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Periphrasis as precursor of analytic inflection

Auxiliation in the (pre-)history of German

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This paper is mainly concerned with two issues: the development of analytic inflection from periphrasis and the discussion of formal and functional explanations of language change. Our aim is to integrate the advantages of both approaches. Basically, it is argued that performance-based conventionalisation plays a central role for grammaticalisation by providing the linguistic preconditions for the recategorisation of lexical elements as functional, or semi-functional elements as fully functional. However, changes of the basic rule system of grammar, which includes the parametric representation of functional heads in syntactic structure, can only be changed through structural reanalysis during language acquisition. On the other hand, the input for language acquisition is speech, which is shaped by application and, to a certain degree, modification of the functional rules of the grammatical system by the speaker. This view is supported by the distinction advocated for in this paper, namely that periphrastic forms are not necessarily forms of analytic inflection. Periphrases may come into being by means of the speakers' creativity. Analytic inflection can develop from periphrastic forms if they become (part of) an inflectional paradigm, but it is not the case that every periphrastic form will lead to the development of analytic inflection. The model developed here is exemplified by its application to the analysis of the rise of the German analytic perfect tense.

1. Introduction

In the literature on *auxiliaries* and *auxiliation* (i.e. recategorisation of a lexical verb as an auxiliary), the uses of the terms *periphrastic* and *analytic* with respect to inflection are quite often not properly distinguished. In the terminology of systematic language typology, *analytic inflection* denotes a subtype of morphological marking where inflectional paradigms are not established by specific affixes but by means of morphologically autonomous words, i.e. auxiliaries or particles. Two central tense forms in English and German may serve as an example: in these languages, virtually every full verb can be 'inflected' for future or perfect tense by means of specific auxiliaries (like *will/shall* and *have*, respectively *werden* and *have/be*). Thus, these forms are construed analytically in these languages. The term *periphrastic* indeed has a similar notion, meaning the expression of one function by more than one word. However, not every kind of *periphrasis* is suitable to form a complete paradigm in the sense of being valid for a whole class of elements like the class of lexical verbs. Very often, periphrastic constructions using lexical elements occur in cases where there is a gap in the grammatical paradigms of a language. Examples from different periods of different languages clearly demonstrate that conventionalised periphrases can indeed be considered the historical precursor of analytic forms of inflection. However, grammaticalisation must be completed if we want to speak of analytic inflection as a paradigmatic means of functional marking. Taking the German analytic perfect tense with *haben* ('have') as an example, one can state that it has developed from a periphrastic construction where HAVE originally was used as a full verb that was complemented by a predicatively used past participle. Similarly, the BE-perfect developed from the predicative construction with the copula *sein*. The change from conventionalised periphrases to a fully grammati-

calised analytic inflectional pattern was not completed until the 11th century. Due to the possibility of observing the development of the German analytic perfect tense *in statu nascendi*, it is a very suitable case example for an explanative account of auxiliation via lexical periphrasis.

The paper is structured as follows: Since we found *periphrastic forms* and *analytic inflection* not properly distinguished in the literature, it is first of all necessary to define the terms as applied in this paper. This is done and discussed in the following paragraph (2). In paragraph 3, I discuss the relevant factors of syntactic change; I also develop a model of auxiliation that integrates both usage based and acquisition based aspects. In paragraph 4, I exemplify this model with the development of the German perfect tense, discussing the *have*-perfect first and continuing with some remarks on the auxiliation of the copula. The conclusion in paragraph 5 is a case for an integrative model of language variation and change adequately considering and assessing both performance-based factors and the conditions related to language acquisition.

2. *Analytic inflection* vs. *Periphrasis* vs. *Paraphrasis*

The use of the term *analytic* in the context of morphological marking was first introduced in an early work on the typology of languages by Schlegel (1818: 16), and has, in modern structural typology of morphological systems, achieved the status of a scientific term, distinguishing inflectional paradigms where *particles* (PTCs) and *auxiliaries* (AUXs) are used to denote grammatical features, from those called *synthetic*, where this function is fulfilled by *affixes* (AFFs).

The term *periphrastic* is very often used synonymously with *analytic*, neglecting the fact that it has a much wider range. Originally, *periphrasis* is a term from *poetic* and *rhetoric* arts, meaning the employment of an idiomatic expression, e.g. to avoid repetition. Periphrases very often replace a one-word expression with more than one word (cf. Bußmann 2008). In fact, its meaning is very close to that of *paraphrasis*, both terms originating in a prefixed form of the Greek word meaning 'speak':

(1) a. gr. φράζειν 'speak, say'
b. gr. περί 'around'
c. gr. παρά 'aside'

In the traditional use of the terms, the major difference is that *periphrastic forms* become common (or conventionalised), whereas a *paraphrasis* occurs more randomly (e.g. in order to explain the lexical meaning of a word). Thus, examples from lexicography and phraseology may well serve for illustration.

(2) a. lexical form: *policeman*
b. paraphrasis: *man belonging to a department of government concerned with the keeping of public order* (cf. OED)

c. periphrasis: *guardian of the law*

The use of the periphrasis in this sense is also quite common to express more abstract or grammatical meanings in the world's languages, especially if the grammatical system of a language lacks an inflectional paradigm for a specific grammatical category. This can easily be illustrated with some examples from German in comparison to English and French.

Standard German does not distinguish the verbal aspect systematically[1] – unlike English, where the so-called *progressive tense* is realised by a fully grammaticalised form of analytic inflection. Instead, a construction with a temporal adverb can be applied, which is a *periphrasis* in the terms explained above.

(3) Er ist gerade *dabei*, sein Fahrrad *zu reparieren*.
he – is – just – there-at – his – bicycle – to – repair-INF
'He *is* just repair*ing* his bicycle.'

There is also a more colloquial way of using a prepositional phrase in a predicative construction with the copula:

(4) %Er ist [PP beim/am [[DP (sein) Fahrrad] reparieren] .
he – is – at.DEF – *his – bicycele – repair*-INF
'He *is* repair*ing* his bicycle.'

Unlike in English, these periphrastic forms are contextually (e.g. sentences with perfective verbs sound odd even if they are not punctual) and grammatically (e.g. neither of these periphrases occurs in the passive) restricted:

(5) ?Der Zug ist gerade dabei, am Bahnhof anzukommen.
the – train – is – just – 'there-at' – at.DEF – *station – to-arrive*.INF
'The train is just arriving at the station.'

(6) a. *Das Buch ist dabei, gelesen zu werden.
the – book – is – 'there-at' – read.PII[2] – *to* – AUX(PASS)

b. *Das Buch$_i$ ist [PP am [[DP x$_i$] gelesen werden]] .
the – book – is – at.DEF – *read*.PII – AUX(PASS)

'The book is being read.'

This means they are not *paradigmatic*, in the sense of inflecting a lexical class by means of a *grammatical rule*. Taking paradigmaticity as an indicator of grammaticalisation (cf. Lehmann 1995: 123), one may thus conclude that many of the periphrastic forms are not fully grammaticalised, whereas analytic inflectional forms are.

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1 In fact it does sentential aspect, which is part of the discussion below.

2 Note that I gloss both the past participle and the passive participle as PII (second participle); this is because they are homoformous anyway and very often polyfunctional or ambiguous.

If this is the case, one can further state the status of the *progressive* as analytic inflection in languages like French, where the source of grammaticalisation was an idiomatised adverbial paraphrasis with the prepositional phrase [PP en train] (lit. 'in move')[3]:

(7) a. Il est *en train de réparer* son vélo.
he – is – in – move – of – repair-INF *– his – bicycle*
'He is repairing his bicycle.'

b. Le train est *en train d'arriver*.
the – train – is – in – move – of – arrive-INF
'The train is arriving.'

c. Le livre est *en train d'être lu*.
the – book – is – in – move – of – be-INF *– read.*PII
'The book is being read.'

It can also be stated that in some German varieties (e.g. Allemanic or several varieties spoken in the Rhine area), the progressive periphrasis with the preposition *am* has been fully grammaticalised and can be regarded as analytic inflection. This is in addition evident from a change that has reanalysed the syntactic structure, making the predicative reading unavailable (loss of syntagmatic variability in the terms of Lehmann 1995: 123ff.): in these dialects, *am* (originally a contracted form of the preposition *an* and the neuter definite determiner in the dative case) is no longer a preposition but a particle adjacent to the verb. It denotes – together with the infinitive – the progressive aspect (cf. Bhatt & Schmidt 1993). The following examples are abstracted from my own field research:[4]

(8) a. %Er ist sein Fahrrad *am reparieren*.
he – is – his – bicycle – PTC *– repair*-INF
'He is repairing his bicycle.'

b. %Der Zug ist gerade *am ankommen*.
the – train – is – just – PTC *– to-arrive.*INF
'The train is arriving.'

c. %Das Buch ist bereits *am gelesen werden*.
the – book – is – already – PTC *– read.*PII – AUX(PASS)
'The book is already being read.'

It is not difficult to find more examples, which can be explained in a similar way. While in English and French one can distinguish the close future tense by a specific grammaticalised use of the verb

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[3] However, to my knowledge, this conventionalisation took place before the lexicalisation of the word *train* as denoting a vehicle; originally, it just meant something like the noun 'move'.

[4] Note that these just reflect the dialect syntax, not the dialect phonology or lexicology which would differ substantially between the varieties where this grammatical form is used. Note also that the transcription of German dialect data is still not normalised in the literature. In several Alemannic subvarieties, the sentences in (6) would be put forward roughly like:

(i) a. Der isch sei Rädle am richte.
b. Dr Zuag isch grad am oakomme.

GO, German has conventionalised periphrastic forms that are not yet fully grammaticalised and are thus contextually restricted.

Since the expression *to be going to* is fully grammaticalised in English (I do not go into the details of the semantics of the construction; for discussion cf. e.g. Wekker 1976), it is no problem to also use it together with the full verb variant of *go*. The same is true for French *aller* 'go'.

(9) a. He's *going* shopping.
b. He's *going to*[5] *go* shopping.

(10) Il ne *va* pas *aller* à la maison.
he – NEG – *go*.3sg – NEG – *go* – *to* – *the* – *home*
'He is not going to go home.'

In German, the combination of the verb *go* with an infinitival verb phrase is indeed also highly conventionalised and associated with an idiomatised connotation of the (close) future tense. However, since it is still a periphrasis employing a full verb, doubling of the verb *go* is at least stylistically marked, and many speakers judge it as unacceptable.

(11) a. Er geht einkaufen.
he – goes – shop-INF
b. *Er geht einkaufen gehen.
he – goes – shop-INF – *go*-INF

(12) *Er geht nicht heimgehen.
he – goes – NEG – home-go

Other periphrastic forms expressing close future in German involve the idiomatic use of prepositional phrases like *auf dem Weg* 'on the way' or *im Zuge* 'in the move'.

(13) a. Er ist *auf dem Weg* [PP *zum* Einkaufen] / ein*zu*kaufen.
he – is – on – the – way – to-DEF – *shop*-INF/ *to-shop*-INF
b. Er ist *im Zuge*, einen Artikel zu verschicken.
he – is – in-DEF – *move – a – article – to – post*

Again, these periphrases are contextually restricted; e.g. *im Zuge* cannot be combined with a non-animated subject.

(14) Das Buch ist *auf dem Weg/ *im Zuge zu* erscheinen.
the – book – is – (on the way/ in the move) – to – appear

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c. Des Buach isch scho am glea werre.

[5] Hopper and Traugott (2003: 1) mention as a further indicator of full grammaticalisation that the collocation *going+to* can be phonologically contracted only in the case of analytic temporal inflection, not if *to* is used as a lexical preposition.

(i) He's *going to*/ *%gonna go* shopping.

(ii) He's *going to*/ **gonna* college.

This may be interpreted as a reanalysis of *going+to* as one functional element.

On the other hand, since neither those periphrases nor the idiomatised use of *gehen* are grammatical markers in the sense of explicitly denoting a grammatical feature, they are not complementary and can be combined in one sentence.

(15) Er ist auf *dem Weg/ im Zuge*, einkaufen zu gehen.
He – is – (on the way/ in the move) – to-shop-INF – *to – go*

In French, it is in fact also possible to combine *en train* and auxiliarised *aller*, even though both of them have to be regarded as grammatical markers. However, as shown above, *en train* has been grammaticalised not as denoting close future but progressivity. Thus, it does not compete with *aller faire quelque chose*. Both can combine in order to mark close future with the progressive aspect.

(16) Il est *en train d'aller* achêter quelque chose.
he – is – in – move – of – go – buy – some – thing
'He is going to buy something.'

A last example for periphrases that are strongly conventionalised but, from a systematic point of view, not yet cases of analytic inflection, are passive-like expressions in German. In all German varieties, verbs denoting *reception* are used in contexts of object-subject-diathesis, which is very similar to grammatical passivisation. This is often referred to as *dative-passive* or *recipient-passive* in the literature (cf. Wegener 1991). However, it can easily be shown that neither of the verbs used in this kind of periphrasis is fully grammaticalised. All of them are more or less contextually restricted:

(17) a. Er *bekam/ kriegte/ erhielt* ein Buch *ge*schenk*t*.
he – got/ got/ recieved – a – book – give-as-present.PII
'He was given a book as present.'

b. Er *bekam/ ?kriegte/ *erhielt* die Wahrheit *ge*sag*t*.
he – got/ got/ recieved – the – truth – tell.PII
'He was told the truth.'

c. *Er *bekam/kriegte/erhielt* alles *ge*glaub*t*.
he – got/ got/ recieved – everything – believe.PII
'He was believed everything.'

Passivisation is not possible for any of these verbs of reception if the dependent verb lacks a direct object, even if this verb governs a dative object such as *helfen* 'help'. This is at least true for standard German. However, there are in fact German varieties where passivisation of *helfen* is possible with auxiliarised *kriegen*, e.g. in Luxemburgian[6].

(18) %Ich habe von denen *ge*holf*en gekriegt*.
I – have – from – them – help^{V}.PII *– got*
'I was helped by them'.

[6] Thanks to Carolin Döhmer for this piece of information.

This means that in these varieties the periphrasis *get*+PII seems to be fully grammaticalised as an analytic passive form where the indirect object can gain the function of the sentence subject. The former verb of reception has lost its argument structure, serving as an auxiliary for this specific form of passivisation.

In all of the cases discussed here, it is quite evident that there is a tight correlation between periphrasis, i.e. a conventionalised way of expressing meaning indirectly, and fully grammaticalised analytic forms. This is not only the reason why *analytic* tenses are often referred to as *periphrastic* in traditional accounts of syntactic change. In fact, it may also be the core of the gradual nature of auxiliation and similar processes of grammatical change often referred to in the literature (cf. Lehmann 1995: 22ff., and many more).

It is one of the purposes of this paper to turn this trivial correlation into a theoretically relevant observation. It is certainly not true that all periphrases lead to grammaticalisation. Neither shall I attempt to argue that all cases of analytic inflection must have a periphrasis as a precursor. I rather aim to answer one of the conditional questions of language change (the "general question of language change" in the terms of Coseriu 1974): under what circumstances *can* periphrasis become analytic inflection? I shall try to give an explanation in terms of an integrative model of language change, considering both formal and functional factors of grammar and speech.

After a more general discussion of syntactic change in the following paragraphs, I shall exemplify this model with data from the history of German, i.e. the rise of the so-called *periphrastic perfect tense* with *have* and *be* as auxiliaries.

3. Syntactic Change

For several decades, the scientific discourse on diverse phenomena of grammatical change has been coined by competing generative and functionalist approaches. Even though I do not deny my conviction of the explanatory potential of the generative model, this paper is not at all meant to advocate only the generative approach, nor to pull functional approaches to pieces. Rather, it is meant to argue for an *integrative* model which draws on appropriate answers provided by both approaches to the relevant questions.

It is uncontroversial that functional approaches focus on the role the system of language plays for language use. As a consequence, it is mainly usage-based explanations that result from the respective observations, which then lead to assumptions as represented by statements like the following:

> Of course, it is us using the language who change the language, by adapting it to our needs. (Nübling & al. 2006: 4; transl. PÖ)[7]

[7] *Original*: Selbstverständlich sind wir, die wir Sprache verwenden, diejenigen, die die Sprache verändern, indem wir sie unseren Bedürfnissen anpassen.

Even though this view is not at all beside the point (as seen above, speakers use their creativity to express grammatical notions), there is an important restriction often pointed out by generative approaches, which has in fact become one of their leading arguments: the *basic* properties of the linguistic semiotic system are not determined by its communicative function and its *basic* rules are not open to manipulation by the speaker (Öhl 2006: 235ff; cf. Grewendorf 1999: 319f).

Let us take the verbal aspect as an obvious example: the grammatical feature of the verbal aspect itself does not determine whether it may be linguistically represented by an analytic verb form, like in English (see above), by a grammaticalised adverbial, like in French (see above), or by affixes, like in Russian (cf. e.g. Leiss 2000: 216ff.). Instead, it is the basic structural properties of grammar that provide us with the options we can choose to express aspect and other grammatical features.

Moreover, speakers cannot freely choose between these options when producing their sentences. They have access only to the options of the grammar constraining their language.[8] That is why speakers cannot invent grammatical rules or freely change the rule system of their languages. What they can do, however, is make creative use of the grammar at their disposal.

(19) a. Er ist gerade *dabei*, sein Fahrrad *zu reparieren*.
he – is – just – there-at – his – bicycle – to – repair-INF

b. *Er ist sein Fahrad reparierend.
he – is – his – bicycle – repairing

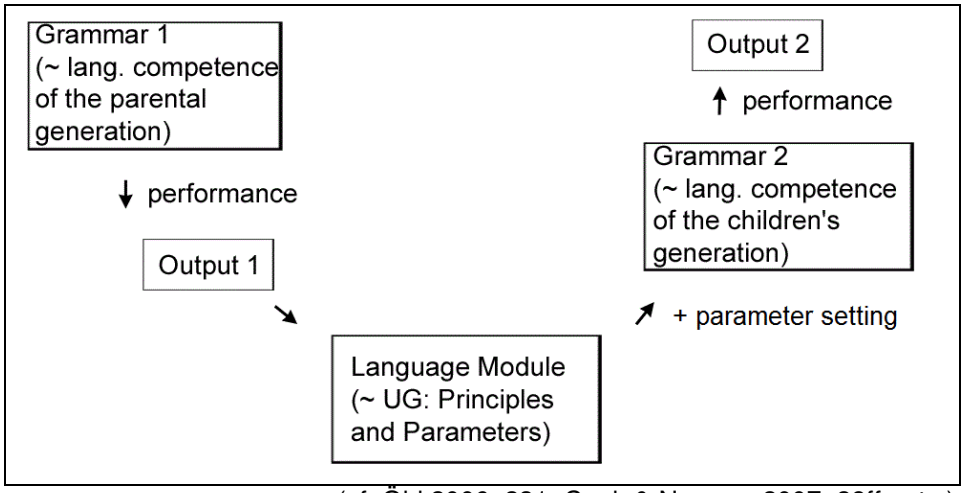
'He *is* repair*ing* his bicycle.'

The explanation put forward for these restrictions by generative grammarians is well known and thus just repeated here in short: the rules of grammar are not just produced by our common cognitive skills but result from the properties of our language module, i.e. the way it calculates structures. This determines not only the principles of language but also the parameters by which the grammars of natural languages systematically differ. These parameters provide options that are chosen during language acquisition on the basis of the linguistic input received from the parental generation and can hardly be changed after they have been fixed.

Grammar acquisition from the generative point of view is illustrated in the following graph where UG (universal grammar) stands for the innate properties of the language faculty that are relevant for building grammatical structures; a definition of the term *parameter* is given below.

[8] For the purposes of explaining the general aspects of first-language-grammar, second language acquisition and the controversies about the options of exceptional late grammar acquisition can be neglected.

(20)



(cf. Öhl 2006: 231; Cook & Newson 2007: 28ff.; etc.)

(21) ***Grammatical Parameters*** **(GenGr)**

Grammatical Parameters are variables of the grammatical system, which are set to structurally specific values, on the basis of universal and innate principles and the data the child finds in the language s/he is exposed to during first language acquisition. This parameter setting is a prerequisite for the consistent inventory of rules for a specific/ individual grammar.

What is important to keep in mind here is that we as researchers do not have direct access to grammars. Instead, we examine the data produced both by the children's and by the parental generation. Looking at ambiguous data from periphrasis as described above, it seems obvious that the data must be examined quite carefully in order to decide whether a grammatical change has taken place between the two generations. And, what is not only important but factorial, the child's analysis of the output produced by the parental generation may lead to the setting of parameter values that differ from those of the parent's grammar, if the data is ambiguous – e.g. between lexical periphrasis and analytic inflection. The factors potentially triggering aberrant parameter setting have often been discussed in the literature (cf. Lightfoot 1991, 1999; Roberts 1993, 2007; Roberts/Roussou 2003; Gelderen 2005, 2009 etc.), and this paper is intended to add some aspects from language use.

Before turning to that, I would like to briefly describe the parameters of syntax that are important for the following discussions. One of the most basic ones that distinguishes the syntax of languages like German from languages like English is the *head position* V° in the VP:

(22) a. Paul has [$_{VP}$ eaten$_{V°}$ [$_{DP}$an apple]] (vgl. Cook & Newson 2007: 41ff; Roberts 2007: 92ff)

b. Paul hat [$_{VP}$ [$_{DP}$ einen Apfel] gegessen$_{V°}$]
P. – has – an – apple – eaten

Another parameter concerns the potential positions of the *finite verb* which is, in generative grammar, mostly referred to in terms of *verb movement*. Potential verb positions are in the VP, in the IP (inflection phrase) dominating the VP, and in the CP (complementiser phrase) dominating both (details can be looked up e.g. in Cook & Newson 2007). In German main clauses (which contrast with most of the embedded ones owing precisely to this property), the finite verb moves from its base

position to a higher position in the CP, producing a FIN-second-structure (23a). The normal position of a finite modal in languages like English is in the IP, following the subject (23b). Modals can also move to the CP in English (23c), however only in non-declaratives. While full verbs also move to the CP in FIN-second languages like German (23d), they can't even leave the VP in English (23e). This is why, in some cases, do-support is necessary, e.g. if negation intervenes between V° and I°.

(23) a. [$_{CP}$ Leider [$_{C'}$ kann$_v$ [$_{IP}$ Paul [$_{VP}$ keine Äpfel essen] t_v]]] (FIN-second)
b. Unfortunately, [$_{IP}$ Paul [$_{I'}$ can [$_{NegP}$ not [$_{VP}$ eat apples]]]] (FIN in I°)
c. [$_{CP}$ Can$_v$ [$_{IP}$ Paul [$_{I'}$ t_v [$_{VP}$ eat apples]]]] ?
d. [$_{CP}$ Leider [$_{C'}$ isst$_v$ [$_{IP}$ Paul [$_{VP}$ keine Äpfel t_v]]]]
e. *Unfortunately, [$_{IP}$ Paul [$_{I'}$ eats$_v$ [$_{NegP}$ not [$_{VP}$ t_v apples]]]] (*V to I)
f. Unfortunately, [$_{IP}$ Paul [$_{I'}$ does$_v$ [$_{NegP}$ not [$_{VP}$ eat apples]]]] (✓AUX in I)

A further parameter standing in relation to both of those just mentioned concerns the way in which functional categories are represented. I am using a notion adapted from a proposal by Roberts & Roussou (1999): If a functional feature (like tense) is realised by an affix attached to a lexical category, this means a lexical head has to move to the corresponding functional head position (specific functional heads that are located either in the domain of CP or of IP). If a functional feature is realised by a particle or an auxiliary, they do not have to move (even though they may move by a further operation).

(24) ***Parametrisation of Functional Categories*** (cf. Roberts & Roussou 1999)
a. AFF (→ *movement of lexical heads*)
b. PTC, AUX (→ *no movement of lexical heads*)

Note that an auxiliary is nothing but a special case of an inflected functional element expressing an additional feature with an affix; this feature (e.g. agreement) may trigger movement.

The difference can be illustrated with the synthetic preterite contrasted with the analytic perfect tense in German. In the former case, the inflected lexical verb moves to the IP where tense and agreement are located and may move on to the CP in main clauses. In the latter case, the lexical verb stays in its base position and the inflected AUX *hatte* is inserted in I°, representing preterite tense and agreement (alternatively: it is moved from T° to Agr°).[9]

(25) a. dass [$_{IP}$ sie [[$_{NP}$ den Studenten] t_i $_{VP}$] *lob-te* $_{IP}$]
CMP – *she* – DET – *student* – *praise*.PST.3sg
'… that she praised the student.'

[9] What exact feature is represented by the AUX *have* is the topic of several discussions (cf. Grewendorf 1995; Musan 2002). Perfect tense is encoded by the AUX and the perfect participle compositionally. For the time being, I would just like to state that AUX represents anteriority, which I shall specify further below.

b. dass [IP sie [[NP den Studenten] *gelobt* VP] *hat-te* IP]
CMP – *she* – DET – *student* – *praise*.PII – AUX.PST.3sg
'… that she had praised the student.'

In Latin, the active perfect tense is represented by a finite verb form, more precisely an affix carrying the features of tense, aspect and agreement. This means the lexical verb would move to IP. The passive perfect tense, however, is an analytic form with the copula used as an AUX, thus constructed in a way similar to the analytic perfect in German.

(26) a. lauda-*vit*, lauda-*verat;* lauda-*tus sum*
b. (*dass*) ich gelob-*t* hab-*e*/ha-*t*-*te*/word-*en bin*

The following example shows that tense and aspect can also be represented by particles, in languages lacking agreement like Tok Pisin.

(27) wanpela man *i bin* skulim mi long Tok Pisim (*Tok Pisin;* Lightfoot 1991: 177)
one – *man* – PROG – ANT – *teach* – *me* – *in* – *Tok* – *Pisin*
'A man was teaching me in Tok Pisin.'

Generative researchers of grammatical change such as Roberts (1993, 2007), Roberts/Roussou (2003: 194ff.) or Gelderen (2004a) treat grammaticalisation of AUXs in terms of structural economy, as a by-product of structural simplification caused by eliminating syntactic movement in first language acquisition. Under this view, children seek the least expensive way of designing syntactic structures: a verb turns into an auxiliary simply because movement to IP is uneconomical. This has also been referred to as *merge over move* (Roberts/Roussou 2003) or the *Late Merge Principle* (see the discussion in Gelderen 2011: ch. 1.2.3).

Since this view neglects a whole range of findings of grammaticalisation theory, such as the role of *metaphor* and *metonymy* as cognitive processes, controversies with functional accounts of grammaticalisation were unavoidable, where *economy* is treated in its relation to *expressivity*. This view is grounded on the assumption of a competition between the interests of speaker and hearer ("ease of production" vs. "ease of perception" cf. Haspelmath 1998: 320; Hopper & Traugott 2003: 65f.); it has in fact a long standing tradition, as reflected by the following quote from Martinet (1955):

> The whole development of language is determined by the omnipresent contradiction of the communicative and expressive needs of human beings on the one hand, and, on the other hand, their tendency to restrict their mental and physical activities to a minimum. (Martinet [1955] 1981: 85; transl. PÖ)[10]

What these authors call *expressivity* is a factor of language change that must not be neglected in a generative approach, either. The way children interpret lexical elements may not only block structural simplification (cf. Öhl 2009a: 419ff.), it may also cause grammatical change, when speakers

[10] *Original*: Die gesamte Sprachentwicklung wird bestimmt von dem stets vorhandenen Widerspruch zwischen den kommunikativen und den expressiven Bedürfnissen des Menschen einerseits und andererseits seiner Neigung, seine geistige und physische Aktivität auf ein Minimum zu beschränken.

make use of the grammatical options creatively and if children interpret the lexical material as grammatical markers, as in the case of periphrasis in the notion as defined above.

Both structural simplicity *and* expressivity can be regarded as aspects of *cognitive economy*, assuming that explicit encoding of information is less costly with respect to both speech reception and production. And, given that language acquisition relies on parsing the output of speech production, this should be valid also for the development of a child's grammar. This view is explicitly argued for in Öhl (2009b: 419ff.) and formulated as two competing cognitive strategies that are constitutive both for language use and language acquisition.

(28) ***Minimal Effort in Computation*** **(MEC)**

Use just as many operations as are necessary to design a structure converging with the features to encode.

(29) ***Maximal Explicitness*** **(MEX)**

Find the maximal amount of features converging with a consistent interpretation of a structural description.

This means it is not just structural economy but also the informational potential of the input that is factorial for language acquisition and, following from that, for grammatical change.

Another question the acquisition-based accounts must face concerns how such spontaneous and individual changes can spread over a speech community within a rather short period. Usage-based accounts seem to provide a much more intuitive explanation for how and why innovative expressions gradually become part of the grammatical system of a language, especially if grammatical rules are treated as usage-based generalisations over constructions (cf. Croft 2000); more traditional accounts (cf. Keller 1990) simply speak of *conventionalisation* of patterns of usage, which is, of course, an oversimplification.

Usage-based changes are certainly one pillar of language development. However, the attempt at explaining grammatical change solely on the basis of speech production necessarily results in an overestimation of the speaker's power to manipulate the rules of grammar. There are obvious formal criteria which massively constrain functionally motivated changes. Regarding the findings of generative approaches, grammatical change, i.e. changes in the basic rule system that is not accessible to the speaker, cannot simply be ascribed to creating and conventionalising ways of expression (cf. Öhl 2007; 2008).

One of the first researchers to consider both generative and usage-based ideas of explaining grammatical change was David Lightfoot; the integrative approach used here owes very much to his discussion of the contrast between *graduality* and *abruptness* in language change (cf. Lightfoot 1979; 1991; Lightfoot 1999: 77ff). The quintessence of this discussion is: what changes gradually is not grammar itself but the way it is used in speech production; speech production, however, comes into play with the role of the 'input' for language acquisition. Speakers make use of the options for

manipulating the structure of clauses, which may become common and spread over a speech community. Given that sentences provide the triggers for parameter setting, this can result in the loss of *robust input* for parameter setting, i.e. input that makes the child fix a parameter's value (cf. Lightfoot 1991: 63ff).

> A sentence S expresses a parameter P if a grammar must fix P to a definite value in order to assign a well formed representation to S. (Lightfoot 1991: 19)

Lightfoot (1999) further introduces the term *cue* for pieces of structure children parse in order to find parameter values for the acquisition of grammar. These cues are not only relevant for a cognitively economical way of acquiring grammar by avoiding the parsing of whole sentences before setting parameters that concern minor levels of syntactic structure, but they may also be misleading if they trigger a parameter setting that would be revised if a larger piece of structure had been parsed.[11]

To put it in the terms used in this paper, speakers producing sentences make creative use of the range of possibilities within a frame that is set by the inventory of lexical expressions and grammatical structures, constrained by the regular structure building operations (*speech production*; restricted options of enhancing expressivity; no manipulation of the basic rule system). Language learners *interpret* the input in order to acquire an inventory of lexical expressions and a system of regular structure-building operations. Modification of *usage conventions* in *speech production* changes the input diachronically and may manipulate the grammar of a language *indirectly*.[12]

So, what can be considered as gradual are *variation, expansion* and *conventionalisation*;[13] *regularisation*, however, i.e. the real grammatical change, takes place *abruptly* during language acquisition. Since the patterns that become common in a speech community may change or even remove the triggers for parameter setting of a whole generation of children acquiring a grammar, it is not the grammatical change but the modified input that can spread. This is how a *periphrasis* can become a precursor of *analytic inflection*.

An example that has been extensively discussed in the recent literature is the development of the French future, which not only involves auxiliation of the verb HAVE but also its further grammaticalisation as a suffix. Note that this change was possible only in the earlier stages of French when both the IP and the VP were, contrary to what is assumed to be the case in Modern French, head final.

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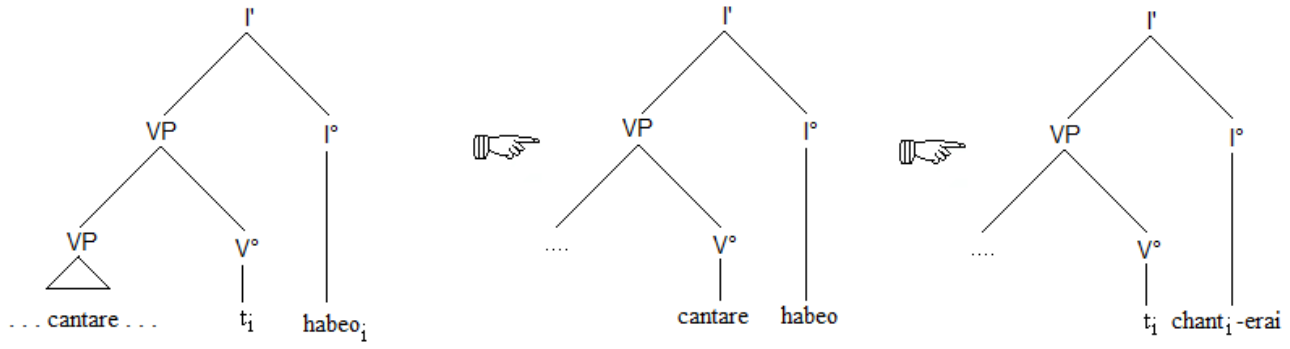
[11] Note that this description of Lightfoot's ideas is very undetailed and simplified; of course there is much more behind it, as explained in Lightfoot (1999).

[12] Another kind of conventional change that is not discussed here but may play an interesting role by changing the input for language acquisition comes into the play with prescriptivism; cf. the discussion in Gelderen (2004b).

[13] What is neglected here is the possibility of a sequence of micro-reanalyses, which, over a longer period of observation, would also give the impression of a gradual change of grammar; cf. Gelderen (2010).

(30) **Reanalysis of the future suffix in French** (cf. Roberts 1993)



The first stage of the process of change modelled here is the periphrastic use of *have* in a gerundive construction describing a deontic relation. Presumably, it was the connotation of futurity implied by deonticity that lead to the grammaticalisation as a future tense auxiliary which then represented a functional head like I°; note that such changes are often referred to as grammaticalisation of an implicature (cf. Rolf 1995). In the vulgar Latin varieties, this newly developed analytic form ousted the synthetic one that had been inherited from classical Latin (cf. Stotz 1998: 325f.) and, after phonological reduction, became the source of further grammaticalisation, the development of a new future suffix.

(31) **Phonological reduction of Lat. *habere*** (cf. Haspelmath 1998: 348f)

cantare habeo > *[cantar aio] > chanterai

Note that in our terms, the aspects of structural simplification, i.e. loss of movement, phonological reduction and affigation, are grounded on a cognitive strategy like MEC in (28) above, whereas the interpretational aspect, i.e. the fixation of the grammatical denotion as [FUT], is grounded on MEX (29). Since such processes of change are grounded on both principles of grammar and universal cognitive strategies determining speech production and language acquisition, it does not come as a surprise that they can occur not only in various languages, but even several times within one language where they affect the same functional paradigm. This is often referred to as *cyclicity* of grammaticaliysation.[14] So, the classical Latin future suffix developed from a periphrasis with the subjunctive form (see below; I thank Martin Kümmel for this piece of information) of the copula BE in a way comparable to the grammaticalisation of *habere*. And, without wanting to go too far, one can state that French *aller* is a good candidate for the development of a new future auxiliary (s. ab. pp. 5f.).

[14] For the term *cyclicity* in general cf. Abraham (2010) and Gelderen (2011); Gelderen also discusses numerous other linguistic cycles; for the future cycle, in particular, cf. Gelderen (2011: ch. 7.4) and Abraham (2010: 264f.).

(32) **Development of future tense in Latin/ French** (adapted from Eckardt 2006: 5)

Proto Latin		Class. Latin		French
*kanta b^{h}u-mos *sing – be.*SUBJ-1^{pl}	>	canta-bimus *sing*-FUT-1^{pl}		†
		canta-re habe-mus *sing*-INF – *hav*-PRES.1^{pl} (GERUNDIVE	>	chant-erons *sing*-FUT-1^{pl} (FUTURE)
		> FUTURE)		allons chant-er *go*-1^{pl} – *sing*-INF

I shall now turn to an account of the rise and the development of the analytic perfect tense in German, which will also provide more evidence for the assumptions argued for so far.

4. Development of the German Perfect Tense

4.1 *Have-Perfect* (cf. Öhl 2009a)

The starting point for the development of the German analytic perfect tense with the AUX *haben* were predicative structures with PII in Old High German. They still exist in Modern German and are then sometimes referred to as *haben*-configuratives (cf. Businger 2011). There are also Modern English equivalents as follows:

(33) a. He wants to *have* his car *washed* by noone else. (*passive-like HAVE-configurative*)
b. I *have* one apple (that is) (*un*)*peeled*. (*depictive object predicative*)
c. We *have* everything *ready* and *done*. (*object predicative in complex predication*)

Beside the lexical verb *haben*, the relevant elements in German HAVE-configuratives are a *direct object* and a *predicative element* completing the construction as the *coda* (i.e. closing element). This can be noted as a canonical schema, as suggested by Businger (2011: 30).

(34) **Canonical schema of HAVE-configuratives in German** (cf. Businger 2011: 30)[15]
Subject – HAVE – NP^{ACC} – Coda

The clause structure of these configuratives crucially differs from that of the analytic perfect tense by HAVE being a lexical verb generated in the single V° position, whereas HAVE as an AUX has its usual position in the IP and may even be generated in a functional head in the I-system, like T° (see below fn. 21).

(35) a. dass [sie [[$_{NP}$ die Getränke] [$_{AP}$ (un)gekühlt] ([$_{PP}$ im Hause]) haben $_{VP}$] werden $_{IP}$]
that – they – the – drinks – (un)chilled – in-the – house – have – will

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[15] Note that, due to the German head final VP and IP, this would turn to
Subject – NP^{ACC} – 'Coda' – HAVE
in the basic clause structure that is found in subordinate clauses and with infinite forms of the AUX:
(i) dass wir alles fertig und erledigt haben
(ii) Er will sein Auto von niemandem anders gewaschen haben.

b. dass [sie [[NP die Getränke] (*un)gekühlt VP] haben IP]

In contrast, only transitive and ergative verbs were able to form a PII in early Old High German; the reason is that they were not yet used as part of an analytic tense form but only in configuratives with a direct object as the referential element. As long as there is such a restriction, one should assume predicative use even if a perfective interpretation is possible as an *interpretatio moderna*.

(36) a. phígboum habeta sum ***gipflanzotan*** in sinemo uuingarten (*Tat*[16] 102,2)
fig tree – had – someone – planted – in – his – vineyard

b. in buah si iz duent [AP PRO zisamene ***gihaltan***] zi habanne (*Otfr* III 7, 54)
in – book – they – it – do – together – held – to – have

The reanalysis of the analytic perfect from such configuratives has been accounted for both by generative and by functionalist researchers. While Abraham (1992) suggested that HAVE became an AUX by means of a one-step-reanalysis of a small clause structure, Grønvik (1986) assumed that the use of HAVE as an AUX spread gradually from transitives to other verb classes by means of conventionalisation. Since both views in my opinion oversimplify the actual circumstances, I argued in (Öhl 2009a) that it was just the *use* of aspectually marked predicative constructions that increased steadily until the end of the 9th century. Only then did these structures become input for the learners' reanalysis. In my terms, the development of such predicative constructions (i.e. reanalysis as complex predicates) and the further development of the auxiliary (i.e. recategorisation of V° as I°) can be explained on the grounds of a cognitive strategy like MEC in (28) above, whereas both the increase of use as an aspectual construction and the reinterpretation by the learner as a temporal form can be explained in terms of MEX in (29). Let us now turn to the analysis of the relevant data.

HAVE-configuratives with PII occur in various early Germanic sources:

(37) a. þin agen geleafa þe hæfþ gehæld**ene** (*HomS* 8,15: 24f)
your – own – belief – you – has – healed

b. þa he ða hæfde þa wísan onfogn**e** (*Beda* 344, 27)
when – he – then – had – the – leaders – welcome.PII-ACC.pl

c. habde sie farfangen**e** fiundo craftu (*Hel* 3032)
had-her-cought away-fiend(GEN)-might(DAT)

d. sie **eigun** mir ginoman**an** liab**on** druht**in** min**an** (*Otfr* V 7, 29)
they – have – me.DAT – *taken*.ACC – *beloved*.ACC – *lord – my*.ACC

e. ir den christanun namun intfangan eigut (*Exh* 9,5)
you – DET – *christian – name – receive*.PII – *have/own*

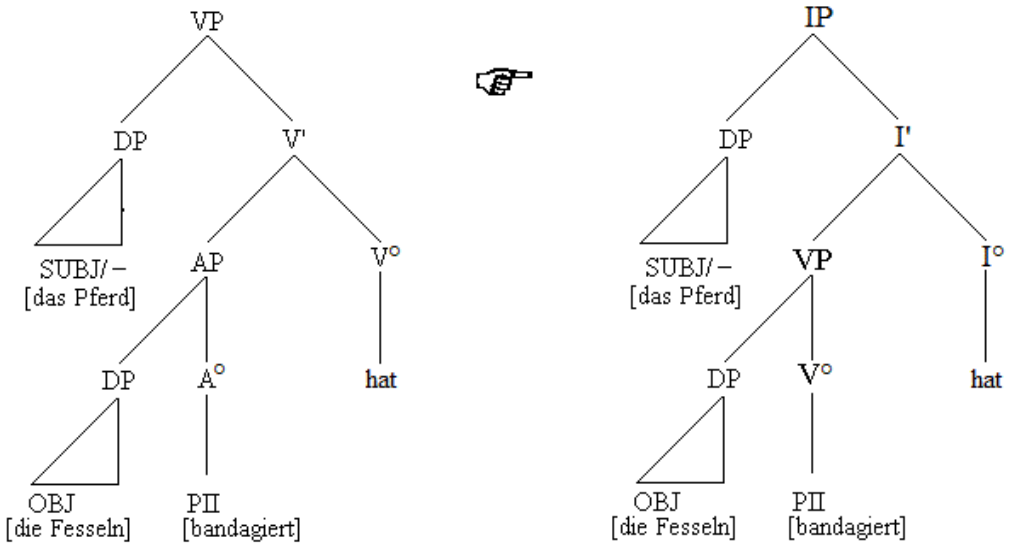
f. pi daz er in worolto kiuuerkot hapeta (*Musp* 36)
PREP – DEM – *he – in – world*.DAT – *shaped – had*

Indicators of a predicative reading are the use of *eigan* 'own' as a suppletive verb form[17] and nominal agreement at the PII. The latter was lost due to reduction in the course of the history of the language, which also supported the reanalysis of the PII from a nominal to a verbal form.

I would like to briefly discuss Abraham's (1992) proposal that the PII was reanalysed from the head of a small clause (presumably an AP) to a V° heading the VP of the whole sentence, which could be modelled as follows:

(38) a. dass das Pferd die Fesseln bandagiert hat
that – the – horse – the – fetlock – bandaged-up – has

b.



There is some evidence that the PII as a secondary predicate did not head a small clause in the relevant constructions. The PII instead formed a complex verb together with *haben*, which is an option especially in OV-languages like German, where secondary predicates following the direct object are adjacent to the verb. I suggest that the formation of a complex predicate of two adjacent predicative parts can be considered a case of structural simplification according to MEC.

First of all, note that *haben*-configuratives in Modern German[18] do not behave at all like *small*-clauses. A small clause (SC) is an autonomous domain of adverbial modification. In sentences with *haben*-configuratives, an adverbial immediately preceding the secondary predicate (i.e. the *coda*) modifies the verbal complex (VC; like *rasiert haben* respectively *rasiert halten* below).

(39) a. Aus Unkenntnis wähnte sie [$_{SC}$ ihren Mann geschäftehalber in Berlin]. (SC)
by – unawareness – considered – she – her – husband – for-business-reasons – in – Berlin

b. Seit damals hat$_i$/hält$_i$ er stets den Kopf aus Hygienegründen [$_{VK}$ rasiert t$_i$]. (VC)
since – then – has/holds – he – ever – the – head – for – hygienic-reasons – shaved

Second, small clauses can be moved to the specifier position in front of the finite verb, which may be stylistically marked but not ungrammatical, unlike the fronting of the coda of the *haben*-configurative together with the complement:

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16 Abbreviated references are clarified in the list of references under 6.2.

17 *eigan* 'own' is used as a suppletive form for *habēn* in PRES.PL. forms in OHG texts until Notker Teutonicus (~1000 AD; cf. Oubouzar 1975: 10ff).

(40) a. ?[$_{SC}$ Ihren Mann geschäftehalber in Berlin] wähnte sie (nur) aus Unkenntnis. (SC)
b. *[Den Kopf] [aus Hygienegründen] [$_{VK}$ rasiert t_i] hat$_i$/hält$_i$ er seit damals stets. (VC)

Third, a small clause predicate cannot be fronted to the specifier position together with the main clause predicate. A complex like *rasiert haben* or *rasiert halten*, however,can:

(41) a. *In Berlin gewähnt hat sie aus Unkenntnis ihren Mann geschäftehalber. (SC)
b. [$_{VK}$ Rasiert haben/halten] könnte man den Kopf (z.B.) aus Hygienegründen. (VC)

Since complexes like *Recht haben* und *rasiert haben* are just as coherent as *verborgen halten* and *rasiert halten*, they cannot be coordinated with phrases that otherwise could be complements of the lexical verb *haben*:

(42) a. *Er hielt es verborgen und [ihm eine Rede].
coherent
b. *Er hält den Kopf rasiert und [einen lustigen Hut in der Hand].
coherent

(43) a. *Er hat Recht und [ein loses Mundwerk].
coherent
b. *Er hat den Kopf rasiert und [einen lustigen Hut in der Hand].
coherent

Complex verbs like *verborgen halten* are already attested in the Old High German sources.

(44) hialt uns (...) dar giborgan (*Otfr* IV 55, 42)
kept – us – there – concealed

I assume that in a similar way, the full verb *haben* was not immediately grammaticalised as an AUX, but as a functional verb in aspectually marked complex predicates with an internal argument position.

(45) a. dass ich ein Beispiel [$_{V°}$ parat [$_{V°}$ habe]]
that – I – an – example – ready – have
b. Er hat es damals [$_{V°}$ verborgen [$_{V°}$ gehalten]] (compare: *bereithalten*)
he – has – it – back-then – concealed – kept

Since the theta grid of the verb *haben* and other transitive verbs is parallel, they are able to unify their argument structures. Thus, the complex formation was originally only an option with transitive verbs (Öhl 2009a: 286ff).

(46) a. was er in der Welt [$_{V°}$ geschaffen [$_{V°}$ hatte]]
what – he – in – world.DAT – *shaped – had*
b. dass ihr den christlichen Namen [$_{V°}$ empfangen [$_{V°}$ habt]]
that – you – the – christian – name – received – have

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[18] I concede that this is not direct evidence about OHG grammar; however, a significant difference between OHG and NHG *haben*-configuratives cannot be grounded merely on theoretical assumptions.

Structures with *haben*+PII of intransitive verbs, i.e. with PII that cannot be used as object predicatives, did not occur in OHG texts before *Notker Teutonicus* (~1000 AD).

(47) a. tar habet si imo geantwurtet sinero frago (*Notk* I: 284, 26)
then – has – she – him – answered – his – question.DAT

b. habe ich keweinot so filo (*Notk* II: 15,30)
have – I – cried – that – much

c. so habet er gelogen (*Notk* I: 544,29)
thus – has – he – lied

In these texts we find the situation comparable to Modern German, where there are examples that are ambiguous between the predicative and the analytic inflectional reading, and others that are unambiguous cases of the analytic perfect.

(48) a. uuanda du gemíchellichot hábest dinen námen (*ambiguous*) (*Notk* Ps. III, 997)
when – you – greaten-PII – *have*-2sg – *your – name*

'when you are having your name greatened'

'when you have greatened your name'

b. tar habet si imo geantwurtet sinero frago (*unambiguous*) (*Notk* I, 284, 26)
then – has – she – him – answered – his-GEN – *question*-GEN

'then she has given him an answer to his question'

Let's have a look at the integrity[19] of *haben* in different constellations with a PII in order to illustrate the potential of the modified input for grammatical change. For easier modelling, I will use more examples from Modern German:

(49) a. Das Zebra hat vier Hufe, in der Regel gewetzt(e). (PII as postposed attribute)
the – zebra – has – four – hooves – in – the – rule – whetted-(AGR)

'The zebra has four hooves that are, as a rule, whetted.'

b. [PRO$_i$ gewetzt] hat seine Hufe$_i$ das Zebra, [PRO beschlagen] liegen sie in der Regel nur beim Hauspferd vor. (PII as predicative attribute)

whetted – has – its – hooves – the – zebra – shod – lie – they – in – the – rule – only – with.DEF – *house-horse – ahead*

'Whereas the zebra has hooves that are whetted, they are, as a rule, shod in case of the house horse.'

c. dass ein Zebra immer [seine Hufe [$_V$ gewetzt hält/hat]] (PII in a verbal complex)

'that a zebra always keeps/has his hooves whetted'

d. dass das Zebra seine [$_{VP}$ Hufe gewetzt] hat (analytic perfect)

'that the zebra has whetted his hooves'

In fact, there may be some chance for *haben*+PII to be renalysed as an inflectional form from a construction with the possessive reading (49a). However, the more alternative constellations with *haben*+PII there are, the higher also the frequency in the input for language acquisition. Moreover,

[19] For the loss of integrity as a parameter of grammaticalisation cf. Lehmann (1995: 123ff.).

with the existence of input with desemanticised *haben* where perfectivity (or anteriority[20]) is implicit (49b+c), there are even potential triggers for resetting the relevant parameter according to MEX, turning the former full verb into an IP-element ('*cues*' in the sense of Lightfoot 1999).

Here it should be emphasised that it is not the construction with *have* but the perfective/anterior semantics of the PII itself that makes an aspectual/temporal reading of the sentences like (49b+c) possible. Thus, the reason for the aspectual/temporal contrast of sentences like the Old High German ones in (37d&e) above and sentences like the following is grounded on the use of the PII.

(50) a. was er in der Welt schuf (preterite)
what – he – in – world.DAT – *shaped*

b. dass ihr den christlichen Namen empfingt (preterite)
that – you – the – christian – name – received

The difference between explicit inflection and implicit aspectual/temporal reading is illustrated here, again with Modern German counterparts:

(51) a. was er in der Welt geschaffen/ parat/ zur Verfügung hatte (implicit perfectivity)

b. dass ihr den christlichen Namen empfangen/ zur Verfügung habt (implicit anteriority)

Further *reanalysis* of the structure (the PII then heading the VP) and *recategorisation* of *haben* created the new paradigm of analytic tense, where the AUX presumably just represents anteriority, as a head in the I-system,[21] whereas *perfectivity* is an additional feature that may be provided by the PII, depending on the semantics of the verb (see fn. 20).

(52) dass [$_{IP}$ ihr [$_{VP}$ den christlichen Namen empfangen$_{V°}$] habt$_{I°}$]
that – you – the – christian – name – received – have(AUX)

When *haben* had become an AUX and no longer selected a direct object, it could also be used with intransitive verbs, which was not possible in the precursing periphrases with *haben* as a full verb.

Thus, the use of the construction *haben*+PII signalling aspectual or temporal markedness (i.e. perfectivity/anteriority) gradually expanding in the course of the 9th and 10th century finally provid-

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[20] Note that use of the PII doesn't necessarily denote perfectivity; that is why, in German, the analytic tense form *haben*+PII, even though it is called the *perfect tense*, often just denotes anteriority, e.g. with punctual resultatives (cf. Öhl, 2014; detailed discussion can be found also in Musan 2002).

(i) Er hat den Ball gerade ins Tor geschossen.
he – has – the – ball – just – into-DEF – *goal – shot*

'He just shot the ball into the goal.'

The non-perfective semantics are also the reason why have+PII is not used in the translation to English, where the use of this construction diachronically developed in a different way.

[21] Note that this is also kind of simplifying, given that the AUX also occurs in the infinitive:

(i) Er soll den Aufsatz gestern geschrieben haben.
he – shall – the – paper – yesterday – write.PII – AUX

'He is said to have written the paper yesterday.'

There are several ways of explaining this, e.g. by a split-IP-model with an infinitival AUX in T°, whereas finite forms are always in Agr°.

ed the input for auxiliarising *haben*, which is a case of abrupt grammatical change. As said above (p. 15), changes like this are grounded on universal principles of grammar and of cognition. That is why they can occur in all languages sharing the conditional prerequisites, such as the existence of a verb like *have*. Desemanticisation of possessive HAVE is in fact a change converging in several languages, e.g. in Latin, where secondary predication together with *habere* already existed in the classical period.

(53) a. Necdum omnia (...) edita facinora habent (Livius XXXIX, 16, 3; cf. Salvi 1987: 229)
not-yet all(ACC.pl) *detect*(PII.ACC.pl) *crime*(GEN.pl) *have*(3pl)
'The did not yet have all of the crimes detected.'

b. Hannibal quia *fessum* militem proeliis operibusque *habebat*, . . . (cf. Thielmann 1885: 376)
Hannibal because exhaust(PII.ACC) *army by combats labour*-KOOR *had*
'Since Hannibal had a army exhausted by combats and labour, . . . '

Structures like these provided the input for the rise of the analytic perfect tense in later periods of Romance. However, it is certainly not adequate to interpret these data as early occurrences of a so-called 'periphrastic perfect', as suggested e.g. by Thielmann (1885). They are simply periphrases using the lexical verb *habere* – like the *haben*-configuratives addressed above. This is also made evident by their occurrence together with the synthetic perfect form of *habere* (for a more detailed discussion cf. Öhl 2009a: 273ff.).

(54) . . . qu*am* semper cognit*am habui* (anonymous; cf. Grandgent 1962: 55)
what.ACC.fem *always think*.PII.ACC.fem *have*.PERF.1.sg
'(things) that I have had (?as) thought.'

4.2 Remarks on the Auxiliation of the Copula

Since the former copular verb BE is used as a perfect auxiliary with certain verbs not only in German but also in several other Germanic and Romance languages, some concluding remarks on (the rise of) auxiliary choice seem to be necessary.

The grammaticalisation of BE[22] as an AUX was a process similar to that of *have*. Since there is no obvious interdependence of the two processes, the auxiliation of both of them may be regarded as a case of convergence. The development of the copula was treated in a functionalist framework by Dik (1987), whose explanation is similar to my account of the development of the input for parameter resetting, however, without being explicit about the question of how a conventionalised-form becomes regularised as part of the grammar. "Innovative aspectual forms (were) reinterpreted as temporal or diathetic later on" (Dik 1987: 80).

(55) Caesar victus est. (vgl. Dik 1987: 69)
Caesar – beaten – is

[22] I do not even attempt to explain the development of the copula from a former *verbum substantivum* which may be comprehensible in a quite intuitive way but is not at all historically reconstructable.

⇒ 'Caesar has been beaten.'

Note that the analytic form *esse*+PII was used in Latin only for the passive of the perfect tense and of the so-called *deponentia* (i.e. verbs that are inflected like passives even though they have an active meaning). Several of those were just ergative verbs, however, other ergative verbs could be inflected synthetically for the perfect active (see below), just like the transitive and unergative verbs. In versions of Bible verses in older Germanic languages where there was no perfect tense, Latin sentences with the perfect of ergatives and deponentia were translated using a predicative construction with BE+PII. This is illustrated below with synopses of Bible verses, each with the version from Luther's Bible for comparison.

(56) a. qui **venerant** ex omni castello Galilaeae (*Vulg* Lk 5,17)

b. die komen waren aus allen Merckten in Galiläa (*Luth*)

'who had come from all towns in Galilee'

c. þaiei wesun gaqumana**i** us allama haimo Galeilaias (*Wulf*)
who – were – come.PII.NOM.pl – *from – all – homes – Galilee*.GEN

'who were people having arrived from all homes of galilee'

(57) a. defunct**i** sunt enim qui querebant animam pueri (*Vulg* Mt 2,20)

b. Sie sind gestorben, die dem Kinde nach dem leben stunden. (*Luth*)

'They have died, those who sought the boy's life.'

c. arstorban**e** sint thie thar suohtun thes knehtes sela (*Tat* 11,1)
die.PII.NOM.pl – *are* – REL – *there* – *sought* – DEM.GEN – *knave*.GEN – *soul*

'They are dead, those who sought the boy's life.'

The crucial difference between ergative verbs and other intransitive verbs is that their PII can be used as a predicative, just like that of transitive verbs. It does not only denote a predication over the direct object but also over the subject of a sentence. Thus, like the transitive verbs, ergative verbs could produce a PII for predicative use long before it was used in order to make an analytic tense form.

In Old High German, the copula occurs not only with adjectives but also with the present and the past participle of various verbs.

(58) a. thaz er sculdig ist widar got (*Exh* 41f)
that – he – guilty – is – against – god (*be guilty* as VC?)

b. Gotes geist ist sprehhend**i** (*Is* 4.2.5)
God's – spirit – is – speaking (*is* ≈ *exists*?)

c. dhasz christ iu ist langhe quhoman (*Is* 26.14)
that – christ – you – is – long – come.PII

While – unlike in English – there was no grammaticalisation of the periphrasis BE+PI (58b) in OHG (on the periphrasis in Old English cf. e.g. Nickel 1966), BE+PII was grammaticalised as an analytic tense form for ergative verbs.[23]

Like in other languages, the asymmetry of auxiliary selection also persisted[24] in German – with some language specific variation having as it developed in all of the languages (see the other articles in this volume). I just give two telling examples:

(59) a. Ich *bin* in der Schule geblieben.
b. Je *suis* resté à l'école.

(60) a. Ich *bin* zur Schule gerannt.
b. J'*ai* couru a l'école.

As shown by these sentences, auxiliary selection is parallel in German and French with the verb STAY, but there is a difference with the verb RUN. This may have been caused by a change of semantic conceptualisation of the verb RUN in one of these languages (cf. Öhl 2009: 300).

As is well known, in languages like Modern English there is a generalised AUX used for the analytic past tense forms. This is due to a diachronic change ousting BE as a perfect tense auxiliary (cf. Denison 1993).

(61) a. We *have* stayed at school.
b. We *have* run to school.

In formal terms, this means that *have* was grammaticalised a further time, such that the selection of specific verbs was lost and its formal properties were reduced to the expression of the temporal feature. Again I refer also to the discussion in other papers in this volume.

5. Conclusions

Due to alternating performance- and acquisition-based changes, the grammaticalisation of the *perfect tense* in German cannot be explained by purely formal or functional methods. Functionally motivated changes are certainly one pillar of language change. However, there are obvious formal criteria which constrain the options of variation. Changes in the basic rule system of a language that is not accessible to the speaker cannot simply be ascribed to speech variation (cf. Öhl 2007; 2008). On the other hand, usage-based changes in language systems are often neglected in accounts based only on language acquisition.

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[23] I concede that this statement is also somewhat oversimplifying, however, this is not the right place to repeat the large quantity of discussion on auxiliary selection. I refer to the discussion in Öhl (2009b: 295ff.) and some more representative work like Haider & Rindler-Schjerve (1987) and Grewendorf (1989) and, of course, the papers in this volume.

[24] On persistence as a characteristics of grammaticalisation processes, cf. Hopper and Traugott (2003: 94ff.).

In processes of grammaticalisation, change of what has been called the *core grammar* in the generative framework is often initialised by functional variation at what has been called the *fringe*, i.e. the areas of a grammatical system that are accessible to manipulation in linguistic performance. One example is the rise of periphrastic forms using lexical material creatively but within constraints given by the present grammar. Only if taken as input for the acquisition of grammatical rules can these forms be regularised as part of a changed grammatical system. It is characteristic of such a kind of change that the options of using such newly developed analytic forms significantly differ from those for the original periphrasis, e.g. by the generalisation over unergative verbs.

My *long-term objective* that I intend to reach by broadening the database of examination to other areas of change (as I did when accounting for change in complementiser systems in Öhl 2009b), is an integrative model of language variation and change adequately considering and assessing both performance-based factors and the conditions related to language acquisition.

6. References

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