## *Der Schritt vom Wege:*
## Form Alternations of the Prefix *k-* of the Resultative Participle in Bavarian

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## 1. Variance and invariance

For purposes of morphological typology it makes a difference whether the exponents of inflectional categories are invariant or variant:  this is one of the key parameters, correlating with many others, in the overall distinction between agglutinative and flexive types.[1]  More precisely, it is MORPHOLOGICAL (in)variance which matters, not variation for which either phonology or syntax can be held responsible.  However, unless both the conditions and the conditioned alternation itself are clearly of an exclusively phonological nature (as in the prototypical case of vowel harmony), it is not self-evident whether an alternation of an inflectional exponent is best dealt with morphologically or phonologically, i.e. in terms of allomorphy or in terms of (mor)phonological rules operating on single underlying forms.  And unless both the condition and the conditioned alternation are localized within the same (morphological) word, an alternation may best be dealt with syntactically to begin with, in terms of government or some such relation reaching beyond word boundaries.  It has sometimes been suggested or implicitly assumed that only the nature of an alternation itself is relevant, and not the nature or locus of the conditions;  but unanimity has not been reached on this question among those within whose respective responsibilities inflectional alternations can conceivably fall.

The resultative participle (also known as perfective or past or passive participle, corresponding to its different verbal uses, or more neutrally as second participle) in the Upper German dialect of Bavarian is an instructive case in point.  It shows an alternation, partly identical to and partly different from Standard German in the distribution and also the shape of the alternating forms, which is intriguingly indeterminate between phonological, morphological, or syntactic interpretations.

On the face of it the prefix of the resultative participle in Bavarian takes two forms: [k] and zero, corresponding to [ge] and zero in Standard German.  Actually, this prefix is part of a circumfix, since it always co-occurs with the suffixes *-(e)t* or *-(e)n*, depending on

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[1]      See Plank (1999), with further references.

whether a verb is weak or strong, just like in Standard German (though verbs may differ between dialect and standard as to their conjugation class membership). Although the overt form especially of the strong suffix in Bavarian again differs from that in Standard German, alternating between [n] and [ɐ] (a case of purely phonological variation), this part of the circumfix will here be disregarded. Our interest is in this: What appears to be one and the same alternation of the form of the prefix, [k ~ Ø], is subject to three different kinds of conditions; thus, the question is whether the status of the alternation—phonological or morphological or syntactic—is the same in these three circumstances.[2] A second question merely adumbrated here is whether categorical answers to the first question really matter. *Sub specie aeternitatis*, or at least in light of what has happened to the prefix at issue over the last thousand or so years, there would only seem to be one main theme being played in three variations.

## 2. Prosodic phonological conditioning

Exactly as in Standard German, the choice between an overt prefix and zero for resultative participles in Bavarian depends on the stress of the base: the prefix is zero if stress (that is, potential main stress, indicated by small caps in orthographic renderings) is not on the initial syllable, as with inseparable prefixes and stress-attracting suffixes (1b), and *k-*/*ge-* (Bavarian/Standard) otherwise (1a).[3]

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[2]     The data, well-known to dialectologists and relatively straightforward, are based on my own small-town (not to say urban) North-Middle Bavarian intuitions, supplemented by Merkle (1975: 56-59) and Zehetner (1977: 115-117). Overall, and especially in more marginal and archaic rural dialects, there is considerable variation in just how much the participial prefix is weakened in different environments; see Kranzmayer (1956: 85-86). In Alemannic, as spoken at Konstanz and environs and probably beyond, exactly the same patterns are found as in mainstream Bavarian. These lines, however, are not meant to enrich German dialectology but to honour, and to entertain if not instruct, the most eminent German morphologist and ex (or still?) phonologist. Therefore I'll essentially limit myself to what is closest to home.

[3]     Unless sound details matter, to facilitate recognition I adopt an orthography for Bavarian examples which is inspired by Merkle's (1975). However, unlike Merkle I spell plosives as what they are, for all phonological and most phonetic purposes: voiceless consonants, with only velars showing a contrast in aspiration (aspirated syllable-initially before vowel, unaspirated elsewhere). Among Bavarian dialectologists, voiceless

(1) | Bavarian: | Standard German: | meaning: |
|---|---|---|
| a. K-SUFf-à | ge-SOFf-en | 'drunk' |
| K-REN-T | ge-RANN-T | 'run' |
| K-AKkà-t | ge-ACker-t | 'ploughed' |
| K-WAKkl-t | ge-WACkel-t | 'shaken' |
| K-WUNtà-t | ge-WUNder-t | 'wondered' |
| AUF-K-FRESs-n | AUF-ge-FRESs-en | 'eaten up' |
| b. (*k-)fà-SUFf-à | (*ge-)ver-SOFf-en | 'wasted in drinking' |
| (*k-)eà-LEtik-t | (*ge-)erLEdig-t | 'settled' |
| (*k-)schtuTIÀ-T | (*ge-)stuDIER-T | 'studied' |
| (*k-)schmaROTS-T | (*ge-)schmaROTZ-T | 'sponged (on)' |

The one glaring real counterexample is the same in Bavarian and Standard German: *ge-beneDEI-T* 'blessed' (Kiparsky 1966: 96)—though Bavarian worshippers have been heard to suppress this sacrosanct prefix too in saying their prayers.[4]

The question then is whether the inflectional exponents of resultative participles in these circumstances are MORPHOLOGICALLY invariant or variant, so far as their prefixal part is concerned. For Standard German—and Bavarian is not different in relevant respects—Kiparsky (1966: 70-75) takes morphological invariance for granted and accounts for the zero alternant of *ge-* by a phonological rule of deletion: prefixes consisting of a consonant and an unstressable vowel delete before an unstressed syllable, and *ge-* and *be-* happen to be the only prefixes of this shape.[5] Now, while the conditioning of the alternation is clearly and exclusively phonological, the alternation itself is not. There is a morphological part to it insofar as it is only PREFIXES with unstressable vowels that delete, not just ANY /ge, be/ in this environment: the initial syllables in *generaTIV* 'generative' or *BeneFIZ* 'benefice', for example, don't. Nothing would be lost, it seems, and perhaps something would be gained in simplicity, with overt forms directly reflecting morphological representations, if we would instead assume that *ge-/k-* and zero are morphologically distinct, in both Standard German and Bavarian, and that instead of phonological rules deleting /g, b/ (/k, p/ in Bavarian) and unstressable /e/, there is a

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unaspirated obstruents tend to be referred to as 'lenis' or 'semi-fortis', whence Merkle's spellings as <b, d, g>.

[4]     Strangely, Bavarian also adds the prefix when *schtuTIÀ-T* is nominalized: *à KschtuTIÀT(t)-à* 'someone learned'.

[5]     This is not the opportunity to discuss whether the relevant behaviours of these two prefixes are indeed parallel; I think they are not.

selection between two allomorphs subject to a prosodic phonological condition: before unstressed syllable vs. elsewhere. What would also seem to point to allomorphy rather than (mor)phonology is that an otherwise parallel instance of an alternation between a consonantal segment and zero, in the case of the definite article, is not subject to such prosodic conditioning; this argument will be made in the next section. Other criteria for determining whether the nature of an alternation is phonological or morphological—such as the obedience to phonological or morphological locality conditions or the interaction with other phonological or morphological rules (Kiparsky 1996)—do not force any firm decision one way or the other in this case.

More recently, with prosodic morphology gaining momentum,[6] a rationale of this prosodically conditioned alternation has been sought in foot structure. For example, in a popular grammar whose revised version has become so sophisticated as to invoke feet, Eisenberg (1998: 194, 245) suggests that although German in general prefers trochees,[7] resultative participles should ideally be iambic, with an initial unstressed light syllable followed by a stressed one, or should at any rate not begin with two unstressed syllables. An account in terms of foot structure is equally consistent with assumptions of morphological invariance (plus phonologically engineered alternation, subject to a prosodic condition) and morphological variance (allomorphy).

The special interest of Bavarian here lies in the fact that the non-zero alternant itself ostensibly does not interfere with foot structure: unlike in Standard German, where it is merely unstressable, in Bavarian the prefix of the resultative participle is always overtly non-syllabic (again with the single exception of *ke-peneTEI-T* 'blessed', for those following the text of their prayers to the letter). In this respect participial *k-* differs from collective *k(e)-* (as in *Ke-PIÀK* 'mountains') and non-productive, lexicalized *k(e)-*'s (e.g., *ke-POÀN* 'born'), which confronts this prefix with a phonological problem, as will be seen presently. Therefore, if no syllable is added, impossible *\*k-fà-SUFf-à*, *\*k-schtuTIÀ-T*, etc. would seem to have exactly the same foot structure as the real participial forms *fà-SUFf-à*, *schtuTIÀ-T*, etc.—which might suggest that non-optimal feet cannot be a valid explanatory notion in Bavarian. And since the distribution of *k-* and zero is parallel to that of *ge-* and zero in Standard German, some doubt would perhaps be thrown on a foot-based constraint for the standard language too. The use of modals and other hedges in the preceding sentences is due to the suspicion that what is not a syllable on the face of it, might be one after all,

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[6]    Anticipated in Plank (1981: 270), but it would be an exaggeration to say that a splash was made by that footnote. Perhaps it had better remained unpublished.

[7]    Probably moraic rather than syllabic ones, essentially continuing the Germanic Foot (Dresher & Lahiri 1991).

although in a more abstract sense.  And since this clearly cannot be a CV syllable (like collective *k(e)*-), it is perhaps a (V)C one.[8]  On this assumption the prosodic conditioning of the [k ~ Ø] alternation of the participial prefix in Bavarian would find the same rationale as in Standard German.


## 3.  Segmental phonological conditioning

Differing from Standard German, the [k ~ Ø] alternation of the participial prefix in Bavarian is also subject to a segmental phonological condition.  When stress on the first syllable of the base would permit an overt prefix, as with all verbs in (2), there nonetheless is none if the initial segment of the base is a plosive.  In (2b) all plosives which are possible in onsets in Bavarian are illustrated, namely [p, t, k$^h$, k];  there are no aspirated labial and alveolar plosives, and before a consonant [k$^h$] does not contrast with [k] either.

| (2) | | Bavarian: | Standard German: | meaning: |
|---|---|---|---|---|
| | a. | K-SUFf-à | ge-SOFf-en | 'drunk' |
| | | K-REN-T | ge-RANN-T | 'run' |
| | | K-WAKkl-t | ge-WACkel-t | 'shaken' |
| | | K-WUNtà-t | ge-WUNder-t | 'wondered' |
| | | K-HEÀ-T | ge-HÖR-T | 'heard' |
| | | K-AKkhà-t | ge-ACker-t | 'ploughed' |
| | | K-EÀ-T | ge-EHR-T | 'honoured' |
| | | AUF-K-FRESs-n | AUF-ge-FRESs-en | 'eaten up" |
| | b. | PUNTt-n | ge-BUNd-en | 'bound' |
| | | PFIFf-à | ge-PFIFf-en | 'whistled' |
| | | TAUFF-T | ge-TAUF-T | 'christened' |
| | | TSOÀK-T | ge-ZEIG-T | 'shown' |
| | | KÄÀ-T | ge-GÄR-T | 'fermented' |
| | | KAKkhà-t | ge-GACkert-t | 'cackled' |
| | | KRACH-T | ge-KRACH-T | 'crashed' |
| | | KNAPpà-t | ge-KNABber-t | 'nibbled' |
| | | KWIETSCH-T | ge-QUIETSCH-T | 'squeaked' |
| | | KHEÀ-T | ge-KEHR-T | 'swept' |

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[8]     Believers in syllables with empty nuclei, who could here draw support from history, might posit C(V) as the syllabic shape of the prefix.

The rationale here seems obvious, presupposing that two initial consonants would be co-syllabified: initial clusters of two plosives, as in *kpunttn* etc., are at odds with the sonority hierarchy, which requires an increase in sonority from the initial margin of the syllable towards its peak, as in the clusters of plosive and non-plosive(s) illustrated in (2a).

In this respect stems with initial vowel, like *K-AKkhà-t* in (2a), are exceptional, if only on the surface. They take the participial prefix, but when occurring without it, as in the infinitive *AKkhàn* [ʔak.kʰɐn], their initial segment is a glottal stop, which is a plosive. Now, the glottal stop is not phonemic: it is predictable, appearing before a vocalic onset of stressed syllables. Remarkably, it also appears after the participial prefix, although this only consists of a consonantal segment: compare *K-AKkhà-t* 'ploughed' with *KAKkhà-t* 'cackled', or also *K-EÀ-T* 'honoured' with *KHEÀ-T* 'sweeped' and *KÄÀ-T* 'fermented', which are minimal pairs: ['kʔak.kʰɐt] (or [k.ʔak.kʰɐt]) vs. ['kak.kʰɐt], ['kʔɛɐt] (or [k.ʔɛɐt]) vs. ['kʰɛɐt] and ['kɛɐt]. This is only explicable if the participial prefix is not part of the domain relevant for the insertion of glottal stops, as sketched in the level-ordered derivation in (3).

(3)     Derivation of Bavarian form of Standard German *ge-acker-t* 'ploughed':

| | | |
|---|---|---|
| akkʰɐ | underlying form of stem | MORPHOLOGY |
| 'ak.kʰɐ | syllabification, stress | PHONOLOGY |
| 'ʔak.kʰɐ | glottal stop insertion | PHONOLOGY |
| k-'ʔak.kʰɐ-t | participial prefix and suffix | MORPHOLOGY |
| k.'ʔak.kʰɐt / 'kʔak.kʰɐt | syllabification, stress | PHONOLOGY |

In particular, at the stage where glottal stops are inserted, prefixal /k/ does not syllabify with the vocalic onset of the stem; and it is not obvious that it does later.[9]

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[9]     Mirco Ghini suggests that this might be a case of catalexis, with the prefixal consonant actually only the coda of a syllable with a catalectic vowel. Also, remember the speculation above that, abstractly, the prefix might be a (V)C syllable, as suggested by the prosodic conditioning of prefixal zero.

Actually, syllabifications along morphological lines are somewhat unexpected, because Bavarian is among the dialects which, unlike Standard German, are able to re-syllabify final consonants of verbal prefixes with stems; compare:

| Bavarian: | Standard German: | meaning: |
|---|---|---|
| eà.RO.wàn (or: tà.RO.wàn) | er.ʔO.bern | 'occupy' |
| eà.RIN.nàn | er.ʔIN.nern | 'remember' |

Returning to the question of the nature of the [k ~ Ø] alternation, its interpretation under these circumstances is less obvious than its rationale, which is phonological (no two equally non-sonorant underlying segments in the onset), and the nature of the conditioning, which is impeccably phonological.

One possibility is that the alternation [k ~ Ø] is also phonological, with the plosive of the prefix absorbed by that of the base through total assimilation in place of articulation and ensuing degemination:

(4)    Derivation of Bavarian forms of Standard German

| *ge-bund-en* | *ge-tauf-t* | *ge-gackert-t* | *ge-koch-t:* |
|---|---|---|---|
| k-pʊntt-n | k-taɔf-t | k-kakkʰɐ-t | k-kʰɔx-t |
| 'ppʊnt.tn̩ | 'ttaɔft | 'kkak.kʰɐt | 'kkʰɔxt |
| 'pʊnt.tn̩ | 'taɔft | 'kak.kʰɐt | 'kʰɔxt |

It would be interesting to see whether there is phonetic evidence for the gemination stage, surfacing in phonological phrases where these participles follow upon a vowel (as in combination with adverbs or particles: e.g., *Hast t' Suppm àà (k)khocht* 'Have you the soup also cooked?', *Tes wiàt so umme (p)punttn* 'This is so around wrapped');[10] but that might require subtle measurements.  Historically, there indeed is such evidence (Kranzmayer 1956: 85-86):  Upper Austrian and central Bavarian varieties used to distinguish resultative participles and infinitives of such verbs by what has been called 'fortis' and 'lenis'

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| ʔfà.RACHT.tn | ver.ʔACH.ten | 'despise' |
|---|---|---|

Such re-syllabification is not consistent, however; *fà(r)-* is a prefix which sometimes does not do it, especially in novel combinations, occasioning a glottal stop (e.g., *fà.ʔÌÀN* 'lose one's way' or *fà.ʔOÀT.tnàn* 'prescribe', like Standard German *ver.ʔIR.ren* and *ver.ʔORD.nen*). The most prolific Bavarian verbal prefix *tà-* would seem to presuppose an underlying final /r/ (cf. Middle High German *der-*), but /r/ rarely shows up re-syllabified before vowels: *tà.RO.wàn* (Standard *er.ʔO.bern*) 'occupy', *tà.RAN.gln/tà.ʔAN.gln* (Standard *er.ʔAN.geln*) 'catch (fish)';  but *tà.ʔES.sn/*tà.RES.sn*  (Standard *auf.ʔES.sen*) 'eat up', *tà.ʔA.wàtn/*tà.RA.wàtn* (Standard *er.ʔAR.beiten*) 'obtain by working', etc.  Other prefixes with final consonant never re-syllabify: e.g., *iwà.ʔA.wàtn/*iwà.RA.wàtn* 'overwork', *auf.ʔES.sn/*au.FES.sn* 'eat up'.

[10]    In the manner of Swiss German which only reveals word-initial geminates postvocalically, although their source is the reanalysis of the obstruent system rather than an assimilated first segment (cf. Kraehenmann & Lahiri 2000).

consonantal onsets. These 'fortis' plosives are plausibly interpreted as underlying geminates—as in in *ppunttn* (participle) vs. *pinttn* (infinitive), *ttenkt* 'thought' vs. *tenk(h)à* 'to think'—reflecting an assimilated /k/ of the participial prefix.[11]

Otherwise the purely phonological nature of the assimilation of /k/ to a following consonant, and especially its absorption, is less clear. There are sporadic place assimilations of velars (e.g., *Werk-tag* surfacing as *Weàttåk* 'working day', or with prefix *k-*, *knummà* surfacing as *tnummà*, for Standard German *ge-nomm-en* 'taken', *k-fass-t* as *pfasst* 'captured', *k-flocht-n* as *pflochtn* 'plaited'); but there is no obligatory phonological rule of assimilation—and obligatory it would have to be to make the participial prefix vanish in examples like those in (2b).

However, another consonant, /t/, expressing the nominative/accusative definite article for singular feminine and for plural (Standard German *die*), shows assimilatory behaviour exactly parallel to that of participial /k/. It assimilates in place to initial non-plosive consonants (5a), occasions a glottal stop before vocalic onsets of stressed syllables (5b), and is absorbed by a plosive (5c):

| (5) | | Bavarian: | Standard German: | meaning: |
|---|---|---|---|---|
| | a. | tschtuTENTtn | die StuDENten | 'the students' |
| | | theenà | die Hennen | 'the hens' |
| | | pfrau | die Frau | 'the woman/wife |
| | | pmuàttà | die Mutter | 'the mother' |
| | b. | tʔuàschl | die Ursula | '(the) Ursula' |
| | c. | Taschn | die Tasche | 'the pocket/bag' |
| | | Tsentsi | die Zenzi | '(the) Crescentia' |
| | | Preissn | die Preussen | 'the Prussians' |
| | | Kruàm | die Grube | 'the pit' |
| | | Khuàh | die Kuh | 'the cow' |

Such parallelism would seem to recommend a (mor)phonological rather than an allomorphic treatment of these alternations. At the same time, it would also seem to argue against a (mor)phonological and for an allomorphic interpretation of the participial alternation when it is prosodically conditioned, as outlined in the previous section. Notice that although the article alternation is parallel when the conditioning is segmental, it is not

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[11] The Thurgovian variety of Swiss Alemannic differs from neighbouring Konstanzian Alemannic in also having underlyingly geminate onsets of such resultative participles.

subject to the same prosodic condition: /t/ does not disappear when stress is not on the following syllable (cf. *tschuTENTtn* in (5a)).

What a phonological interpretation of this instantiation of the [k ~ Ø] alternation implies is that the participial prefix lacks an underlying vowel; or else a following plosive is the first environment where it would be expected to surface (*kepunttn* etc.). And Bavarian is not among the dialects which would resort to vowel epenthesis to break up such clusters. Vowellessness (but see Footnotes 8 and 9) is indeed a plausible implication, as is seen when participial *k-* is compared with collective *ke-* and lexicalized *ke-*'s, which invariably surface with a vowel in this environment (6b).

| (6) | Bavarian: | Standard German: | meaning: |
|---|---|---|---|
| a. | tengk-t | ge-dach-t | 'thought' |
| | khiechà-t | ge-kicher-t | 'giggled' |
| | prauch-t | ge-brauch-t | 'used' |
| | plää-t | ge-plärr-t | 'shouted' |
| b. | Ketangkn | Gedanken | 'thoughts' |
| | Kekhichà | Gekiecher(e) | 'giggling' |
| | Keprauch | Gebrauch | 'use' |
| | Keplää | Geplärre | 'shouting' |
| | kepoàn | geboren | 'born' |

Other than before plosives, these other *ke-*'s elide their vowel and then look exactly like the participial prefix (e.g., *Kràffl* 'junk', *k-raffl-t* 'grated'; *Kfühl /Kfui* 'feeling', *k-fühl-t/k-fui-t* 'felt'). Other inseparable prefixes with weak vowels retain these in critical conditions too; e.g. *pe-*: *pe-pau-n* 'to build up', also prevocalically *pe-ʔeàtik-n* 'to bury', but *p-scheiss-n* 'to cheat' (lit. be-shit).

Nevertheless, although several pieces of evidence are certainly more suggestive of a purely phonological interpretation of the segmentally conditioned [k ~ Ø] alternation (total assimilation), and thus of morphological invariance, than in the case of its prosodically conditioned look-alike, assuming two equally basic and phonologically unrelated allomorphs of the participial prefix, /k/ and /Ø/, would not be at odds with the evidence nor with general grammatical principles either. If orthography is included among the relevant evidence, it might speak in favour of a zero allomorph rather than a phonological reduction of underlying /k/, on the assumption that spelling reflects allomorphy rather than regular surfacy phonology. Not only does the prosodically conditioned zero always remain unwritten in Bavarian as well as in Standard German (*\*kschtutiàt*, *\*gestudiert*); but the segmentally conditioned one too is more liable to be

omitted than to be spelled out by those literate in the dialect:[12]  e.g., *Hats dir weh tan?* 'Has it done you hurt?' (Standard *getan*), *Das Bewi hat zahnt* 'The baby has cried' (Standard *gezahnt*), *Der Kuchen wird abgielt/abkielt* 'The cake is cooled' (Standard *abgekühlt*) (Zehetner 1977: 116).


## 4. Sundry other conditioning

There is a third set of verbs in Bavarian comprising three subsets, where in light of the previous two phonological conditions one would expect the participial prefix alternant /k/ (except on two of these verbs which have initial plosives), but they are prefixed by nothing:

(7)  Bavarian:           Standard German:         meaning:
   a.  miàss-n            ge-muss-t                'had to'
      khenn-à            ge-konn-t                'been able to'
      teàff-à            ge-durf-t                'been allowed to'
      meng (← mög-n)     ge-moch-t                'liked to'
      woll-n/woi-n       ge-woll-t                'wanted to'
      soll-n/soi-n       ge-soll-t                'been supposed to'
   b.  lass-n             ge-lass-en               'let'
   c.  woà-n              (ge-)word-en             'become'

These are the modals ((7a), more verby in German than in English, hence the unwieldy translations of the non-finite forms), the main causative verb (7b), and the main inchoative verb, also used as the auxiliary of processual passives (7c).  The first two subsets belong together, and will be dealt with first.

      Although morphologically different insofar as the modals are preterite-presents (hence lack *-t* for 3rd person singular indicative present) while *lassn* is an ordinary strong verb, the first two subsets of verbs are syntactically similar.  In particular, they govern bare infinitives, and, if they are themselves governed by a main verb that would normally require a resultative participle, they may show up in the infinitive instead.  This is a familiar quirk also of the inflectional morphology of Standard German, and it has

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[12]      The same holds for the singular feminine and plural definite article [t ~ Ø];  see Zehetner (1977: 85-87).

repercussions also in syntax insofar as finite verbs in subordinate clauses with an *Ersatzinfinitiv* need not be final:

(8) a.   dass Sepp komm-en [ge-muss-t →] müss-en hat / hat kommen müssen / kommen hat müssen
that Sepp come-INF [must-PRTCPL →] must-INF has / has come must / come has must
'that Sepp has had to come'

b.   dass Sepp ihn komm-en [ge-lass-en →] lass-en hat / hat kommen lassen / kommen hat lassen
that Sepp him come-INF [let-PRTCPL →] let-INF has / has come let / come has let
'that Sepp has let him come'

This much Bavarian shares with Standard German. Where Bavarian differs is that it goes further in its use of the ersatz infinitive. For a relevant verb to be in this form it does not itself need to govern an infinitive (Standard German in second lines):

(9) a.   tass tà Sepp hoàm miàss-n håt / hoàm håt miàss-n / håt hoàm miàss-n
dass Sepp heim ge-muss-t / *müss-en hat
'that Sepp had to [go] home'

b.   tass tà Sepp eàm lass-n håt / håt lass-n
dass Sepp ihn ge-lass-en / *lass-en hat
'that Sepp let him [be]'

That is, these verbs are in a form which is, originally, the infinitive, marked by suffix *-(e)n* (with the chief alternants [n ~ ɐ] in Bavarian), whenever they are governed by a verb requiring a resultative participle, such as the auxiliaries for perfect *haben* and passive *sein* and *werden*. That the forms are, originally, infinitives also shows in the suffix, which is not the weak *-(e)t* characteristic of preterite-presents (as in the Standard German equivalents, (7a)), and in some instances also in stem shapes evidently NOT corresponding to the Standard German forms of the participles. Even the possibility of a non-final position for the finite verb is inherited from full-fledged ersatz infinitive constructions.

Now, what precisely is the conditioning factor in the case of this third instantiation of the [k ~ Ø] alternation? The answer also depends on how the alternation itself is interpreted.

If these participles with zero prefix look like infinitives, why not take them for infinitives, morphologically, and let the syntax take care of the conditioning (here known as status government)?  On this interpretation the question of morphological (in)variance of the exponence of resultative participles does of course not arise, because we are dealing with a different inflectional category, namely infinitive.  And infinitives do not take prefixes, not even zero ones.  The drawback of this analysis—and it is presumably a fatal one, despite the non-final order option for finite verbs shared by real and reduced ersatz infinitive constructions—is that the syntax is getting needlessly complicated:  main verbs normally governing resultative participles would become alternative governors of the infinitive if the governed verbs are modals or *lassn*.  So, to keep syntax simple, generalized ersatz infinitives *alla Bavarese* are better taken morphologically for what they do not quite look like—resultative participles.  This relationship between resultative participles and infinitives is of a kind to suggest that 'rules of referral' or 'take-overs' are involved (as proposed by Zwicky 1985, 1991 and Carstairs 1987):  syntactic government demands a resultative participle, and if the verb filling such a position is a modal or *lassn*, the morphology is referred to the infinitive, which is inputted to the phonology.

The alternation, thus interpreted, falls within the remit of morphology rather than phonology.  As to the conditioning, under the circumstances, despite the alternants themselves being the same as before, [k] and [Ø], there is no phonological rationale for zero to show up where it does (modals, *lassn*), and this would also seem to place the burden on morphology.  Inspired by the provenance of these prefix-less participial forms and armed with rules of referral or take-over, the extremest morphological interpretation would be not to assume a prefixal exponent which is zero but not to assume one at all.  The inaudible and invisible alternant of /k/ could thus have yet a third status:  apart from a segment which is phonologically disembodied (as probably in (2b) and perhaps (1b)) or a zero allomorph (as probably in (1b) and perhaps (2b)), it might simply be nothing, with participial formation of modals and *lassen* entrusted exclusively to the suffix.

As long as the conditioning is not assumed to be done by the syntax, the relevant verbs themselves have to be held responsible.  The lot of them is not fully identifiable morphologically:  most belong to the morphological class of preterite-presents, but *lassen* does not.  Identifying them syntactically, on the other hand, would be over-inclusive:  the preterite-presents and *lassen* share the syntactic properties of governing bare infinitives (non-bare infinitives in Bavarian are more nominal than those of Standard German) and of themselves appearing in ersatz infinitive form, but so do verbs of perception, notably *seng* 'see' and *heàn* 'hear', and they have regular prefixed participles (*k-seng*, *k-heàr-t*).  So, 'ersatz infinitive verbs other than verbs of perception' would be the complex criterion singling out the right set;  so would 'preterite-presents plus the unmarked causative verb',

but this would leave the condition of the ersatz infinitive unmentioned, which is at least historically syntactic. Actually, matters are even more complex insofar as there is some intradialectal variation. Especially in rural varieties of Bavarian some of the modals also permit the regular genuinely participial forms: *khinn-t* besides *khennà* 'been able to', *teàff-t* besides *teàff-à* 'been allowed to' (both with regular segmentally conditioned zero prefix), *k-miàss-t* besides *miàss-n* 'had to', *k-mech-t/k-mikk-t* besides *meng* 'liked to'; *k-lass-n* besides *lass-n* seems an option everywhere. It is certainly less plausible to blame such variation, limited to a few lexical items that hardly form a natural (sub-)class, on the phonology than on rules of referral or plain allomorphy.

Inchoative-passive *woà-n* (7c) is different, insofar as there is no infinitive connection, neither morphologically (the infinitive is *weà-n*) nor syntactically. In Standard German, *werden* takes or resists *ge-* for its resultative participle depending on whether it is inchoative (10a) or passive (10b):

(10)  a.  Sepp ist alt ge-word-en
         'Sepp has grown old'
     b.  Sepp ist gesehen word-en
         'Sepp has been seen'

Bavarian appears to have generalized the unprefixed form. With *weàn* joining the modals (preterite-presents) and *lassn*, this set of verbs whose zero or missing participial prefix is not conditioned phonologically acquires a different corporate identity. Membership is now by individual merit (i.e., lexically conditioned) rather than contingent on syntactic and morphological conditions (ersatz infinitive, preterite-presents). Still, what syntactically unites these individuals is their auxiliarihood; but then *håm* 'to have' and *sei* 'to be' are not part of the club (and *toà* 'to do' has zero prefix for phonological reasons).

Notice, incidentally, that the verbs in this superset, however heterogeneous, which have no participial prefix for other than phonological reasons, all share the strong suffix allomorph, appearing as [n] or [ɐ] depending on the stem-final segment (even if in the case of the preterite-presents it is of (ersatz) infinitival origin). Theoretically, having bipartite inflections, words could associate differently in inflection classes for the two parts; here they don't.

## 5. A conspiracy to do away with a prefix

Bavarian has gone further than Standard German in getting rid of something only introduced not such a long time ago:  a prefix for non-finite verbal inflection.  In Germanic, *ga-* had originally been a marker of perfective Aktionsart, appearing on finite forms of verbs to be perfectivized as well as on non-finite ones.[13]  Resultative participles being in essence perfective, it was kind of natural of some Germanic languages including German to employ *ga-* as an obligatory inflectional exponent of this category of non-finiteness.  Initially, up to Middle High German times, inherently perfective verbs (with meanings like 'bring', 'come', 'find', 'become') tended to resist such prefixation also of their participles, but eventually the prefix *gi-/ge-* was generalized to all verbs regardless of meaning and segmental and suprasegmental phonology (*ge-stuDIER-T, ge-tromPEt-et*, etc.).  Upon which this seemingly successful inflectional acquisition fell into disfavour.

As outlined in the preceding sections, essentially three kinds of measures, not easily distinguished regarding their phonological and/or morphological or also syntactic nature, were taken in Bavarian (and Alemannic) to wear down old *ga-*.  First, phonology was permitted to weaken and even dispose of the segmental substance, first vocalic then consonantal, of this inflectional exponent.[14]  Second, main stress too far away was an incentive to let the prefix vanish, perhaps allomorphically rather than phonologically.  Third, and perhaps most remarkably, the prefixless ersatz infinitive, of originally rather narrowly circumscribed syntactic use, was seized on as a wholesale cover-up for the participial form of high-frequency auxiliary verbs.  One and a half of these three measures are also in evidence in Standard German.  In Low German something else was done, whose effect was even more destructive than what was achieved in Bavaria and the rest of the deep south:  having lost the initial consonant, the participial prefix *e-* [ə] was enclitically associated with the preceding constituent rather than with the verb stem, and then the inconspicuous appendage got lost.

What is the meaning of it all?  A mistake had been made, grammaticalizing a prefix in verbal inflection.  In languages of Germanic cut, inflection by prefix, or actually circumfix, is too wide of the mark to qualify as what might be called "systemangemessen".

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[13]     See Paul (1917: 276-279) for a succinct version of the whole story.

[14]     Curiously, as reconstructed by Kranzmayer (1956: 85-86), the sequence in which /ke-/ got reduced to /k-/ in different segmental environments, creating consonant clusters in syllabic onsets, does not seem to have followed the sonority hierarchy:  it was first licensed by stem-initial /s/, then by /f/, then by /h/, and last by liquids, nasals, and glides.

**Acknowledgments**

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