head *n*, *v*, *a*, nouns, verbs and adjectives arise: [nP n √CAT], [aP a √SMALL], [vP v √DRINK]. I take the strict view in (5) of the respective hierarchical positions of roots and categorial heads, namely the former dominate the latter, *not vice versa*. I return to this crucial point below.

(5) n, v, a > √

Most authors agree that affixes correspond to categorial heads in one-to-one fashion as indicated in (6) with the examples of the adjectives derived from *Eigen-tum* 'property (possession)' and *Eigen-schaft* 'property (characteristic)'.[2]

(6) a. b.

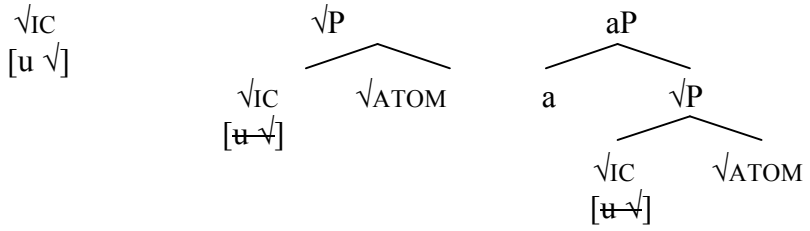


In both (6a,b), affixes appear in identical syntactic configurations. On that view, nothing can lead to the expectation that they will deliver an output to phonology such that *-lich* (noted in (6) with its Umlauting property) will be able to distinguish between *-tum* and *-schaft* and umlaut one *...tüm-lich* but spare the other *...schaft-lich*.

[2]The double arrows in (6) express my indifference with respect to the exact nature of that correspondence: either a) the affix projects the category, or b) the affix realizes the category.

Drawing from Lowenstamm (2014), I propose a different view of affixes, namely affixes are themselves (bound) roots. I will illustrate the proposal with the example of the English adjective *atomic*. On the view advocated here, *-ic* is a bound root, viz √IC. Its boundedness is represented by means of an uninterpretable feature (7a) which a) requires it to merge a complement, b) specifies which complement it must merge (let us assume for the sake of illustration that English *-ic* takes roots as complements). Only when merger has taken place and the uninterpretable feature been checked can the bound root project at the phrasal level (7b). The complex root thus formed can then be categorized, by head *a* in the case at hand.

(7) a. b. c.



Crucial at this point is the identification of *types* of selectional behavior on the part of bound roots. I submit that German bound roots manifest three such types. They are reviewed in the next section and a connection with Umlaut is established.

4. Types of selectional behavior and link with Umlaut

The first type is the selection by a root of a categorized object, *a*P, *v*P, or *n*P. Typically, such selectors will be exclusively sensitive to the *categorial identity* of their complement. They will be entirely oblivious to its internal complexity. Noun forming *-keit* exemplifies this: it forms deadjectival nouns and it is incapable of discriminating between the simple and complex adjectives it embeds, e.g. *Bitter-keit*,(<*bitter* 'bitter') *Hager-keit* (<*hager* 'lean') both simple vs. *Ein-sam-keit* (<*einsam* 'lonely'), *Statt-lich-keit* (<*stattlich* 'magnificent'), *Greif-bar-keit*,(<*greifbar* 'tangible'), all complex in different ways. The uninterpretable feature of √KEIT is therefore [u aP]. For the sake of generalizing, I represent category selectors as [u xP] where x (in lower case) ranges over the set {a, n, v}. Note that √KEIT never triggers Umlaut.

It follows from the preceding characterization that if an affix has access to the finer structure of its complement, it cannot be a category selector. Such is the case of plural *-er*. Indeed, $\sqrt{ER_{PL}}$ rejects morphologically complex bases: **Frei-heit-er* (<*Freiheit* 'freedom') **Wissen-schaft-er*, **Üb-ung-er* (<*Übung* 'exercise'), etc. It selects *unsuffixed complements*, e.g. *Buch*/*Büch-er*, *Loch*/*Löch-er*, *Fach*/*Fäch-er*, *Haus*/*Haüs-er* (note the correlation between the rigid requirement governing the attachment of $\sqrt{ER_{PL}}$ and the fact that it never fails to trigger Umlaut). In order to select so discriminately, $\sqrt{ER_{PL}}$ must be structurally lower than the categorial layer. It is my proposal that $\sqrt{ER_{PL}}$ selects roots. Accordingly, its uninterpretable feature is [u √].

The third type, the universal selector, selects both roots (as $\sqrt{ER_{PL}}$ does) *and* categorized objects (as √KEIT does). Adjective forming *-lich* exemplifies this behavior: it

attaches to unsuffixed bases, e.g. *Mann*/*männ-lich*, *Amt*/*amt-lich* and to suffixed bases as well, e.g. *wissen-schaft-lich*, *ganz-heit-lich* (<*Ganzheit* 'entirety'). The uninterpretable feature associated with the universal selector is [u X] where X (in upper case) is a variable ranging over the set {√, {aP, vP, nP}}. Note Umlaut on *männ-lich*, though not on *amt-lich*, a point directly dealt with below.

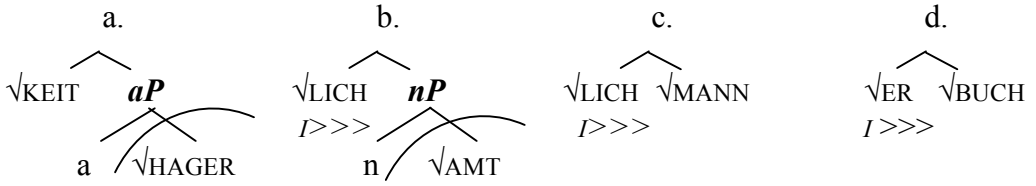
While this tripartite distinction is established independently of Umlaut, it provides a framework within which the behavior of Umlauters can be defined in exact fashion. The generalizations appears in (8):

(8) a. when Umlauters select roots, they umlaut their complement
b. when they select categorized objects, they do not
c. if they select both, they are sporadic Umlauters

This is represented in (9) with √KEIT (9a), √LICH in its dual capacity (9b,c), and √ER$_{PL}$ (9d), where once more the Umlauting potential of the last two is indicated. Thus, when √LICH, a typical sporadic Umlauter, selects in the same position (9b) as √KEIT (9a) no Umlaut takes place, hence *amtlich*. But when √LICH occupies the same position (9c) as √ER$_{PL}$ (9d), Umlaut takes place, hence *männlich*.

A phasal interpretation suggests itself: assuming that *n* is a phase head, √LICH and the root of its complement are separated by a phase head in (9b), therefore belong to distinct spellout episodes. In (9c) by contrast √LICH and its complement root are not separated by a phase head, therefore will be spelled out together, hence Umlaut. Space limitations prevent discussion of non-phonological correlates of the distinction just demonstrated. A single example will give an idea: when √LICH selects <u>noun</u> *Vertrag* 'contract, deal', no Umlaut takes place and a strictly compositional interpretation ensues for *vertraglich*: 'contractual'. But when √LICH selects complex root [$_{√P}$ √VER √TRAG], a non-compositional interpretation arises (along with Umlaut) for *verträglich*, viz. 'easygoing, compatible'.

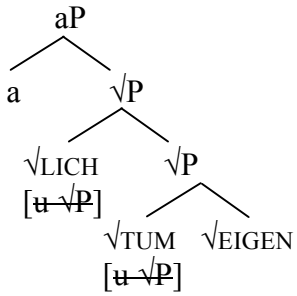
(9)



Hagerkeit amtlich männlich Bücher

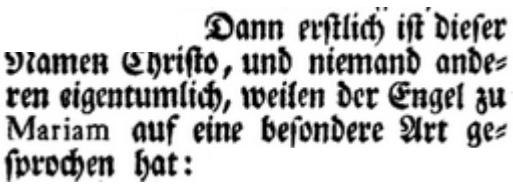
On this view, *eigentümlich* can be assessed in straightforward fashion: √LICH directly selects the complex root formed by √TUM and its complement, spells out together with that complex root, and consequently releases its umlauting potential. This is shown in (10).

(10)



The data analyzed in (9) and (10) corresponds to the usual description of German i.e. *amtlich* vs. **ämtlich*, *männlich* vs. **mannlich*, *eigentümlich* vs. **eigentumlich*. But on the view that √LICH is a universal selector, nothing can block its merger of *root* √AMT, yielding *ämtlich* alongside *amtlich*; conversely, nothing can block its merger of *nP* [$_{nP}$ n √MANN], yielding *mannlich* alongside *männlich*; similarly, there is no reason to block selection of *nP Eigentum*, thus deriving *eigentumlich*. And indeed, neither *ämtlich*, *mannlich*, or *eigentumlich* offends well-formedness in any way. In fact, *ämtlich* was standard well into the first half of the 20th century. The most recent attestations of e*igentumlich* I have found go back to an 18th century collection of sermons delivered by Franciscus Peikhart, a Jesuit preacher attached to Stephansdom in Vienna (Peikhart 1752).

(11)


Dann erſtlich iſt dieſer
Namen Chriſto, und niemand ande-
ren eigentumlich, weilen der Engel zu
Mariam auf eine beſondere Art ge-
ſprochen hat:

If correct, the fact that *eigentumlich* has not been part of the experience of speakers for many generations, makes its acceptance highly significant. Not only do contemporary speakers recognize it as well-formed, they also construe its meaning as fully compositional as obviously intended in (11) and in crucial contradistinction with the meaning of *eigentümlich*. That is, a 'new' adjective on account of a minimal difference with an already known adjective is readily assigned a place in the familiar *vertraglich*/*verträglich* pattern whereby the *un*umlauted version of a *-lich* adjective must have compositional meaning.

Generalizing from the discussion in the two preceding paragraphs, I propose (12).

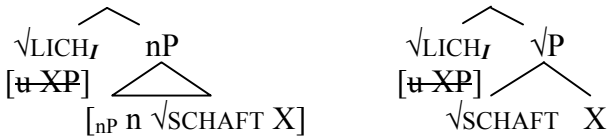
(12) Given a universal selector √W $_{[u\ XP]}$, and a root √Y, both [$_{√P}$ √W √Y] and [$_{√P}$ √W [$_{xP}$ x √Y]] are well-formed expressions. If √W is an umlauter, it will front the vowel of its phase mate.

(12) defines exactly under what circumstances minimal pairs with/without Umlaut arise. Such pairs are much more numerous than the "corpus" would have it, though once more

many forms may be familiar only to speakers of a particular regional, social, occupational, or generational dialect.[3]

While the rise of minimal pairs of the type under discussion follows from (12), a question is being begged by the same token: if √LICH is indeed a promiscuous selector, it is *a priori* as likely to select √SCHAFT as part of an entire "*Xschaft*" noun (13a) *or* root √SCHAFT itself directly as in (13b), in effect as it did √TUM. According to the first scenario, √LICH and √SCHAFT pertain to separate phases and √LICH is not expected to release its harmonic potential. But in the second case, both roots will be spelled out at the same phase and Umlaut is expected in that case.

(13) a. b.

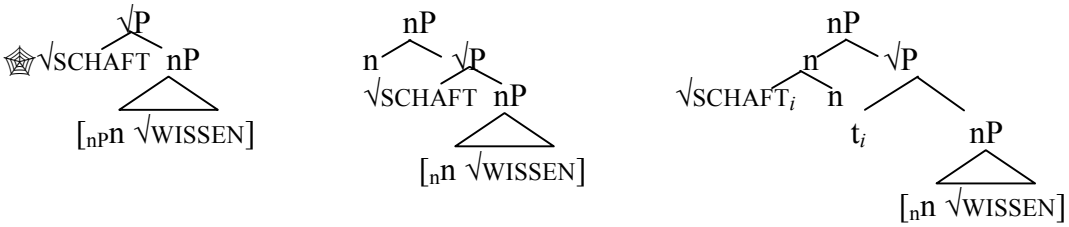


Yet, √SCHAFT never appears as […schäft…]. Is it an accident? Or does something truly immunize it from Umlaut? To put it differently, what causes √SCHAFT to remain outside the scope of (12)? I address those questions in the next section.

5. √SCHAFT and what protects it against Umlaut

√SCHAFT selects categorized objects, as evidenced by the fact that its complements are attested independent items. As such, it directly contravenes the ban against roots dominating categories (5). This is shown in (14a). What prevents the derivation from crashing? I propose that the violation of the canonical hierarchy of roots and xPs inherent in the complex root in (14a) is dealt with as early as the next step of the derivation, viz. upon categorization of the complex root (14b). An escape hatch now becomes available: the head of the root phrase immediately moves up and left-adjoins to its categorizing head, *n* in (14c).

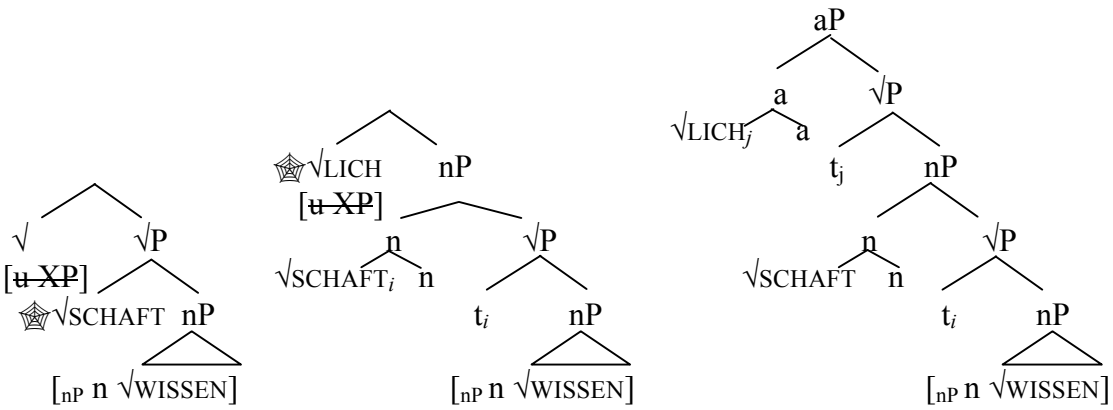
(14) a. b. c.



[3] Thus *blutig* 'bloody' (<*Blut* 'blood') is not supposed to have an umlauted version. Yet, *blütig* 'thoroughbred' is in common use among horse breeders. Skeptics are encouraged to Google *blütig* in connection with any of *Pferd* 'horse', *Stute* 'mare' *Fohlen* 'foal', *Jährling* 'yearling' etc.

I now return to the question that serves as the title of this section: what prevents a promiscuous selector such as √LICH from merging √SCHAFT and its complement in the manner indicated in (15a)? While the attempted merger is compatible with the uninterpretable feature carried by √LICH, it fails because it amounts to merging an object on the verge of crashing. The alternative is forced on √LICH: it can only merge the repaired version of the derivation (15b). However, (15b) the repaired version as such still does not shield √SCHAFT from √LICH's umlauting potential because no phase head separates them. On the other hand, √LICH in its position in (15b) violates the respective canonical order of roots and categories (exactly as √SCHAFT itself did in (15a)). But the same escape hatch is available to √LICH: it moves up and left-adjoins to *a*. This time, √LICH and √SCHAFT are firmly tucked in in separate heads, independent spellout is guaranteed, and Umlaut is precluded.

(15) a. b. c.



Generalizing from this example, I conclude that no category selector will transmit or receive Umlaut. Generalizing beyond Umlaut (and German for that matter), I now put forth a much more general theorem:

(16) If Y is an affix and its complement is a noun, an adjective, or a verb, Y is phonologically inert

This discussion of *-lich*, *-tum* and *-schaft* has been conducted entirely on the basis of how they select and how they are selected. Their behavior as triggers and/or targets of Umlaut follows.

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