Acquisition-Based and Usage-Based Explanations of Grammaticalisation

An Integrative Approach

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This paper compares and discusses two mainstream explanations of grammaticalisation processes: Generative accounts regarding them as reflections of structural reanalysis through parametric change during language acquisition, resulting in recategorisation of lexical elements as functional heads in syntactic structure, and functionalist approaches that focus on performance, arguing that speakers tend to either improve expressiveness or economise speech production by varying the application of the rules of grammar, which may result in conventionalisation and finally even change the rules of grammar or create new functional elements. 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 recategorisation of lexical elements as functional ones, or semi-functional elements as fully functional ones. However, changes of the basic rule system of grammar, which includes the parametric representation of functional heads in syntactic structure, cannot be changed except 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. The part of grammar that is accessible to manipulation by the speaker is called 'fringe-grammar' in generative theory. Thus the central claim will be: *in processes of grammaticalisation, change of the core grammar is often initialised by functional variation at the fringe.* The whole process may include several steps of alternate usage-based and acquisition-based changes. This model will be exemplified by its application to the analysis of the development of analytic tenses.

1. Generative vs. Functional Approaches

For several decades, the scientific discourse on diverse phenomena of grammatical change has been dominated by competing generative and functional 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 making use of the appropriate answers of 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 their observations, which then lead to assumptions 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 et al. 2006: 4; transl. PÖ)[1]

Even though this view is very intuitively plausible, there is an important restriction often pointed to 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 accessible to manipulation by the speaker (Öhl 2006: 235ff; cf. Grewendorf 1999: 319f).

Let us take verbal aspect as a plain example: the grammatical feature of verbal aspect itself does not determine whether it may be linguistically represented by an analytic verb form, like in English (1a), by a grammaticalised PP, like in French (1b), or by an affix, like in Russian (2).

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

(1) a. The book is being read.

b. Le livre est en train d' être lu.

the book is in move of be.INF read.PII[2]

(2) zaby- ('forget') ÷ zaby-*va*- ('forget-IMPF') (Leiss 1992: 15)

Instead, it is the basic structural properties of grammar providing 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.[3] 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. Thus, in German, there is no option to use an analytic form of inflection like auxiliary+PI to express progressive aspect. Instead, a paraphrase using a temporal adverbial may be applied (4a), and there is a periphrastic form Prep+PI (4a)[4]. However, neither of them constitutes a fully productive grammaticalised form that is transparent to syntactic operations like passivisation (5a+b).

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[2] Note that we gloss both the past participle and the passive participle as 'PII' (second participle); this is because in our object languages, they are homophonous anyway, and very often polyfunctional or ambiguous. Analogically, we gloss the present participle as 'PI'.

[3] 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.

[4] Sometimes regarded as slightly substandard; at this point, we neglect the often discussed grammaticalisation of a prepositional progressive form in some German varieties.

(3) *Er ist sein Fahrrad reparierend.

he is his bicycle repairing

(4) a. Er ist gerade *dabei*, sein Fahrrad *zu reparier-en*.

he is just there-at his bicycle to repair-INF

b. %Er ist [$_{PP}$ am [$_{VP}$ [$_{DP}$ (sein) Fahrrad] reparier-en]].

he is at.DEF his bicycele repair-INF

~ 'He is repairing his bicycle.'

(5) a. *Das Buch ist dabei, gelesen zu werden.

the book is there-at read.PII to AUX(PASS)

b. *Das Buch$_i$ ist [$_{PP}$ am [[$_{DP}$ x$_i$] gelesen werden]] .

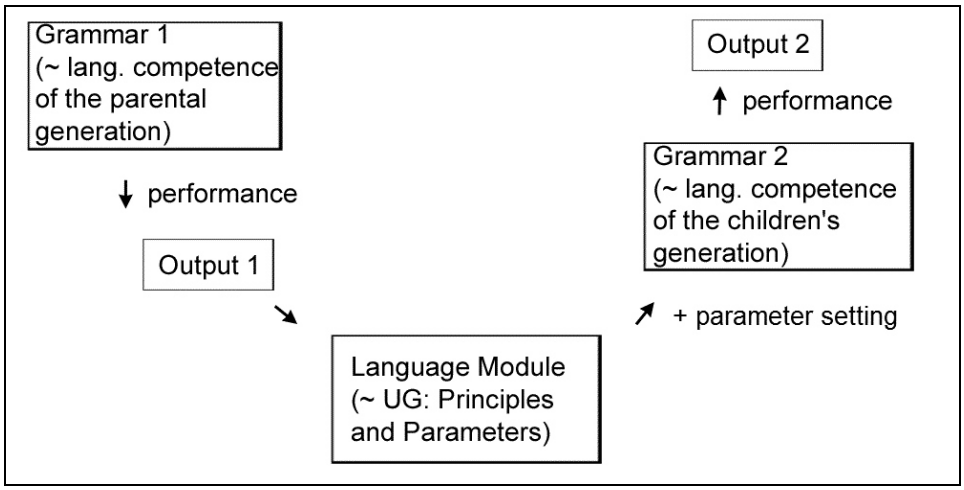
the book is at.DEF read.PII AUX(PASS)

'The book is being read.'

The explanation put forward for these restrictions by generative grammarians is well known and thus just briefly mentioned here: 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 gives rise not only to the principles of language but also to 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 lan-

guage faculty that are relevant for building grammatical structures, a definition of parameter is given below.



(Figure 1: *grammar acquisition*; cf. Öhl 2006: 231; Cook & Newson 2007: 28ff.)

(6) ***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. It is 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 crucial, 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 not unambiguous. 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 discussion. One of the most basic ones distinguishing the syntax of languages like German from those like English is the *head position* in the VP (cf. Cook & Newson 2007: 41ff; Roberts 2007: 92ff):

(7) a. Paul has [$_{VP}$ eaten [$_{DP}$ an apple]]

b. Paul hat [$_{VP}$ [$_{DP}$ einen Apfel] gegessen]

Paul 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 (8a). The normal position of a finite modal in languages like English is in the IP, following the subject (8b). Modals can also move to the CP in English (8c), however only in non-declaratives. Whereas full verbs also move to the CP in FIN-second languages like German (8d), they can't even leave the VP in English (8e). This is why, in some cases, do-support is necessary, e.g. if negation intervenes between V° and I°.

(8) 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 related to both of those just mentioned concerns the way in which functional categories are represented. I am using a notion adapted from Roberts & Roussou (1999: 1018ff.): 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 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).

(9) ***Parametrisation of Functional Categories***

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 inflected functional elements expressing an additional feature by 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

auxiliary *hatte* is inserted in I°, representing preterite tense and agreement (alternatively: it is moved from T° to Agr°).[5]

(10) a. dass [$_{IP}$ sie [[$_{NP}$ den Studenten] t_i $_{VP}$] *lob-te* $_{IP}$]

COMP she DET student praise-PST.3sg

'… that she praised the student.'

b. dass [$_{IP}$ sie [[$_{NP}$ den Studenten] *gelobt* $_{VP}$] *hat-te* $_{IP}$]

COMP 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 moves to I°. The passive perfect tense, however, is an analytic form with the copula used as an auxiliary, thus constructed in a way similar to the analytic perfect in German.

(11) lauda-*vit*, lauda-*verat;* lauda-*tus sum*

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

(12) wanpela man *i* *bin* skulim mi long Tok Pisim

one man PROG ANT teach me in Tok Pisin

'A man was teaching me in Tok Pisin.' (*Tok Pisin;* Lightfoot 1991: 177)

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[5] What the exact feature is that is represented by the auxiliary *have* is the topic of much debate (cf. Grewendorf 1995; Musan 2002). The Perfect tense is encoded by the auxiliary and the perfect participle compositionally. For the time being, we would just like to state that the auxiliary represents anteriority. See also footnote 16.

Generative researchers of grammatical change like Roberts (1993, 2007) or Roberts & Roussou (2003: 194ff.) or Gelderen (2004a) treat grammaticalisation of auxiliaries in terms of *structural economy*, as a by-product of structural simplification caused by eliminating syntactic movement in first language acquisition. Under the view that children seek the least expensive way of designing syntactic structures, a full verb turns into an auxiliary simply because movement to I° 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).

2. Integration: Performance and Parametrisation

Since this view seems to neglect a whole range of findings of functional grammaticalisation theory, such as the role of *metaphor* and *metonymy* as cognitive processes, controversies with functional accounts of grammaticalisation were unavoidable. One major criticism of such universalist models of language change was that change appears to happen arbitrarily, just limited by universal principles (much like a "random walk between states describable as parameter settings"; Dahl 2004: 147). Researchers like Haspelmath (1998 etc.) even entirely reject language acquisition as factorial for grammaticalisation:

> There is no reason to think that language acquisition plays a central role in this explanation. The principles involved are as relevant to adult language as they are to child language. Grammaticalisation occurs in language use, not in language acquisition. (Haspelmath 1998: 322)

Under this view, *economy* is rather treated in a context together with *expressivity*, which is grounded on the assumption of competition between the interests of speaker and hearer ("ease of production" vs. "ease of perception" cf. Haspelmath 1998: 320; Hopper & Traugott 2003: 65f.); this follows 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)[6]

What is called *expressivity* by these authors is a factor of language change not to be neglected also in an acquisition-based approach: the way children interpret lexical elements may not only block structural simplification (cf. Öhl 2009b: 419ff.), it may also cause grammatical change, when speakers make use of the grammatical options creatively and if children interpret the lexical material as grammatical markers.

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.

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[6] *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.

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

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

(14) *Maximal Explicitness* (MEX)

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

In speech production, MEC may lead to structural simplification, whereas MEX may lead to creative use of linguistic means (e.g. *lexical* elements implying *functional* meaning). In language acquisition, MEC may also lead to structural simplification, MEX, however, may lead to assignment of functional features to lexical elements by language learners. 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. The input is in turn subject both to MEC and to MEX through the speaker's options of manipulation when using the language. It is one major question of an integrative model as proposed here, how much manipulation the 'core grammar' in fact allows.

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 become part of the grammatical system of a language gradually, 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. That is why functionalist researchers paid much attention to the role of the *context*, recently, often reflecting three stages of a grammaticalisation process: speakers may use words or phrases in an innovative way (stage I; '*untypical context*' in the terms of Diewald 2002: 113) which may lead to ambiguous interpretations (stage II, '*critical context*', 'the actual triggering of the grammaticalisation process'; Diewald 2002: 113) and to the regular use even in contexts formerly inaccesible to the speakers (stage III; '*isolating context*', 'where only one of the competing interpretations is possible'; Diewald 2002: 114). Similarly, Heine (2002) defines three stages, regarding conventionalisation as constitutive for a fully grammaticalised form:

(15) . . . > bridging context > switch context > conventionalisation

Most context-induced inferences remain what they are: they are confined to bridging contexts, they are what has variously been described as 'contextual meanings' or 'pragmatic meanings'. But some of them, i.e. those acquiring switch contexts, may develop some frequency of use, they no longer need to be supported by context, and they turn into 'normal' or 'inherent' or 'unusual' or 'semantic' meanings (cf. Hopper & Traugott 1993: 73f). With reference to their source uses, conventionalised meanings have been described as 'petrified' and 'unpredictable' (Heine 2002: 85).

Heine (2002) also states that grammaticalisation processes do not evolve within one generation of speakers and that the switch contexts leading to the conventionalisation of new forms may occur even centuries after the first innovative constructions were created.

> The process that I have sketched takes generations to happen, normally centuries. The speakers proposing bridging contexts are not normally the same as those who create switch contexts. (Heine 2002: 96)

In an acquisition-based model, both the bridging and the switch context in Heine's terms are rather regarded as potential input for parameter resetting and the rise of grammatical *rules* that were not at the speakers' disposal. In principle, all suitable kinds of contexts may create the input for parametric change. Thus, there is no measurable time expense or number of speakers' generation that can be regarded as typical of a grammaticalisation process. It is the creation of new internal grammars but not conventionalisation that may isolate new grammatical structures. Conventionalisation, on the other hand, is not a result but itself a process by which innovative *uses* may gradually spread over a language community. The basic *rules* of a grammar, however, can't be changed, created or get lost except through language acquisition.

The great potential of performance-based changes results from modifying the input for language acquisition. When applying the rules of grammar, speakers seek to economise speech production and be at the same time expressive. Variation in performance serves the optimisation of the functioning of a language (langue/parole). *Norm changes* in the sense of Coseriu (1974) may occur through the addition of rules only within the limits provided by *core grammar* (cf. Kiparsky 1975: 241ff). Therefore, in processes of grammaticalisation, changes of the core grammar are often initialised by *functional variation at the fringe*.[7]

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[7] Another kind of norm 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).

The gradualness of grammaticalisation processes that has often been pointed to in the literature can be attributed to two factors: Firstly, conventionalisation (i.e. the process making bridging and the switch contexts available to speakers and language learners in the entire speech community) is inherently gradual. Secondly, the whole process may include several steps of alternate usage-based (UB) and acquisition-based (AB) changes and reanalyses (e.g. full V in untypical functional contexts (UB) > functional V (AB) > functional V in grammatical context (UB) > auxiliary (AB) > clitic by phonological reduction (UB) > affix (AB); see below 3.1).

Thus, 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 options for manipulating 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 considering both generative and usage-based ideas of explaining grammatical change was David Lightfoot; the integrative approach used here owes a lot 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 but the way it is used in speech production; speech production, however, comes into play with the role of the 'input' for

language acquisition.[8] Speakers make use of the options for manipulating the structure of clauses, which may be usualised 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.[9]

To put it in the terms used in this paper, speakers producing sentences make 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.

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[8] 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).

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

Modification of *usage conventions* in *speech production* changes the input diachronically and may manipulate the grammar of a language *indirectly*.

So, what can be considered as gradual are *variation, expansion* and *conventionalisation*; *regularisation*, however, i.e. the real grammatical change, takes place *abruptly* during language acquisition. Since the patterns usualised 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.

Thus, as even and already Haspelmath (1994) put it, even though several differences and misunderstandings between the two kinds of accounts may not easily be settled, any account of phenomena involving both language use and language acquisition can only benefit from considering also the findings of the allegedly opposite view.

> It is not realistic to expect theoretical convergence given the fundamentally different goals of functional linguistics (which tries to explain language structure) and Chomskyan linguistics (which tries to explain language acquisition), but mutual awareness could help linguists in both approaches to improve their theories. (Haspelmath 1994: 14)

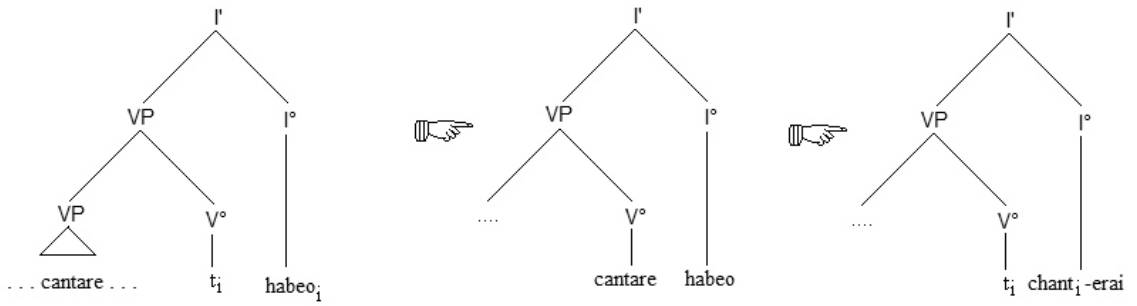
The productive result may be an integrative model, making use the advantages of both approaches.

I shall now turn to two case examples that will provide more evidence for the assumptions argued for so far: a short description of the development of Romance future tenses, which has been extensively discussed in the literature, and, at more length, may own account of the rise and the development of the analytic perfect tense in German.

3. Case examples

3.1. Romance Futures

The development of the French future tense (and similarly that in other Romance languages) not only involves auxiliation of the verb HAVE but also its further grammaticalisation as a suffix (explanation of the graph on next page).



(Figure 2: Reanalysis of the future suffix in French; cf. Roberts 1993)

The first stage of the process of change modeled here is the periphrastic use of *have* in a gerundive construction describing a deontic relation. Presumably, it was the connotation of futurity implied by deontic modality 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.). There, it became, after phonological reduction, the source of further grammaticalisation, the development of a new future suffix.

(16) **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 affixation, are grounded in a cognitive strategy like MEC in (13) above, whereas the interpretational aspect, i.e. the fixation of the grammatical denotion as [FUT], is grounded in MEX (14). Since such processes of change are grounded in 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*[10]. So, the classical Latin future suffix had developed from a periphrasis with the subjunctive form (see below; thanks to Martin Kümmel for this piece of information) of the copula BE in a way comparable to the grammaticalisation of *habere*. And, without intending to be too prognostic, one can state that French *aller* is a good candidate for the development of a new future auxiliary.

Proto Latin		Class. Latin		French
*kanta b^hu-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

(Figure 3: *Development of future tense in Latin/ French*; adapted from Eckardt 2006: 5)

[10] 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.).

3.2. German Perfect (cf. Öhl 2009a)

The starting point for the development of the German analytic perfect tense with the auxiliary *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:

(17) 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).

(18) *Canonical schema of HAVE-configuratives in German*

Subject - HAVE - NP^{ACC} - Coda (cf. Businger 2011: 30)[11]

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[11] Note that this would turn to

Subject - NP^{ACC} - 'Coda' - HAVE

in the basic clause structure that is found in German subordinate clauses and with infinite forms of the auxiliary (cf. Öhl 2012):

(i) dass wir alles fertig und erledigt haben

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 auxiliary 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. 17).

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

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 referential element. As long as there is such a restriction, one should assume predicative use even if a perfective interpretation is possible as *interpretatio moderna*.

(20) a. phígboum habeta sum *gipflanzot-an* in sinemo uuingarten
fig-tree had someone planted-ACC in his vineyard (*Tat* 102,2)

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

The reanalysis of the analytic perfect from such configuratives has been accounted for both by generative and by functionalist researchers. Whereas Abraham (1992) suggested that HAVE became an auxiliary by means of a one-step-reanalysis of a small clause

(ii) Er will sein Auto von niemandem anders gewaschen haben.

structure, Grønvik (1986) assumed that the use of HAVE as an auxiliary spread gradually from transitives to other verb classes by means of analogical expansion. 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 ct. Only then did these structures become input for the learners' reanalysis. In other words, 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 (13) 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 (14).

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

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

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

c. habde sie farfangen-*e* fiund-o craft-u (*Hel* 3032)
had her caught-away-ACC fiend-*GEN* might-*DAT*

d. sie *eigun* mir ginoman-*an* liab-*on* druht-*in* min-*an* (*Otfr* V 7, 29)[12]
they have me.DAT taken-ACC beloved-ACC lord-ACC my-ACC

[12] *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).

e. ir den christanun namun intfangan eigut (*Exhortatio* 9,5)

you DET Christian name receive.PII have/own

f. pi daz er in worolto kiuuerkot hapeta (*Muspilli* 36)

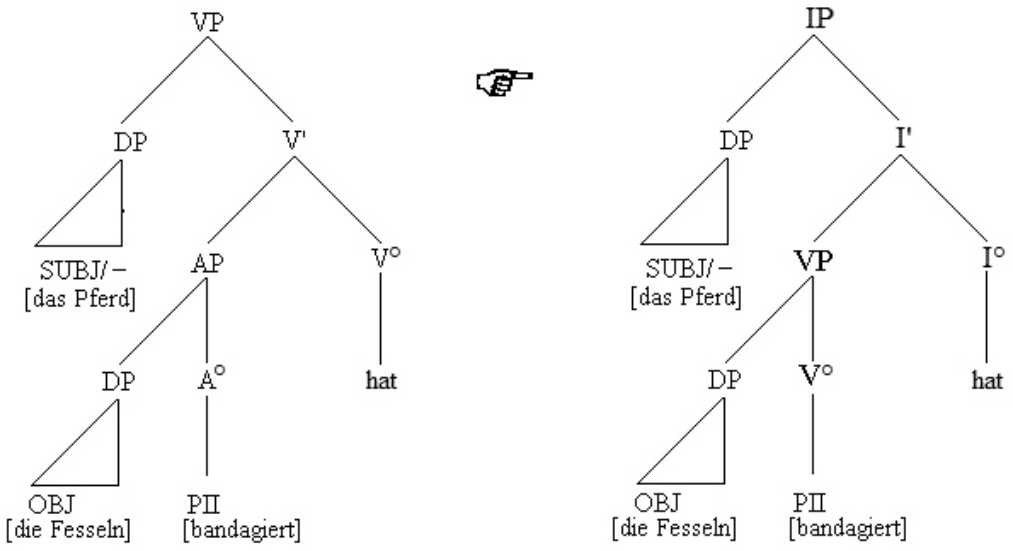
PREP DEM he in world.DAT shaped had

The main indicator of a predicative reading is nominal agreement at the PII; it was lost when the PII was reanalysed 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 modeled as follows:

(22) dass das Pferd die Fesseln bandagiert hat

that the horse the fetlocks bandaged-up has



(Figure 4: *have-reanalysis*)

There is some evidence that the PII as a secondary predicate was not heading 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 second-

ary predicates following the direct object are adjacent to the verb.[13] 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 (cf. 13).

Please note that *haben*-configuratives in Modern German[14] do not behave at all like small clauses. First, 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).

(23) a. Aus Unkenntnis wähnte sie [$_{SC}$ ihren Mann
Out-of ignorance considered she her husband.ACC
geschäftehalber in Berlin]. (SC)
for-business-reasons in Berlin

b. Seit damals hat$_i$/hält$_i$ er stets den Kopf aus Hygienegründen
since then has/holds he always the head for reasons-of-hygiene
[$_{VK}$ rasiert t$_i$]. (VC)
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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[13] Note that Abraham (2014: 95) also proposes a verbal-complex-analysis instead of a small-clause-analysis for complex predications with terminative verbs.

[14] We concede that this is not direct evidence for OHG grammar; neither is it an assumption, however, that is grounded merely in theoretical considerations. There is no reason why there should be such a significant difference between OHG and NHG *haben*-configuratives.

(24) 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)

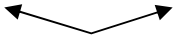
Third, a small clause predicate cannot be fronted to the specifier position together with the main clause predicate. A complex like *rasiert haben* or *rasiert halten*, by contrast, can:

(25) 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)

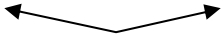
Since complexes like *Recht haben* und *rasiert haben* are coherent exactly like *verborgen halten* and *rasiert halten*, they cannot be coordinated with phrases that otherwise could be complements of the lexical verb *haben*:

(26) a. *Er hielt es verborgen und [ihm eine Rede].



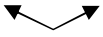
coherent

b. *Er hält den Kopf rasiert und [einen lustigen Hut in der Hand].



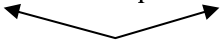
coherent

(27) 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 attested already in Old High German sources.

(28) 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 grammaticalised as an auxiliary immediately but as a functional verb in aspectually marked complex predicates with an internal argument position.

(29) a. dass ich ein Beispiel [$_{V^\circ}$ parat [$_{V^\circ}$ habe]]

that I an example ready have

b. Er hat es damals [$_{V^\circ}$ verborgen [$_{V^\circ}$ gehalten]] (compare: *bereithalten*)

he has it back-then concealed kept

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

(30) a. was er in der Welt [$_{V^\circ}$ geschaffen [$_{V^\circ}$ hatte]]

what he in DET world.DAT shaped had

b. dass ihr den christlichen Namen [$_{V^\circ}$ empfangen [$_{V^\circ}$ habt]]

that you the Christian name received have

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).

(31) a. tar habet si imo geantwurtet sinero frago (*Notk* I: 284, 26)

then has she him answered his question

b. habe ich keweinot so filo (*Notk* II: 15,30)

have I cried so 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 (*bridging contexts* or even *switch contexts* in the terms of Heine 2002), and others that are unambiguous cases of the analytic perfect.

(32) a. uuanda du gemíchellichot háb-est
when you greaten.PII have-2sg
dinen námen (*Notk* Ps. III, 997)
your name (*ambiguous*)
'When you are have your name elevated.'
'When you have elevated your name.'

b. tar habet si imo geantwurtet sinero frago (*Notk* I, 284, 26)
then has she him answered his question (*unambiguous*)
'Then she has given him an answer to his question.'

Let's have a look at the integrity[15] of *haben* in different constellations with a PII in order to illustrate the potential of the modified input for grammatical change. For easier understanding, I am using examples from Modern German, again:

(33) a. Das Zebra hat vier Hufe, in der Regel gewetzt(e).
the zebra has four hooves in the rule whetted-(AGR)
(→ PII as postposed attribute)
'The zebra has four hooves that are, as a rule, whetted.'

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

b. [PRO$_i$ gewetzt] hat seine Hufe$_i$ das Zebra, [PRO beschlagen] liegen
whetted has his hooves the zebra shod lie
sie in der Regel nur beim Hauspferd vor.they in the rule only
with.DEF domestic horse ahead (→ PII as predicative attribute)
'Whereas the zebra has hooves that are whetted, they are, as a rule, shod in case of the domestic 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 (33a). However, the more alternative constellations with *haben*+PII there are, the higher also the frequency in the input for language acquisition. Moreover, with the existence of input with desemanticised *haben*, where perfectivity (or anteriority[16]) is implicit (33b+c), there are even potential triggers

[16] 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: 358ff.; a 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.'

for resetting the relevant parameter, making the former full verb 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 (33b+c) possible. Thus, the reason for the aspectual/temporal contrast of sentences like the Old High German ones in (21d&e) above and sentences like the following ones is grounded on the use of the PII.

(34) a. was er in der Welt schuf (preterite)
what he in DET world.DAT created

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

The difference between explicit inflection and implicit aspectual/temporal reading can be illustrated again with Modern German counterparts:

(35) 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 auxiliary presumably just represents anteriority as a head in the I-system,[17] whereas *perfectivity* is an additional

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

[17] Note that this is also kind of simplification, given that the auxiliary also occurs in the infinitive:

feature that may be provided by the PII, depending on the semantics of the verb (see fn. 16).

(36) dass [$_{IP}$ ihr [$_{VP}$ den christlichen Namen empfangen$_{V°}$] habt$_{I°}$]

that you the Christian name received have(AUX)

After *haben* became an auxiliary not selecting a direct object anymore, it could also be used with intransitive verbs, which was not possible in the preceding periphrases with *haben* as a full verb.

Thus, the use of the construction *haben*+PII, as an expression of aspectual or temporal markedness (i.e. perfectivity/anteriority), gradually expanded in the course of the 9th and 10th ct., finally providing the input for auxiliarising *haben*, a case of abrupt grammatical change. As said above (p. 32), 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* was already there in the classical period.

(37) a. Necdum omnia (...) edita facinora habent

not-yet all.ACC.pl detect.PII.ACC.pl crime.GEN.pl have.3rdpl

(Livius XXXIX, 16, 3; cf. Salvi 1987: 229)

(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 auxiliary in T°, whereas finite forms are always in Agr°.

'The did not yet have all of the crimes detected.'

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

'Since Hannibal had an 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 just 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.).

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

3.3. 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[18] as an auxiliary 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 usualised form becomes regularised as part of the grammar.[19] "Innovative aspectual forms (were) reinterpreted as temporal or diathetic later on" (Dik 1987: 80), such that an operational tense system replaces compositional aspectual distinctions.

(39) Caesar victus est. (vgl. Dik 1987: 69)

Caesar beaten is

⇒ '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, Lat. sentences with the perfect of ergatives and deponentia were rendered by a predicative construction with BE+PII. This

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[18] We 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 reconstructable.

[19] Note, however, that Dik (1987: 77ff) also draws attention to the role of overgeneralisation by language learners.

is illustrated below with synopses of Bible verses, each with the version from Luther's Bible for comparison.

(40) a. qui *venerant* ex omni castello Galilaeae (*Vulgata*; Lk 5,17)

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

'who had come from all towns in Galilee'

c. þaiei wesun gaquman-*ai* us allama haimo Galeilaias (*Wulfila*)

who were come.PII-NOM.pl from all homes Galilee.GEN

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

(41) a. defuncti sunt enim qui querebant animam pueri (*Vulgata*; Mt 2,20)

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

'Those who sought the boy's life died.'

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, exactly like that of transitive verbs. It does not just 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 to create 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.

(42) 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

Whereas, unlike in English, there was no grammaticalisation of the periphrasis BE+PI 42b) in OHG, BE+PII was grammaticalised as an analytic tense form for ergative verbs. Like in other languages, the asymmetry of auxiliary selection also persisted[20] in German with some language-specific variation having developed in all of the languages.[21]

(43) a. Ich *bin* in der Schule geblieben.

b. Je *suis* resté à l'école.

(44) 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 2009a: 300).

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

[21] We concede that this statement is also an oversimplification. This is not the right place, however, to repeat the large quantity of discussion on auxiliary selection. Let me simply refer to the discussion in Öhl (2009b: 295ff.) and some more representative work like Haider & Rindler-Schjerve (1987) and Grewendorf (1989).

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

(45) 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.

4. Conclusion

My *long-term-objective* that I intend to reach by broadening out the database to other areas of change (as I did in analyzing change in complementiser systems in Öhl 2009b; Öhl/Korn 2006), is a concise integrative theory of language variation and change simultaneously considering and assessing both performance based factors and the conditions related to language acquisition. A preliminary model has been presented here, and illustrated with the development of analytic inflection.

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 merely based on language acquisition.

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 new grammatical system. It is characteristic of such a kind of change that the options of using such a newly developed analytic form significantly differ from those for the original periphrasis, e.g. by the generalisation over unergative verbs.

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