Verbal inflection and the structure of IP in German

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Abstract

The structure of the German IP is, in contrast to appearances, a poorly investigated area. This paper persues the issue from the perspective of verbal morphology. The existing paradigms are taken stock of and arranged in tables following basic structuralist guidelines. Adopting the general assumption that morphologically realized categories are represented syntactically in the form of functional projections, it is argued that the linear order of morphemes reflects a uniformly right-headed structure of IP. It is also argued, on the basis of prefixes, that words are formed of affixes and stems in an independent morphological component, and that syntactic movement is triggered exclusively by the features born by the words thus assembled. As a consequence of the analysis, we can dispense with excorporation, forcing also specific assumptions about verb-particle combinations, which are independently called for.

1. Derivational morphology

a. Verbalizing affixes. There are a number of ways in which a lexical element may show that it is a verb in German. Distributionally, verbal inflection makes an element identifiable as a verb, and for underived verb-stems, this is the only visible verbal characteristic. We find, however, also a large number of morphologically complex verbs, identifiable as such by various morphemes, to which we turn now.

Verbs can be derived by means of prefixation (a), suffixation (b), a combination of the two (c), or by zero-derivation (d). In (1), these possibilities are exemplified by de-nominal verbs.

(1) a. **[ent-[haupt]$_N$]$_V$-en**
pref.-head-inf
"to decapitate"

b. **[[marsch]$_N$-ier]$_V$-en**
march-suff.-inf.
"to march"

c. **[ver-[barrikad]$_N$-ier]$_V$-en**
pref.-barricade-suff.-inf.
"to barricade"

d. **[[dampf]$_N$]$_V$-en**
steam-inf.
"to steam"

Naively following structuralist guidelines, the pattern in (1) calls for two optionally realized verbalizer slots: the prefix and the suffix, and, rather than (1), we will be dealing with representations like those depicted in (2), generalizing the richest pattern (1c) by the assumption of zero prefixes and zero suffixes where no such morphemes are visibly present:

(2) a. [ent-[haupt]$_N$-ø]$_V$-en
b. [ø-[Marsch]$_N$-ier]$_V$-en
c. [ver-[barrikad]$_N$-ier]$_V$-en
d. [ø-[dampf]$_N$-ø]$_V$-en

The structures in (2) are unsatisfactory in several respects. First of all, they do not account for why the respective slots may remain empty in some cases, but not in others. Second, they assimilate apparently different types of empty morphemes: in (d), at least one of the two zero-affixes will be contentful in that it changes the category of the base it attaches to; it has a function. The zero-affixes in (a) and (b), on the other hand, are redundant in this sense. And third, (2) does not account for the robust generalization stated by Williams (1981:248) as the Righthand Head Rule:

> *"In morphology, we define the head of a morphologically complex word to be the righthand member of that word."*

If Williams is right, then we can simplify (b) and (d), dispensing with redundant empty prefixes, but we still have no account of the relation between the prefix and the suffix, and, more generally, about the function of the prefix in (a) and (c):

(3) a. ent-[[haupt]$_N$-ø]$_V$-en
b. [[marsch]$_N$-ier]$_V$-en
c. ver-[[barrikad]$_N$-ier]$_V$-en
d. [[dampf]$_N$-ø]$_V$-en

Bok Bennema (1994) addresses exactly this issue for categoy-changing prefixes in Dutch. According to her, unseparable verbal prefixes are aspectual modifiers in (morphological) specifier positions. Thus, she cashes out two major advantages.

First, while morphological complement-head relations and adjunct-head relations have been established as necessary, the component regulating such relations, X'-theory, had not been assumed to hold in its full generality in morphology, leading to a duplication of structure-building mechanisms: one morphological, the other syntactic. By generalizing X'-theory to morphology, Bok Bennema dispenses with this duplication.

Second, Bok Bennema offers a straightforward account of the position and function of the prefixes in (a) and (c) above: they are specifiers agreeing with the verbalizing head.[1]

1. The issue of the nature of this agreement relation will be addressed below.

(4)

	V^{max}		
Spec		V'	
(prefix)	N/A		V
	root		*(ier)*

b. Root verbs. Suppose now we generalize Bok Bennema's morphological structure to all verbs. A straightforward way to do so would be to just drop the N/A root complement and insert the V-stem under the head V. Such an implementation does not seem empirically adequate, however.

First notice a problem which already weakens the mechanics of Bok Bennema's original structure in (4), as applied to German. According to her, the prefix is an *aspectual* specifier. Thus, if aspect were to be represented in grammatical structures by a functional category, then, by spec-head agreement, the prefix should occupy the specifier of Asp, rather than the specifier of V. Corresponding with this, at least in German, the morpheme *-ier* has a clear aspectual (i.e., *aktionsart*) meaning: it maps the state or object denoted by the nominal or adjectival root on a verbal activity (we will directly return to the issue). And, finally, prefixation of the type discussed above is most productive with verbal roots (5).

(5)

a.	ver-schwör-en		c.	er-geb-en	
	pref.-swear-inf.			pref.-give-inf.	
	conspire			surrender	
b.	ent-lass-en		d.	zer-brech-en	
	pref.-let-inf.			pref.-break-inf.	
	dismiss/release			break (to pieces)	

Should simplex verb stems be treated as roots, inserted as complements of an abstract verbalizer, or rather as lexical counterparts of the verbalizing (aspectual) suffix?

To clarify the issue, let us broaden our view and take into account verbalizing suffixes other than *ier*. In a descriptive study, Wellmann (1973) discusses the verbalizations in *-(is)-ier-*, *-(e)-l-*, *-ig-*, *-(e)-r-*, and *ø*.

In Wellmann's charts (p.28-39), we find that the most productive *ø* verbalizer consistently adds a process- or activity meaning to the root it attaches to. *ø* verbalizations denote changes of state (a) or place (b) towards an endpoint (c), or away from an initial state (d), and processes or activities around the N/A denotation (e).

(6) a. tagen
to dawn

b. landen
to land

c. rahmen, dunkeln
to frame, to darken

d. häuten, schälen
to skin, to peel

e. flöten, bangen, schriftstellern
to (play the) flute, to worry, to write

The verbalizer *-(is)-ier-(en)* consistently adds an agent to the denotation of the root, generating bounded (a) or unbounded (b) action denotations:

(7) a. amnestieren, karamelisieren, gelieren, exilieren
to amnesty, to caramelize, to gelatinize, to exilize

b. stolzieren, nomadisieren, moralisieren
to parade, to nomadize, to moralize

The verbalizer *-ig-(en)* derives verbs that denote the application of a state (a) or property (b) to an object by an agent. Roughly, *-ig-(en)* generates causative applicatives.

(8) a. peinigen, schädigen, steinigen
to pain, to harm, to stone

b. festigen, reinigen
to streangthen, to clean

One class of *-(e)l-(n)* verbalizations has the same applicative meaning we find in the *-ig-(en)* cases, except for the agent; let us call them inchoative applicatives (a). A second class denotes iterative actions (b):

(9) a. ähneln, älteln, kränkeln
to resemble, to become old, to be sickly

b. fächeln, stückeln
to fan/flutter, to cut into pieces

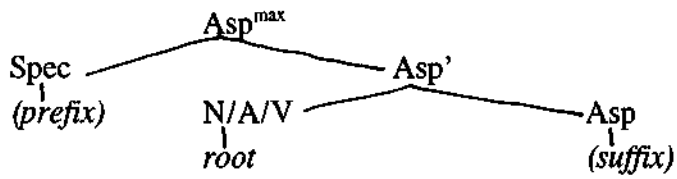
This leaves us with the extremely rare *-(e)r-(n)* verbalizations. The three instances I could find in Wellmann, *wildern* (to poach), *äschern* (to reduce to ashes/to dispose of cigarette ashes) , *kälbern* (to calve) are clearly agentive verbs denoting an activity which eventually leads to the presence of an N.

Not as a surprise, of course, we can see that in all cases, the verbalizing morphemes add information about event-structure to the meaning of non-verbal roots. The *ø* affix simply adds the information that we are talking about an event, not a property or object. *-(is)-ier-* adds the information that we are talking about an event with an agent, *-ig-* derives causative applicatives, *-l-* generates inchoative applicatives and iteratives, and *-r-* relates objects to activities which lead to their appearance.

Notwithstanding, all but the *ø* suffix and, to a lesser degree *-(is)-ier-* are very weakly productive. Probably, the words derived by at least *-ig-*, *-l-* and *-r-* are listed. Nevertheless, it is reasonable to assign morphological structure even to items which are listed in the lexicon (cf., among others, Williams, 1981). In our case, the affixes are both segementable, and they consistently add *aktionsart* features to a stem. We therefore adopt the theoretically desirable hypothesis that the verbalizing morphemes in German are *aktionsart* (Asp) heads.

Consequently, we substitute Bok Bennema's (4) for (10), still disregarding the infinitive marker *-en*. On the further assumptions that (i) Asp is a functional category and (ii) functional heads obligatorily select for lexical categories, our theory forces an answer to the question of where simplex verb stems are inserted: as lexical elements, they have to be inserted in the position of roots, as a complement to Asp.[2]

(10)



c. The in-between cases: proclitic infinitive and participle markers. Both the infinitive and the participle are 'normally' marked by what has become known as circumfixes: a full infinitival form consists of the element *zu* (to), the verb stem, and the suffix *-en*. Participles are regularly built up by the prefix *ge*, the verb stem, and the suffix -t or *-en*. The pattern is not as simple, however.

Turning first to *ge-*, we notice that it never appears in the presence of a prefix:

(11) a. Hans ist *ver*zogen
Hans is pref.-moved$_{participle}$

2. We will not, in this paper, make claims on the aktionsart status of simplex verbs. Of course, simplex verbs carry information about the structure of the event they denote. That fact could be encoded in various ways, however. We tentatively suggest to represent simplex verbs as morphologically unstructured elements bearing both V and *aktionsart* features, which are checked in syntax against the V and Asp heads, respectively.

"H. has moved out."

b. *Hans ist ver-*ge*-zogen

c. *Hans ist *ge*-ver-zogen

From a historical perspective, this is not a surprising observation. Already Streitberg (1891) analyzed Gothic *ga-* (the ancestor of German *ge-*) as an *aktionsart*-marker, and Marcq (1981) points out that the other verbal prefixes are of a similar origin: both *ge-* and the other (unseparable) prefixes have developed from prepositional elements prefixed for aspectual (i.e., *aktionsart*) reasons. The synchronic status of *ge-* is different from the status of the other prefixes only in that its distribution is limited to participial verbs, and its meaning (intensifier) has been lost. Its complementarity with the other prefixes, however, suggests that its taxonomic status is still the same as the one of the other prefixes: a morphological specifier of Asp:[3]

(12) [[*ge*-V]-part]

An immediate consequence of the bracketing in (12) is that morpho-phonological and phonological rules will not affect the V+participle-suffix sequence to the exclusion of the prefix.

It is empirically hard to identify relevant contexts. The apparently deciding case of strong verbs does not decide the issue directly: like weak verbs, strong verbs obligatorily carry a participial suffix, in most cases *-en*. Thus, the prediction cannot be falsified, but the data do not support it either.

Note, however, that there is a (diachronic) tendency for the strong participle suffix *-en* to be replaced by the weak participle suffix *-t* (cf. Bittner, 1996). If we find cases where

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3. Kiparsky (1973) argues against a syntactic account of the distribution of *ge*. According to him, we are dealing with a phonotactic constraint: *ge-* is banned to the left of an unstressed syllable. Thus, the participles in (i) lack the prefix, and its appearance in (ii) corresponds with the placement of stress:

(i) a. (*ge-)marschíert b. (*ge-)trompétet

(ii) a. (*ge-)liebkóst b. *(ge-)líebkost

Notice, however, that this phonotactic constraint does not explain the whole range of data, since, as Kiparsky himself notes, *ge-* is also lacking to the left of stressed (unseparable) prefixes:

(iii) a. (*ge-)míßverstanden b. (*ge-)míßinterpretiert

Thus, while the stress constraint seems to be needed as an additional condition on *ge-*, the syntactic account suggested in the main texts remains unchallenged.

the strong suffix has got replaced by the weak suffix, while the stem-vowel still shows *ablaut*, we have found a case of an allomorphic rule affecting the participle suffix to the exclusion of the [*ge*-V] sequence, thus supporting the bracketing of (12). If the change of suffix always corresponds with the loss of *ablaut*, (12) seems less plausible.

Indeed there are cases of participles formed with *ablaut* and *-t*. In Bittner (1996:84), we find *brennen* (burn), *bringen* (bring), *dürfen* (may) and *wissen* (know), but no instance of a verb with *-en* and *ablaut* failing to apply[4]. We conclude that the apparent participle circumfix is in fact a more complex element consisting of a participle suffix and a prefixed-verb as its complement.

(13)

infinitive	*participle*
brenn-en	ge-brann-t
bring-en	ge-brach-t
wiss-en	ge-wuss-t
dürf-en	ge-durf-t

Since *ge-* is not a participle-marker in our theory, we predict that there are participles without a prefix. This is the case: the passive of the *perfect, past perfect* and *future II* tenses (cf. section 2.d. for discussion) are composed (among other material) of a main verb prefixed participle and an unprefixed participle of the voice auxiliary (a, b). Only in the adjectival passive, the prefix may show up to the left of the copula (c).

(14) a. das land ist/war geteilt **(*ge-)worden**
the country is/was split pref.-become
"The country was/had been split."

b. das land wird geteilt **(*ge-)worden** sein
the country will split pref.-become be
"The country will have been split."

c. das land ist/war geteilt **ge-wesen**
the country is/was split pref.-been
"The country is/was split."

It follows also that the presence of a *ge-* indicates the presence of an Asp head. Since the Asp head is a verbalizer, i.e., it derives lexical verbs, its presence indicates that a given

4. This is, of course, to the exclusion of strong verbs displaying a participial stem-vowel which is identical with the base form by historical coincidence, like in *geben (ge-geb-en), laufen (ge-lauf-en), fahren (ge-fahr-en), mahlen (ge-mahl-en)*. Bittner (1996:84) classifies these as "ø", not "-" ablaut.

element is a full verb, not an auxiliary.

Correspondingly, we have to deal with a VP-auxiliary combination (i.e., a simple verbal predicate) in the case of verbal passives (14a, b), but with an AP-V combination (i.e., secondary predication) in the case of adjectival passives (14c). Our morphological argument has forced an analysis which has already been firmly established on syntactic and semantic grounds (cf. Kratzer, 1994).

In contrast to the participle-prefix, the infinitive marker *zu* is fully compatible with prefixes. From this we conclude that it occupies a higher position, yet to be determined. We will return to the issue in section 2.2.

(15) a. Hans hat es vorgezogen, **zu *verziehen***
Hans has it preferred to pref.-pull
"H. preferred to move out."

b. Hans hat vergessen, sein kind **zu *erziehen***
Hans has forgotten his child to pref.-pull
"H. forgot to educate his child."

c. Wir haben unsere Angestellten **zu *ent*lohnen** vergessen
we have our staff to pref.-pay forgotten
"We forgot to pay our staff."

2. Inflectional morphology

2.1. The taxonomic situation

Traditional grammars of German recognize five inflectional categories realized on verbs: person, number, tense, mood and voice. Let us consider these paradigms in turn, following the description in Eisenberg (1986).

It should be borne in mind throughout the discussion that German distinguishes two major classes of verbs, called after Jacob Grimm *strong* and *weak* verbs. The class of strong verbs consists of a closed number of highly-used items inflected by unproductive *ablaut* rules plus, in some cases, affixation. Weak verbs inflect productively by means of affixation (cf. Bittner, 1996 for a detailled overview of both classes). In the present discussion, the main emphasis will be put on weak verbs, ignoring morphological peculiarities of strong verbs whenever the argument allows it. We will also ignore phonologically conditioned phenomena like, mainly, vowel-*ø* alternations.

a) Person and number are realized in German by a single paradigm distinguishing first, second and third person in the singular and the plural. There is no segmentable number

morpheme, nor do the respective person-markers coincide in the singular and plural. We shall therefore talk of (subject-) agreement (*agr*), rather than person and number. Agr is always realized on the right edge of the finite verb. We find two patterns[5], contingent on the choice of tense, exemplified with the weak verb *reden* (speak) in (16a) and with the strong verb *gehen* (go/walk) in (16b):

(16)

		present		past	
a.		sg.	pl.	sg. pl.	
	1.	red-**e**	red-(e)**n**	redete-**Ø**	redete-**n**
	2.	red-(e)**st**	red-(e)**t**	redete-**st**	redete-**t**
	3.	red-(e)**t**	red-(e)**n**	redete-**Ø**	redete-**n**
b.	1.	ge(h)-e	ge(h-e)**n**	ging-**Ø**	ging-(e)**n**
	2.	ge(h)-**st**	ge(h)-**t**	ging-**st**	ging-**t**
	3.	ge(h)-**t**	ge(h-e)**n**	ging-**Ø**	ging-(e)**n**

b) Tense. The traditional grammars, including Eisenberg (1986), list up six tenses in German: *present, past, future I, perfect, past perfect* and *future II*. Let us consider the examples in the embedded word order, in which the verb and the auxiliaries appear adjacent to each other:

(17)

present	daß	du	**rede-st**	
	that	you	speak-2sg	
past	daß	du	**red-ete-st**	
	that	you	speak-PAST-2sg	
future I	daß	du	**red-en**	**wirst**
	that	you	speak-inf.	will-2sg
perfect	daß	du	**ge-red-et**	**hast**
	that	you	spoken	have-2sg
past perfect	daß	du	**ge-red-et**	**hattest**
	that	you	spoken	have-PAST-2sg

5. Additionally to the suffixes given in the text, strong verbs may use shifts in the stem-vowel to indicate a certain person and number. Since these markings are both unproductive and redundant, we will ignore them from now on.

(i) ich gebe — I give (ii) du gibst — you give

futute II	daß	du	**ge-red-et**	**haben**	**wirst**
	that	you	spoken	have-inf	will-2sg

Setting aside the issue of auxiliary selection (some verbs cooccur with the auxiliary *sein* (be), instead of *haben* (have)), we get the following pattern (the elements combining in morphological words are boxed in bold-face):

(18)

present		stem						pres agr
past		stem					past $_{TE}$	past agr
fut1		stem			inf $_{-en}$	aux $_{WERD}$		pres agr
perf	pref $_{GE}$	stem	part suff $_{T}$	aux $_{HAB}$				pres agr
past perf	pref $_{GE}$	stem	part suff $_{T}$	aux $_{HAB}$			past $_{TE}$	past agr
fut2	pref $_{GE}$	stem	part suff $_{T}$	aux $_{HAB}$	inf $_{-en}$	aux $_{WERD}$		pres agr

Since they are composed of up to three lexical in particular morphological shapes, it is unlikely that all these tenses were represented under a single T-node in morphological structure. We can also see that the finite verb is marked for no more than two tenses: present and past. All other tenses (the so-called *analytical* tenses) are composed of a finite auxiliary *in the present or past tense* plus non-finite items.

c) Mood. German morphology distinguishes between indicative and subjunctive mood, where subjunctive is overtly marked on the finite verb. We therefore get two subjunctives forms: present and past. The other subjunctive "tenses" are formed using auxiliaries according to the table in (18) again. In (19a), we give the regular pattern of the weak verb *reden* (speak), in (19b) the particular pattern exhibited by the strong verb *werden* (become), whose past tense stem is *wurd-*.

(19) a. weak verbs

present *past*

	sg.	pl.	sg.	pl.
1.	**rede**	**reden**	**redete**	**redeten**
2.	**redest**	**redet**	**redetest**	**redeten**
3.	**rede**	**reden**	**redete**	**redeten**

b. strong verbs

	present		*past*	
	sg.	pl.	sg.	pl.
1.	**werde**	**werden**	**würde**	**würden**
2.	**werdest**	**werdet**	**würdest**	**würdet**
3.	**werde**	**werden**	**würde**	**würden**

According to Eisenberg (1986), subjunctive is encoded by affixing past agr to the present and past stems, respectively, and, additionally, by *umlaut* in strong verbs. According to him, therefore, German does not have a segmentable morpheme corresponding unambiguously to a specification of mood.

Notice, however, that the past agr markers as given in (16) are *ø* for first and third person singular. That had made it possible to generalize the agreement paradigm across strong and weak verb classes. In the present subjunctive, however, a *schwa* shows up obligatorily. What is more, its presence cannot be attributed to phonological factors: it surfaces even on verbs ending in a vowel, as shown by the present subjunctive forms of the weak verb *schauen* (look) in (20a) and the strong verb *tun* (do) in (20b). To facilitate a comparison, we give the respective indicatives in parentheses.

(20)	*present*		*past*	
a.	**schau-e**	(schaut)	schaute	(schaute)
	$look_{3sg\ pres\ subj}$	$look_{3sg\ pres\ ind}$	$look_{3sg\ past\ subj}$	$look_{3sg\ past\ ind}$
b.	**tu-e**	(tu-t)	täte	(tat)
	$do_{3sg\ pres\ subj}$	$do_{3sg\ pres\ ind}$	$do_{3sg\ past\ subj}$	$do_{3sg\ past\ ind}$

We therefore follow Bittner's (1996:56) tentative proposal that there is in fact a subjunctive marker E sandwiched between agr and tense (cf. table (22)).[6]

6. The manifestation of the subjunctive marker is not always overt. In the past forms, it merges with the final *schwa* of the regular (weak) past tense marker *-te-*, or with the stem-vowel of strong verbs in the form of *umlaut*, respectively. We sketch the situation, *without making claims about synchronic phonology*, as follows:

So much being said, note that the use of this subjunctive paradigm is decreasing. Instead, the speakers of German tend to use analytical forms composed of the subjunctive of the auxiliary *werden* (will) plus an infinitive marker on the element to its left. Incidentally, the subjunctive auxiliary *werden* is in complementary distribution with the homophonous future auxiliary. Thus, we get either a future tense, or an analytical subjunctive, but no analytical future subjunctive, as shown in (21):

(21) a. Hans *werde* arbeiten
H. would$_{pres.subj.}$ arbeiten

b. Hans *würde* arbeiten
H. would$_{past.subj.}$ work will

c. Hans *wird* arbeiten
H. will$_{fut.ind.}$ work

d. *H. *würde/werde* arbeiten *werden*

Of course, such a complementarity does not come as a big surprise. It has often been argued that future is in fact not a tense, but a modality (cf. Leiss, 1986:191-219 for an overview on the discussion about German future[7]). The morphological distribution undoubtedly supports such a hypothesis, especially since, as was noted above, there is no affix in the distributional slot marking future, and future *werden* inflects for present tense.

Thus, we arrive at the subjunctive paradigm (7) assimilating the forms of *analytic present* and *future I* as well as those of *analytic perfect* anf *future II* (optional elements are doubly marked by parentheses and italics):

	weak	strong
present	stem + E + past agr	stem + E + past agr
past	stem + TE + E + past agr => stem + TE + past agr	stem$_{[+ ablaut]}$ + E + past agr => stem$_{[+ ablaut, +umlaut]}$ + past agr

7. Leiss (1986) admittedly comes to the conclusion that German future were a tense, not a modality. Her arguments are mainly semantic, however, and she does not consider the incompatibility of the *werden*-subjunctive with future tense, nor does she attribute much significance to the morphological shape of the future aux, which is inflected for present tense.

(22) subjunctive

present/ fut1		stem			*(inf*	*aux WERD)*		E	past agr
		stem			inf	aux WERD		E	past agr
past		stem			*(inf*	*aux WERD)*	past	(E)	past agr
perf	pref GE	stem	part	aux HAB	*(inf*	*aux WERD)*		E	past agr
past perf/ fut2	pref GE	stem	part	aux HAB	*(inf*	*aux WERD)*	past	(E)	past agr
	pref GE	stem	part	aux HAB	inf	aux WERD		E	past agr

d) Voice. The passive voice is composed of the past participle of the main verb and the auxilary *werden* (become/be) which is inflected in the usual form for all tenses. Analytic past tenses uniformly select for the auxiliary *sein* (be), instead of *haben* (have). Participial forms of the auxiliary *werden* do not allow *ge*-prefixation (cf. section 1.c.).

(23) a. **geteilt wird**
split is-3sg ("is split")

b. **geteilt wurde**
split was-1,2,3sg ("was split")

c. **geteilt werden wird**
split be will-3sg ("will be split")

d. **geteilt (*ge-)worden ist**
split been is-3sg ("has been split")

e. **geteilt (*ge-)worden war**
split been was-1,3sg ("had been split")

f. **geteilt (*ge-)worden sein wird**
split been be will-3sg ("will have been split")

In (23c, f), we immediately observe that passive *werden* does not occupy the distributional space of modal/future *werden*: they co-occur. Furthermore, we can see that passive *werden* occurs to the immediate right of the participial verb stem, and that it can be inflected as a participle itself, leading to table (24) (again, with morphological words in bold-face boxes):

(24) passive

			$part_V$	voice aux	$part_{AUX}$	prf aux	inf	modal aux	tns	mood	agr
pres	GE	stem	T	werd							pres agr

past	GE	stem	T	werd					TE		past agr
fut1	GE	stem	T	werd			-en	werd			pres. agr
perf	GE	stem	T	werd	T	sei					pres. agr
past perf	GE	stem	T	werd	T	sei			TE		past agr
fut2	GE	stem	T	werd	T	sei	-en	werd			pres.agr

(24) does not exhaust the possibilities. Next to verbal passives, German has adjectival passives, formed as exemplified under (25):

(25) adjectival passives:
daß das band
that the ribbon

a.	**abgeschnitten**	**ist**	pres.
	cut	is	
b.		**war**	past
		was	
c.		**gewesen ist**	perfect
		been is	
d.		**gewesen war**	past perf.
		been was	
e.		**sein wird**	fut I
		be will	
f.		**gewesen sein wird**	fut II[8]
		been be will	

It has been argued above (in section 1.c.), however, that the adjectival passives differ substantially from verbal passives. First of all, they use the copula *sein* instead of the voice-auxiliary *werden*. Second, the presence of the prefix *ge-* on a participial form was argued to indicate the presence of Asp, i.e., in the terminology of table (24), a V-stem. Thus, adjectival passives are composed of an AP (not a verbal) participle and a copula V, and we

8. Note the strong modal flavor of this form. While, in isolation, it sounds odd, if not impossible, it is clearly fine in the following example pointed out by Christine Czinglar (p.c.):

(i) Jaja, das Band wird abgerissen gewesen sein, sicher, glaubt dir jeder!
sure the ribbon will cut been be, sure, believes you everybody,
"sure, the ribbon was cut, everybody believes this"

do not need to introduce an extra column corresponding to a prefix of a voice-auxiliary. Such a column would not be allowed by the theory of derivational morphology argued for above.

e) *Infinitives*. Alas, we appear to be forced to a much worse complication of (24) in the face of infinitival V-clusters:

(26) *active infinitives*
Hans verspricht
H. promises
a. die Arbeit auf-**zu**-schieb-**en**
the work post-ZU-pone-inf.
"to postpone the work"
b. die Arbeit **auf-ge-schob-en zu** hab-**en**
the work post-GE-poned-part. ZU have-inf.
"to have postponed the work"

(27) *passive infinitives*
Hans gibt zu,
H. admits
a. **ge-schund-en zu** werd-**en**
GE-torture-part ZU be-inf.
"to be tortured"
b. **ge-schund-en word-en zu** sei-**n**
GE-torture-part be-part. ZU be-inf.
"to have been tortured"

Recall that it was argued in section 1.c. that the infinitive marker *zu* is attached to V outside the position of the prefix. Therefore, we will have to insert its taxonomic column to the left of the prefix-column of (24).

At the same time, (26b) and (27a, b) force us to save space for the entire *stem-voice-participle* chunk of (24) to the left of *zu*, and we arrive at the maximal pattern, with identical sequences to the left and right of *zu* boxed in bold-face:

(28) the naive-view pattern

prf	stm	prt	voice aux	prt	*zu*	prf	stm	prt	voice aux	prt	perf aux	inf	mod aux	tns	mood	agr

2. Qualms regarding *zu*

a) The duplication problem. After having listed up the existing patterns and having arrived at a fairly long list of possible items and their arrangement, let us now turn to a clear shortcoming of this list: the duplication of an apparently identical pattern around the infinitive marker *zu*.

As noted several times above, the pattern depicted in (28) holds beyond the word-level. It is, thus, not only a morphological, but also a syntactic ordering. In agreement with the assumptions of (i) morphological rightheadedness (cf. Williams, 1981) and (ii) that inflectional suffixes correspond to functional heads c-commanding the stems which carry them, we can conclude that (28) mirrors a uniformly right-headed syntactic structure. As in word-internal configurations, linear precedence corresponds to syntactic subordination in the German verb cluster.[9]

From being just embarrassing, the duplication around *zu* now leads to a structural paradox: if (28) represents the clausal spine of functional projections, the duplicated constituents both c-command and are c-commanded by *zu*.[10] We will have to get rid of that duplication.

First, consider the morphological status of *zu*. Although German orthography treats this element as a separate word, it can never be separated from the infinitival V-stem (29a, b).

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9. The reader will immediately note that German allows departures from this ordering (and, in some varieties, forces them) in the context of verb-raising, as in (i, ii):

(i) weil er hat kommen müssen
cause he has come must
(ii) weil er kommen hat müssen
cause he come has must
("cause he had to come")

These orderings are most probably derived by movement, though. Since the permutions may involve certain low NPs too (iii, iv), the movement is possibly XP, not head-movement, and, as such, not directly relevant to the morpholo- syntactic considerations of the main text.

(iii) weil er mir hat die leviten lesen wollen
cause he me has the levites read wanted
(iv) weil er mir hat wollen die leviten lesen
cause he me has wanted the levites read
"cause he wanted to read me the riot act"

10. Or else, morpho-syntactically and semantically identical material must be assumed to be distinct when it appears at the opposite side of *zu*, or else, *zu* is unordered with respect to the duplicated structure - both equally unwelcome assumptions.

This is true even for particle-verbs (which are sometimes analyzed as compound verbs, but cf. below):

(29) a. auf-zu-stellen
up to put
b. *zu auf-stellen
to up put

We conclude from this, that *zu* is an affix, not a morphological word[11]. Since *zu* precedes the infinitival stem, it is a prefix (cf. the same assumption in Haider (1993:234), etc.).

Now, prefixes have been argued in section 1. to occupy morphological specifier positions. Therefore, prefixes do not project further like suffixes do. What projects further is the head they specify.

Therefore, if we consider structures rather than linearizations, then we may dipense with prefixes and simplify (28) to (30), with the pending question which head the infinitive prefix specifies. (30) can be taken as a right-headed syntactic structure incorporating the analysis of verb stems from above.[12]

(30)

V	ASP	PART.1	VOICE	PART.2	PERF	INF	MOD	T	MOOD	AGR

b) Prefixation and V-to-I movement. The null hypothesis, of course, is that an infinitive prefix specifies an infinitive head. The question is not as trivial, however.

From the point of view of the morphological patterns discussed above, *zu* has to appear no lower than to the left of Perf: in the presence of a participial voice auxiliary, *zu* follows the latter. But how high up in the structure may *zu* appear?

(30) tells us nothing about that question. The reason is that, so far, we have not considered the availability of head-raising.

Assume, for the sake of the argument, that *zu* specifies Inf. The pattern we get

11. For that matter, it could also be a clitic. But since we assume the existence of a theory of morphology licensing word-forms independently of their origin (as is argued for in Baker, 1988; Borer, 1988; 1997; etc.), the distinction is irrelevant.

12. Instead of the descriptive terms used above, (30) also used abbreviations to name the syntactic domains corresponding to taxonomic spaces. We do not commit ourselves, however, to claims about the typological or semantic status of these sites.

without the application of head-raising is (31), which is always ungrammatical:

(31) * verb > part.1 > voice.aux > part.2 > perf.aux > *ZU* > inf

We learn two things from the ungrammaticality of (31). First, it is necessary to assume a rule of V-to-I movement operating in German. The highest verbal head in infinitive constructions has to move to Inf. And second, it has to do so *before* the prefix *zu* is attached to it.

Therefore, the technical implementation of verb raising cannot be syntactic morpheme-to-morpheme adjunction, as proposed by Baker (1988). For a complex head consisting of *zu* and the inf-suffix would be inserted from the lexicon, and the stem moving its way up IP would have no way to penetrate that complex head. In effect, Baker's (1988) implementation of incorporation predicts exactly the ungrammatical pattern (31).

If words are constructed in an autonomous morphological component and move syntactically to check their licensing requirements, not to pick up morphemes (as proposed in Chomsky, 1993, 1995), the problem does not arise any more.

Under the latter assumption, the morphological component generates items like the following:

(32) a.

		Inf^{max}	
	zu	Inf'	
		perf.aux	Inf
(gegessen)	zu	hab-	en
eaten to	have		suff.
"to have eaten"			

b.

	Inf^{max}	
zu	Inf'	
	V	Inf
zu	ess-	en
to	eat	suff
"to eat"		

These items bear the syntactic features of their component elements, which are to be licensed at the corresponding positions in syntax. In order to be licensed, (32a) enters a chain relating the positions of perf.aux and inf - a well-formed configuration. No node intervenes between the head and the foot of this chain.

(32b) gets licenzed accordingly: it enters a chain ranging from V to inf. But such a chain is well-formed only if there is no other lexically filled head intervening between its foot (V) and its head (inf.). This is only the case in simple active infinitives. For all other configurations, (32b) is ruled out by the head movement constraint.

Thus, a particular interaction of independently motivated syntactic mechanisms (checking and locality) derives, and thereby explains, the generalization that *zu* always precedes the highest

verbal element in its clause. In being successful, this explanation supports Chomsky's (1993) checking account of head-raising and the assumption of a morphological component of grammar against the proposal of syntactic morpheme collection attributed to Baker (1988).

c) The actual position of zu. Assuming the above considerations are true, it is still conceivable that prefixed infinitives are more properly represented as in (33a), counter to their appearance (depicted in (33b)); i.e., it is possible that prefixed infinitives incorporate a covert suffix, and that *zu* specifies this covert (higher) head, not Inf.

(33) a. ***zu*** **+ X +** **inf** **+** **ø** b. zu + X + inf.

In fact, it is well known that the syntactic distribution of prefixed and bare infinitives is very different. Bech (1955, 1983) therefore distinguishes two infinitival forms[13]: the *first* (without *zu*) and the *second status* (with *zu*). The external distribution of first and second status infinitives is governed, according to Bech (1983), by selectional requirements of higher verbs. But can we make generalizations about the *internal* structure of second status vs. first status infinitive complements?

We can indeed make such generalizations. In short: second status infinitives are larger structural chunks.

Take some first status infinitival complements:

(34) a. Hans wird es verstehen
H. will it understand
"H. will understand it"
b. Hans sieht mich kommen
H. sees me come
"H. sees me coming"

While (34a) gives an example of a real monoclausal structure, with the first status infinitive embedded under a proper auxiliary, (34b) exemplifies an ambivalent case.

On the one hand, the thematic properties of the finite (matrix) and the infinitival predicate appear independent. On the other hand, the complements cannot be extraposed (35a), and they allow scrambling across matrix constituents (35b), and the embedded subject gets assigned case by the matrix predicate (35c):

13. Indeed, Bech considers the participle a third infinitival form. Since we have good reason to distinguish participles from infinitives, we will not bother.

(35) a. *Hans hat (ge)sehen [mich kommen]
H. has seen me come
b. Gestern hat mich Hans kommen (ge)sehen
yesterday has me h. come seen
"yesterday, H. saw me coming"
c. Hans hat [mich den Dachboden putzen lassen]
h. has me-Akk the attic clean let
"h. had me clean the attic"

Second status infinitives show up in control clauses (36a), in verb-raising complements (36b), and in subject-raising complements (36c):

(36) a. Hans hat vergessen [mir das zu erklären]
H. has forgotten me that to explain
"H. forgot explaining this to me"
b. Hans hat schon oft versucht [mir das zu erklären]
H. has already often tried me this to explain
"H. has often tried to explain this to me already"
c. Hans scheint schon eine zeitlang was zu planen
H. seems already a while what to plan
"H. has appeared for a while to be planning something"

(36) shows that second status infinitives allow extraposition. Another remarkable property is that they do not tolerate overt subjects. Although the complement predicates are agentive, the agent cannot be overt, unless it has moved to a matrix position, as in (36c).

Still, raising complements allow scrambling to the matrix:

(37) a. Hans scheint das schon eine zeitlang zu planen
H. seems this already a while to plan
b. Hans hat mir das schon oft zu erklären versucht
H. has me this already often to explain tried

It appears that second status infinitives take silent subjects, and that first status infinitives take (matrix) accusative subjects (but cf. below for an immediate exception).

If it is true that subjects bear a tight relation to the tense-node, and that infinite tense is responsible for the behavior of PRO in control clauses, then it is tempting to assume that, in German, a tense-node is present (and active) in contexts of a second status infinitive.

Indeed, Evers (1988) argues that second status infinitives have a temporal-modal

interpretation. By contrast, first status infinitives do not just have a *different* such interpretation: they lack it altogether.

Unfortunately, there is a class of predicates that takes first status infinitive complements which disallow subjects: the modal verbs.

(38) Hans will [das Auto] nicht verkaufen
H. wants the car not sell
"H. doesn't want to sell the car"

Modal-verb complements behave like the other first status infinitives in other respects. For example, scrambling into the matrix is possible, and extraposition is not:

(39) a. Hans will mir schon lange sein Motorrad verkaufen
H. wants me already long his motorbike sell
b. *daß H. schon lange will [mir sein Motorrad verkaufen]
that H. already long wants me his motorbike sell

Thus, the modal verbs resemble small-clause *lassen* (let) in that they take non-extraposed first status infinitives as complements, but they resemble raising *scheinen* (seem) in that the subject of their complement is non-overt.

Following the general approach persued in this paper, let us assume that the morphological evidence, the presence vs. absence of *zu*, decides the issue, and that modal verbs are like SC-*lassen*, rather than raising *scheinen*. In other words, we claim that the infinite complements to modal verbs do not incorporate a tense node.

Under this assumption, the absence of an overt (accusative) subject in modal-verb complements can be traced exclusively to the properties of the matrix modal verbs: they are unaccusatives, and the embedded subject has to move to the (empty) matrix subject position in order to be case-licensed.

There is thus good evidence to assume the following morphological structure for a second status infinitive:

(40) the m-structure of prefixed infinitives

T^{max}

zu T'

inf T

stem-*en* *ø*

Morphologically, (40) explains why analytical tenses do not tolerate prefixed infinitives: *zu* is a tense- not an infinitive-marker, and it would have to be prefixed to the finite verb, with which it does not agree; it is a marker of infinite tense only.

Syntactically, (40) predicts that second status infinitive complements represent at least a TP node and that the target of scrambling, even object-scrambling to the matrix is beyond TP - a well-supported[14], but still highly controversial[15] claim.

d) German and UG. Of course, the IP structure argued for above ows a lot to the program initiated by Guglielmo Cinque in his (1994) GLOW talk. Nevertheless, merging the two approaches seems premature at the moment. Suffice it to give a few comments on their compatibility.

Based on an impressive sample of comparative data, Cinque (1997) arrives at a generalization on the hierarchical ordering of functional elements in a clause. His central insight is that if certain features are grammaticalized in a given language, they are ordered structurally according to a universal pattern. Simplifying a lot, this universal pattern assigns relative prominence to feature-bundles in the following order:

(35) modality1 > tense(past) > tense(future) > modality2 > aspectuality1 > tense(anterior) > aspectuality2 > voice > aspectuality3

Recall now the hierarchical order of functional elements we have arrived at in (30) for German, with structural prominence rising in the opposite direction, towards the right:

(30)

V	ASP	PART.1	VOICE	PART.2	PERF	INF	MOD	T	MOOD	AGR

The correspondence in the overall pattern is evident. We uniformly find voice on top of certain aspectualities, and below others; also, the present vs. past tense distinction is

14. cf. Haiden (1996)

15. cf. Haider (1993), Diesing (1992), Fanselow (1996).

sandwiched between two differnt sets of modalities according to both proposals, and the encoding for future tense is located lower than past.

Leaving a closer examination of the implications of Cinque's work, in particular an investigation into the meaning of the functional elements present in German for further research, we just observe that the two proposals are in principle compatible, and mutually support each other.

3. Consequences of the analysis: V2 and particles

The theory as outlined above has a number of repercussions for verb movement and incorporation phenomena in German, which will be briefly addressed now.

One of the most salient properties of German grammar is that the finite verb in root clauses occupies the second position. The phenomenon (known under the heading *V2*) can be formalized as a transformational rule placing the finite verb to a head at the left periphery of the clause, preceded only by a topic phrase (Koster, 1975). This position has been identified as COMP in earlier work (Haider & Prinzhorn, 1986), then as the head C (e.g., Vikner, 1990), or some other functional head at the left periphery of the clause (Travis, 1984; Zwart, 1993; Haider, 1993).

It is a problem of V2 noticed in relation with verb-raising (e.g., Koster, 1975; Roberts, 1989) that V2 has the capacity to extract the finite part of a supposedly complex head. If verb raising complements really involve head-to-head adjunction, then the embedded verb will first adjoin to the matrix verb, and then the matrix verb excorporates to be transported to C:

(36) a. Hans [das Haus zu bauen] beginnt [DS]
b. Hans [das Haus t_i] [zu-bauen$_i$-beginnt] [intermediate]
c. Hans beginnt$_j$ das Haus zu bauen t_j [SS]
Hans starts the house to build
"H. starts building the house."

No matter how we tackle the issue, it remains suspicious. It gets even more suspicious, when we consider monoclausal configurations with analytical tenses:

(37) a. Hans ist ins Haus gegangen

Hans is into-the house gone
"H. went into the house."

b. Hans wird sich die Schuhe putzen
Hans will refl. the shoes polish
"H. will polish his shoes."

According to standard assumptions, at the LF interface a chain relates all functional heads of the clause forming what has been called by Grimshaw (1991) an extended projection. Thus, the excorporation scenario of (1) generalizes to all configurations involving analytical tenses: the infinitive or participle will adjoin to the finite auxiliary, and then the auxiliary excorporates.[16]

It goes without saying that the problem increases for common projectional base type theories like Haider (1993). If the various verbs involved in the composition of an analytical tense originate, syntactically, under a single head-node, then it is already not trivial what the finite part of that complex head should be, and it is mysterious (i) how the right verb is selected by V2 to move and (ii), that such an operation does not violate grammatical constraints.

Under the assumptions argued for above, there is no reason for the auxiliary and the verb in an analytical tense to form a chain. Chains are formed in this theory for checking purposes only, and the features to be checked derive from the morphological makeup of a given head. Thus, the finite auxiliary of (37a) has to be checked against perf.aux, probably tense, and agreement; the participle has to be checked against V, Asp, and the participle head. Two chains will be formed, one relating the lower functional domain up to the participle head, the other one ranging from perf.aux to agr. In this configuration, locality conditions alone predict that the finite verb alone moves on to C: all other elements would violate the head-movement constraint doing so. No excorporation has to be assumed.

Virtually the same problem arises with verb-particle combinations: it just surfaces in a more violent form.

Verb-particle combinations in isolation may reasonably be analyzed as complex lexical items. This is how Chomsky (1955) treats English verb particle combinations, and for German (and Dutch), where the particles immediately precede the verb, the assumption appears even more

16. Or otherwise, the main verb adjoins to the trace of the auxiliary, which is equally suspicious.

reasonable.

(38) a. eat up
b. auf essen

Indeed, Koster (1975) agrees on a lexical analysis of particles, and he uses their distribution to argue that German is underlyingly SOV.

The problem with Koster's argument is again that, for the argument to go through, V2 needs to be able to extract "the finite portion" of a complex element. Only that this time it is even more problematic to determine what "the finite portion" is. For, if particle-verbs are stored (or, for that matter, generated) uniformly as compounds in the lexicon, then inflectional morphology should apply to the entire compound to the effect that the particle travels along with the verb in V2.

In fact, there are lexical X-V compounds behaving like this.[17] Both V2 and participial prefixation treat these items as opaque (39). Particles, by contrast, are separated from the verb under both rules (40):

(39) a. lieb-äugeln
dear-eye-inf
"ogle/flirt"
b. ge-liebäugelt
GE-ogle-participle
c. damit liebäugelt er schon lange
with-this ogles he already long
"He has been ogling with this for a while."

(40) a. auf-passen
up-wait-inf
"to watch out"
b. auf-ge-paßt
up-GE-wait-participle
c. sie passen immer ganz genau auf
they wait always very strictly up
"they always watch out very carefully."

17. Admittedly, we observe considerable disagreement among speakers about the grammaticality in such cases. This is another difference distinguishing real compounds from particle-verbs. The example in the text is pretty robust, though.

It is thus (under his own assumptions) a mere stipulation, when Koster (1975) treats the moving part of verb-particle combinations as the finite part. If the particle belongs to a lexical compound, then it also belongs to the finite part of V. And this derives the facts wrong.

Of course, the compound analysis is not the only one available. It has been argued[18] that particles are independent phrasal elements just bearing a tight relation to the verbal predicate. But even in this camp, there seems to be pretty much of a consensus that the tight relation the particle bears to V is a consequence of incorporation (cf. van Riemsdijk, 1978; Stowell, 1981; Zeller, 1996).

If particles incorporate, then where do they incorporate to? Note that particles precede both the participial prefix (40b) and the infinitive prefix (41):

(41) auf zu passen
up to wait
"to watch out"

Since *zu* is a tense-marker, the particle incorporates to a position at least as high as T, blatantly violating the head-movement constraint. This is, of course, if the particle incorporates overtly. If it incorporates covertly, in the derivation of LF (cf. Zeller, 1996), then we still have the excorporation problem in the mirror: instead of V-excorporation, the particle adjoins to a trace.

I conclude that the theories proposed so far do not satisfyingly account for the distribution of particles. What will the present proposal dictate in this case?

The first question to be asked according to the guidelines adopted above concerns the taxonomic status of the particle. If it is part of the morphological word headed by the verb-stem, then what status does it have there?

It has been noted that particles precede both the infinitive marker *zu* (41) and unseparable verbal prefixes (40b).

From its position to the left *ge-* it follows that the particle is attached higher than Asp. And from its position to the left of *zu*, we see it occupies a position even higher than tense; this,

18. cf. Emonds (1972), van Riemsdijk (1978), Taraldsen (1983), den Dikken (1992) etc.

again, provided the particle were part of the morphological structure of the verb.

To decide whether the particle can be a lexical prefix at a level higher than tense, it is worthwile having a quick look at its meaning and function.

There is a consensus among proponents of the most diverging theories on particles that they have the capacity to change (or add to) the argument- and/or event structure of a predicate. This generalization is captured by the lexicalists (e.g., Stiebels & Wunderlich, 1994) in the form of lexical-semantic rules deriving compound event- and argument structures. By the proponents of syntactically-minded theories, this is accomplished by the adoption of various ways of particle-V reanalysis (among them incorporation, but cf. Emonds (1972), Taraldsen (1983)).

In sum, the function of the particle agreed upon by, to the best of my knowledge, everybody, is predicative.

Now notice the contradiction we have arrived at. It has been observed for German above, and for UG by Cinque (1997) that argument and event structure properties are encoded at a structural level below tense. The apparent morphological pattern, however, predicts that the particle occupies a position higher than tense.

Thus, the lexicalist theory of particles has led us into a die-hard structural contradiction, and we conclude that verb-particle combinations (in sentential contexts) are no morphological compounds at any level of grammatical representation.

By exclusion, we conclude that verb-particle combinations are phrasal collocations composed of a prepositional phrase and a verb. As such, we do not expect them to move along under V-movement, and we also do not expect them to appear between a prefix and a verb.

Let us finally address a few problems posed by this conclusion.

The first such problem is that the particle very rarely behaves like an independent preposition regarding movement. Only few particles move on their own, and those particles which introduce an additional argument into the thematic structure of a predicate never move together with that NP.

Without going into detail (cf. Haiden, in preparation), assume with van Riemsdijk (1991) that Ps, like all other categories, may be covered by a layer of functional projections. Assume that the functional layer is responsible for both the realization of the grammatical function of a predicate, and for the syntactic licensing of its arguments. If particle PPs are lexical PPs without a functional cover, then they are bound to stay inside VP as parasites to the grammatical function of the predicate, and their complements have to be licensed by the

functional categories covering V, i.e., they must leave the PP.

Another immediate problem for this approach to particles is that it appears to imply bracketing paradoxes. Verb-particle combinations may be morphologically derived just like simple verbs:

(42) a. aus-füllen
out-fill-inf
"to fill out"

b. aus-füll-ung
out-fill-N
"filling"

c. un-aus-ge-füllt
un-out-GE-filled
"uncompleted/unoccupied"

The approach sketched above seems to commit us to the inappropriate bracketings for (42b) depicted in (43a), while, from the semantics of the derived N, we expect (43b), and it seems to exclude (42c), unless its structure were (43c); in fact, the bracketing desired for the latter is (43d):

(43) a. *aus-[füll-ung]
b. [aus-füll]-ung
c. *[un-aus]-[ge-füllt]
d. un-[aus-ge-füllt]

This is so, because morphemes attach to words, not maximal projections, and the tacit assumption so far was that particles are invariably maximal projections.

I claim that this assumption is wrong. Recall that we have arrived at a phrasal analysis of particles on the basis of their behavior in a sentential context. But nothing reasonable forces us to assume that an item which syntactically projects is stored in the lexicon as a maximal projection. A bare noun, for example, is treated as maximal projections when it appears as a complement to a verb, as in (44a). Nevertheless, the very noun may be part of a morphological compound, without projecting syntactic structure (44b):

(44) a. Richard raucht *Zigaretten*
Richard smokes cigarettes

b. Richard ist ein *zigaretten-rauch-end-er* Dichter
Richard is a cigarette-smoking poet

Thus, a lexical item may enter a grammatical configuration before or after it has projected syntactic structure. If it is inserted before it projects, only its host projects further, provided it is not itself part of a more complex word. I claim that particles are no exception to this and conclude that the analysis of the German IP proposed above has shown a promising way out of some tricky problems of verb-movement and is thereby independently supported.

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