On the pragmatics of subjectification

The emergence and grammaticalization of a verb-less Allative Future in Ancient Egyptian

Eitan Grossman & Stéphane Polis

(Hebrew University of Jerusalem – F.R.S.-FNRS/University of Liège)

"The inventory of extant synchronic types are but the inventory
of available *grammaticalization pathways* that gave rise to them.
Consequently, the constraints on syntactic universals are in essence
constraints on the developmental process of grammaticalization,
rather than on the resulting synchronic structures"
Talmy Givón (2001: 205).

"All explanations for linguistic phenomena, both universal and language-specific,
must necessarily have a diachronic dimension, since all linguistic phenomena
have histories which determine their present conventionalized state.
With respect to language universals [...], an explanation is not valid
unless it can be demonstrated that the explanatory principle is actually
at work in the mechanism of change that brings about the cross-linguistic pattern.
Taking the role of diachrony one step further, one could argue that
since there are so few absolute universals, identifying the mechanisms of change
behind cross-linguistic patterns will lead us closer to an understanding
of the factors that produce cross-linguistic patterns, and these factors,
I would maintain, are the only true universals of language [...].
Thus, the focus for establishing the explanations for cross-linguistic similarities
should be on the mechanisms of change"
Joan Bybee (2008: 108).

Abstract

In this paper, we argue that an expanded conception of the distinction between speaker-oriented and subject-oriented inferences is crucial for understanding the motivations and mechanisms of semantic change in grammaticalization and subjectivation, on the one hand, and for clarifying the links between semantic change and reductive formal changes. Speaker-oriented inferences have significant consequences, leading to the relaxation of selectional restrictions on a construction. In turn, the relaxation of selectional restrictions can create conditions in which the type- and token-frequency of a construction can rise considerably. Furthermore, changes in the selectional restrictions on a construction can themselves catalyze semantic change by coercing listeners into new form-function pairings. This framework is applied to the grammaticalization of allative futures, a typological comparative concept developed in order to compare structurally diverse future tenses. A small typological study allows us to reconsider some problematic pathways of grammaticalization and to suggest some alternative analyses. Following the typological discussion, a detailed diachronic case study of a verbless allative future in Ancient Egyptian is presented.

0 Introduction

In this paper, we explore the relationship between grammaticalization and (inter)-subjectification by addressing a crucial issue: how do the pragmatic mechanisms involved in semantic changes typical of both grammaticalization and (inter)subjectification lead to functional and formal change in constructions, specifically the relaxation of selectional restrictions? The main argument made here is that speaker-oriented inferences made by listeners, as opposed to subject-oriented ones, are what lead to the relaxation of selectional restrictions on constructions. We also suggest that speaker-oriented inferences lead to a rise in type frequency and (possibly) text-frequency, which in turn has consequences for the kind of formal changes often associated with grammaticalization. This has considerable consequences for a number claims made in the literature on grammaticalization and (inter)subjectification, such as the role of metaphor, the relative importance attributed to speakers vs. listeners, and the status of the unidirectional process of subjectification proposed by Traugott.

In the first part of this paper [§1], we discuss the relation between functional and formal change in grammaticalization, proposing that the former indirectly motivates the latter. In §2 we argue for a greater role for the listener in semantic change and for an expanded conception of the distinction between subject-oriented and speaker-oriented inferences. Section 3 [§3] presents a small-scale typological study of *allative futures* and of their grammaticalization pathways. In section 4 [§4], we investigate the emergence and subsequent grammaticalization of a verb-less Allative Future in Ancient Egyptian: the evolution of this construction is an interesting locus for investigating the relationship between grammaticalization and some mechanisms traditionally associated with subjectification.

1 Formal and functional change in grammaticalization

We frame the following discussion as part of the attempt to understand two central problems in grammaticalization studies, namely,

> [1] how does functional (pragmatic and semantic) change correlate with formal (syntactic, morphological and phonological) change?
> [2] how does functional change come about?

We will address the first question in this section, leaving the second question for section 2. There are four possible answers to the first question:

1. The null hypothesis is that there is no relationship between functional and formal change.
2. Formal change motivates functional change.

Both of these answers are contradicted by empirical evidence. The first one is falsified by the fact that, in grammaticalization, functional change and formal change go together so regularly that linguists have spoken of 'coevolution' of form and function.[1] The second possible answer[2] cannot be correct, since functional change overwhelmingly precedes formal change,[3] although we will see below that this statement bears reconsideration. Moreover, semantic change in grammaticalization — which is highly regular, proceeding along a finite number of

1 See E.g. Emanatian 1992; Bybee et al. 1994: 19; Lehmann 1995.
2 See e.g. Lightfood 1991 and Warner 1993: e.g. 237-239.
3 See Sapir 1921: 98; Givón 1991: 122-123; Gildea 1997: 182; Hopper & Traugott 2003: 100.

"pathways"[4] — can occur even when morphological and phonological changes do not (see below).

3. Functional change directly/automatically motivates formal change.

This claim has not often been made, but Rubba (1994: 81), for instance, argued that: "grammaticalization can be viewed primarily as semantic change, with formal changes typical of grammaticalization following automatically as consequences of semantic change."

This claim is not supported by facts. There are plenty of instances of semantic change without subsequent formal change.[5] Moreover, iconicity does not adequately explain the mechanisms of language change.[6] This leaves us with:

4. Functional change *indirectly* motivates formal change.

But *how*?[7] In order to address this question, we should keep in mind some robust tendencies — or universals — of language change that we assume to be uncontroversial in the present paper:

> [a] Semantic change in grammaticalization results from basic pragmatic mechanisms of usage (e.g. Traugott & Dasher 2001: IITSC). This has been described in an informal way as "semanticization," or more broadly, "the transfer of context to code" (see e.g. Givón 2005). A widely accepted model of grammaticalization (see Nicolle 2007: 47-48) accordingly runs as follows: change of use (PRAGMATIC) → change of meaning (SEMANTIC) → change of form (SYNTACTIC + PHONOLOGICAL).
>
> [b] Following the initiation of semantic change, the selectional restrictions on constructions are relaxed. This is generally considered to be the result of 'analogy' or 'context-expansion' (Givón 1991, Hopper & Traugott 2003). This is similar to Himmelmann's notion of 'host-class expansion' (Himmelmann 2004), which has been applied to the 'be going to' future in Brinton & Traugott (2005: 72-73). In terms of grammatical constructionalization (Trousdale 2010), this is typified by an increase in productivity, an increase in generality or constructional scope, and a decrease in semantic compositionality.
>
> [c] Morphophonological change in grammaticalization (e.g. reduction and univerbation) is **primarily** the result of frequency effects.[8]
>
> > [c.1] Items with high *token* frequency tend to undergo the Reducing Effect, viz., reduction and loss of constituency (with semantic bleaching, see Bybee 2007: 271). Morpho-syntactic coding asymmetries tend to reflect differential frequency: more economical coding correlates with high frequency (Haspelmath 2008).
> >
> > [c.2] Items with high *token* frequency tend to undergo the Conserving Effect, viz. to resist regularizing change, such as analogy.
> >
> > [c.3] On the other hand, items with high *type* frequency correlate with high productivity, "the likelihood that a pattern will apply to new forms" (Bybee 2007: 275; 2010: 67). Bybee also suggests that high type-frequency "ensures that a construction will be used frequently," which can be interpreted as meaning that it can lead to a rise in token-frequency.

Assuming that these tendencies (or universals) are not related in an arbitrary way, any theory of grammaticalization has to account for the ways in which functional change leads to formal change. The question then becomes: how does pragmatically-motivated semantic change lead

4 See e.g. Bybee et al. 1994; Heine & Kuteva 2002.

5 See Bisang 2004 & 2008.

6 Haspelmath's (2008a) argument in favor of frequency (and against iconicity) could be easily applied to the mechanism of language change.

7 The *why*, or motivations for grammaticalization, is yet another question. In this respect see the thoughts put forward in Frajzyngier (2008: 72-75).

8 See e.g. Schuchardt 1885; Zipf 1935; Leslau 1969; Bybee 2007, 2010; Haspelmath 2008b.

to the relaxation of selectional restrictions, on the one hand, and to a rise in frequency, on the other?

We hypothesize that the abovementioned principles interact in the following way: pragmatic (and correlated semantic) change — especially the accumulation of speaker-oriented meanings, whether through inferencing or the breakdown of presupposition accommodation (see §2) — leads to the decreased compositionality of constructional meaning. This causes the relaxation of selectional restrictions on constructions, which in turn leads to a rise in type frequency, and hence productivity. A rise in token-frequency may be attributable to two mutually-reinforcing motivations. On the one hand, a rise in type-frequency might itself lead to a rise in token-frequency (see above c.3), and on the other, speaker-oriented meanings are predicted to be more common overall than the meanings of their lexical source constructions. It is this rise in token-frequency that leads to reductive morphophonological change.

This hypothesis generates an interesting prediction: functional change may occur, but if it does not result in a rise in token-frequency, it will not lead to extensive reductive morphophonological changes.

Evidence supporting this prediction comes from studies on grammaticalization in East and Mainland Southeast Asian languages, e.g., Mon-Khmer, Tai, Sinitic, Hmong-Mien (Bisang 2004, 2008; Ansaldo & Lim 2004). Two main types of explanations have been offered for the paucity of reductive changes, such as univerbation and the resulting development of morphological paradigms, in these languages. The first argues that such changes are blocked by the structural properties of these languages, many of which are strongly isolating, often tonal (excluding Mon-Khmer), with highly discrete syllable boundaries and significant phonotactic constraints. In some cases, some phonetic erosion can be observed, e.g., reduced syllable duration and vowel quantity, but more radical reductive changes do not occur. The second type of explanation is more relevant here: the broad functional spectrum of grammatical markers, combined with their lack of obligatoriness, means that functional change does not necessarily lead to a rise in token frequency.

In other words, functional change occurs — in pathways of development that are similar to those observed elsewhere — but the rise in token frequency crucial for reductive morphophonological change does not. This shows that the processes described here are not teleological or inevitable, but rather, functional changes create conditions in which reductive morphophonological change can *but need not* occur.

We will now turn to the second question raised above, focusing on a serious flaw in the predominant approaches to subjectification and semantic change in grammaticalization, namely, an overemphasis on the role of the speaker in initiating functional change.

2 The role of the listener in subjectification and grammaticalization: The Two to Tango Principle

In a series of publications, Traugott and her colleagues have proposed the most articulated framework to date for describing regular semantic change. Known as the *Invited Inferencing Theory of Semantic Change* (IITS), the basic idea is adumbrated in Traugott and Dasher (2002): conversational inferences gradually become conventionalized and "semanticized."

Coded ("semantic") meanings give rise to utterance-token meanings: invited inferences[9] (made "on the fly") that have not been crystallized into commonly used implicatures. These can develop into utterance-type meanings, or generalized invited inferences (GIIN), which are "preferred meanings and conventions of use in language-specific communities, but may be cancelled." These, in turn, can become coded meanings, if previous meanings recede or disappear.

Traugott's approach to (inter)subjectification is especially valuable here, as it provides us with testable generalizations and hypotheses about semantic change.[10] There are three aspects of Traugott's conception of subjectification that we would like to highlight:

> [1] The generalization that over time, objective or less subjective meanings, become more subjective and eventually intersubjective.
> [2] This generalization is considered to capture a unidirectional pathway of change.
> [3] It is heavily speaker-oriented, since "meanings are recruited by the speaker to encode and regulates attitudes and beliefs" (Traugott 2010: 35), and relies strongly on the notion of invited inferences.

It is the third aspect that we would like to focus on in the present section,[11] since it is crucial for understanding the link between subjectification and grammaticalization.

Traugott's framework overemphasizes the role of the speaker and neglects that of the listener[12] in language change. She states, e.g., "[a] hearer/perception model explains little or nothing about why subjectification occurs at all. As speakers, we tend to understand in terms of our own schemas, so why would we constantly try to process from the perspective of the interlocutor, enrich the interlocutor's subjective perspective, and semanticize it? Furthermore, it explains nothing about why subjectification would precede intersubjectification" (2010:55).

While heavily speaker-oriented approaches are prevalent in historical linguistics, especially in grammaticalization studies (e.g. Keller 1994; Haspelmath 1999), they are problematic, since an inference has to be perceived and made by listeners in order for them to propagate it in their role as speakers. As Hansen has stressed "speakers may innovate as much as they please, but if hearers do not perceive those innovations, they obviously will not take hold" (Hansen 2008: 100). We can call this the *Two to Tango Principle*.

Moreover, this overemphasis on speakers — specifically, speaker intentions — is also in conflict with a well-established body of research that indicates the centrality of the listener as the locus of "signal misinterpretation" (Donegan 1993) in other domains of language change, most notably sound change. For example, Ohala has argued in a number of publications (e.g., Ohala 1981, 1993), that speaker-produced variation provides the raw materials for sound

9 The term "invited inferences" was chosen "to elide the complexities of communication in which the speaker/writer evokes implicatures and invites the addressee/reader to infer them" (Traugott and Dasher 2002: 5).

10 The notion of subjectification has — unlike the key concept of subjectivity — no long history in linguistics, but the literature on the topic is nowadays plethoric. Convenient overviews of the two main line of thoughts — namely the one of Traugott and the one of Langacker (see Cornillie 2007 for a discussion of the two approaches when applied to the same phenomena) — and of the current issues are to be found in Athanasiadou et. al. 2006, De Smet & Verstaete 2006 and Cuyckens et al. 2010. The present study obviously falls within the pragmatically, textually and diachronically oriented approach developed by Traugott and others.

11 In the case study of §4, on the other hand, we will focus more specifically on the mechanism of subjectification itself by describing the raise of speaker-oriented inferences and the retraction of subject-oriented ones that we consider to be the underlying process of subjectification.

12 We will use the term 'listener' rather than 'hearer' in order to emphasize the active role of the addressee.

change, but that it is listeners' interpretation or misinterpretation of acoustic signals that results in sound change.[13] According to Ohala, four scenarios are possible: (i) listeners can 'correct' acoustically unclear signals, resulting in diachronic stability, (ii) they can confuse acoustically similar sounds, (iii) they can hypo-correct and (iv) they can hyper-correct. Each one of these scenarios has a different outcome for language change (see the discussion in Croft 2000: 76-78). Labov also attributes a crucial role to listeners: "[i]t is not the desire to be understood, but rather the consequence of misunderstanding that influences language change. This mechanism implies a mismatch between producer and interpreter: the type of built-in instability that we would expect to find behind long-term shifts in language behavior" (1994: 586, see Silverman 2010 for a careful comparison and evaluation of the approaches of Ohala and Labov). Outside of the realm of sound change, Givón (1991) and Bybee et al. (1994) have emphasized the role of listener (mis)interpretation in language change.

The importance of the listener for language change has been reaffirmed in recent research on pragmatics. For example, Schwenter & Waltereit (2010) propose that "[h]earers have a clear 'regulatory' role in innovation, as their ability, or willingness, to follow speakers' innovations places a cap on an innovation's likelihood to be propagated in the linguistic community. However, the contribution that hearers make to semantic change is not limited to constraining speakers' creativity. Hearers can indeed have a very active role in that process, namely by assigning novel interpretations to forms, constructions, or utterances they hear and by using these interpretations in their own subsequent use as speakers." (2010:77)

Eckardt (2009) has made a valuable contribution to this discussion with her principle of "Avoid Pragmatic Overload" (APO), according to which

> "We find linguistic exchange where an utterance *u* presupposes information *Φ* that is 'hard to believe' not in the sense that it would be a proposition with clear but dubitable content. Sometimes, presuppositions are 'hard to believe' in that it is unclear what the presupposed facts that would license an utterance could look like at all. Hearers (or readers) of such utterances will diagnose that (i) either the speaker believes facts about the world that are unclear and dubious or that (ii) the speaker might have used words or phrases in a sense that were formerly unknown to the hearer. If the hearer pursues hypothesis (ii), s/he may come to interpret the utterance in some innovative way *u'* that defines a new language (micro) stage L_{new} even though the speaker firmly believed that he/she was making an utterance *u* in the conservative L_{old}. From the speaker's perspective, all the hearer would have had to do is adopt-and-believe some presuppositions (we will use the official term accommodation later). From the hearer's perspective, it was harder to accommodate the presupposed information than to believe that the utterance was really something new. The utterance created too much *pragmatic overload*." (2009: 22-23)

Furthermore, Eckardt provides a broad explanation of Traugottian subjectification (the observation that meanings tend to become more subjective over time), and to an extent, an answer to Traugott's doubts about how and why a listener could contribute to subjectification: "the hearer, confronted with [an utterance that has implausible presuppositions], has to make a guess what the speaker might have wanted to express" (2009:36). However, it is important to note that Eckardt is referring to a situation in which unbacked or implausible presuppositions are the problem. It is not certain that the *Avoid Pragmatic Overload* principle is necessary or helpful with other pragmatic situations.

13 See Lindblom et al. (1984, 1995) for a slightly different approach, which admits most of Ohala's points but attributes a somewhat greater role to speakers.

We would also like to mention Ariel's idea that certain "truth-compatible inferences" (as opposed to implicatures and explicated inferences) are not speaker-intended and are inferred only at the addressee's responsibility (2008: 23-24, 84-89). Inferences that are not speaker-intended, to the extent that they are relevant to language change, would also tend to limit the role of the speaker in initiating language change.

Incidentally, this suggestion is extremely pregnant for grammaticalization studies: could the kind of regular semantic changes observed in cross-linguistically recurring grammaticalization pathways be based on widely-available (if not universal) and unintended truth-compatible inferences? Since comparable source are grammaticalized in a finite number of pathways, this implies that the range of inferences that can be made on the basis of a given source construction is also finite. Furthermore, since these grammaticalization pathways recur across languages without genetic, areal, or cultural affinities, it might be that these finite inferences from a given source construction are universally available as truth-compatible inferences.

2.1 Speaker-oriented vs subject-oriented inferences

Interestingly enough, the account of pragmatic inferencing in the highly influential Bybee et al. (1994) does not overemphasize the role of the speaker. Rather, it tends to privilege the role of the listener as responsible for innovative interpretations. Take, for example, their account of the development of the English *going-to* future:

> "[f]rom intention we can also arrive at prediction through inference. This step can be illustrated with the Modern English phrase *be going to*, which is used both for intention and prediction. If someone says *When he gets a pay raise, Jack's gonna start looking for a house*, we could actually interpret that as a statement about the subject's intentions or a prediction made by the speaker. If the speaker asserts that someone intends to do something, the hearer can safely infer (unless otherwise advised) that the speaker also predicts that the subject will do that thing. The hearer's reasoning is that the speaker would not report someone's intentions (without further comment) unless the speaker expects the intentions to be carried out" (1994: 288).

Bybee at al. (1994) make a distinction that is crucial for understanding the pragmatic mechanisms involved in both grammaticalization and subjectification, namely, the distinction between *speaker-oriented* and *subject-oriented inferences*. Speaker-oriented inferences are those in which the listener infers that the speaker is talking about his or her state of mind (or view of the event) rather than that of the subject (subject-oriented inference). Curiously, this difference, which can be traced back to Benveniste's (1958) distinction between the speaking subject (*sujet d'énonciation)* and the grammatical subject (*sujet d'énoncé*),[14] has been downplayed in Traugott's approach, as she considers it to be relevant primarily for "raising constructions," such as the abovementioned *going-to* future.[15]

We would like to expand on the distinction between speaker-oriented and subject-oriented inferences and to sketch some of its consequences.[16] First of all, and most importantly,

14 Although it appears that the idiom *sujet d'énonciation* does *not* occur in Benveniste's own writings (Normand 1986: 201-202).

15 See e.g. Traugott & Dasher (2002: 98): "It is true that in relevant linguistic constructions, the 'objectively profiled subject' may well be attenuated in the process of subjectification. For us this is a matter of construction change (raising) that is consistent with the directionality of semantic change discussed here (less > more subjective)."

16 The speaker-orientation is a crucial dimension of Narrog' (2005, 20007, 2010) approach to (inter)subjectification. Indeed, he states that "speaker-orientation" is "the crucial dimension in cross-

speaker-oriented inferences are consistently less compositional than subject-oriented ones. In plain terms, the meaning of the construction as a whole is less predictable from the meaning of its parts (Goldberg 1995). The consequences of this for semantic change in grammaticalization are considerable. Inferences that reflect a less compositional meaning are not constrained by the same selectional restrictions as the earlier, more compositional meaning.[17] For example, if we take the sentence *Sebastian is going to move to Berlin*, a listener can make (at least) two inferences:

[a] The speaker is reporting on the *intentions* of the agentive subject = *Subject-oriented inference*
[b] The speaker is reporting on his or her *prediction* of what will come to pass = *Speaker-oriented inference*

The interpretation reflected by the speaker-oriented inference is less compositional than that reflected by the subject-oriented inference. This is realized by a significant difference in the selectional restrictions on the construction. Construction (a) requires an agentive subject capable of intentional action, while construction (b) does not. As a result, if the listener replicates the construction with the new, less compositional meaning, he/she is not constrained by the selectional restrictions of the older construction. In effect, this leads over time to the relaxation of selectional restrictions on a construction, and the occurrence of new types of participants, e.g., subjects, predicates, etc.

She's going to sit there and cry (static predicate).
The volcano is going to erupt/*It's going to rain* (non-agentive/non-intention/control-less subjects).

2.2 Types of inference in a grammaticalization pathway from "finish" to perfect

For an example outside the domain of futures, let's look at a common grammaticalization pathway, from constructions comprising a lexical item meaning "finish" to perfect constructions (see Bybee et al. 1994: 69-70, 104-105; Heine & Kuteva 2002: 134-137). We will mention a number of languages in which this pathway occurs, in order to show that it is not limited genetically or areally.

Ex. 1 Spanish *acabar de* + infinitive (Jara Yupanqui 2006)
Es horrible lo que acaba de occurir!
"It's horrible, what just happened!"

Ex. 2 Swahili *me-* (Heine & Reh 1984; Heine, Claudi & Hünnemeyer 1991)
a-me-fika *a-mele* *ku-fika*
3SG-PRF-come 3SG-finish INF-come
"he has come/he has finished coming"

In Bantu, this is a complex grammaticalization cycle, with "finish" grammaticalized into a perfect marker three times. In colloquial Swahili, especially Swahili-based pidgins, it is still ongoing:

Ex. 3 Kenyan Pidgin Swahili (Heine *cite*)
baba *kw-isha* *kwenda*

---

linguistic change of modal markers" and claims that "diachronically, modal meanings always shift in the direction of increased speaker-orientation" (Narrog 2010: 394). The relation between his speaker-orientation and the speaker-oriented inferences argued for in this paper are discussed further in §4.4.

17 It might be counterintuitive for some readers to think of an inference as the meaning of a construction, since constructions are by definition conventionalized form-function pairings. However, we need a way of referring to the pairing of a form and a listener's interpretation of the meaning of the form.

Father INF-finish go
"Father has left."

East Asian languages (markers often described as CRS, Currently Relevant State):

Ex. 4 Mandarin *-le* < *liao* 'finish' (Li & Thompson 1982; Sun 1996)
tā chū qu mǎi dōngxi le
She exit go buy thing CRS
"She's gone shopping."

Ex. 5 Palaung (Mon-Khmer; Milne 1921)
nāng hwo̱-i pwo̱
Lady finish birth
"The lady has given birth."

Ex. 6 Thai (Tai-Kadai; Howard 2000; Shahar Shirtz, p.c.)
nuan kin khâaw lɛ́ɛw
Nuan eat rice finish (CRS)
"Nuan has eaten."

Ex. 7 Burmese pì 'finish' > pi 'CRS' (Tibeto-Burman; Allot 1965; Romeo 2008; Pavel Ozerov p.c.)
ɲà mə-eiʔ-ta θṍu-ɲà ʃí-pi
night NEG1-sleep-NOM 3-night be-CRS
"I haven't slept for three nights."

Ex. 8 French Creoles[18] (Detges 2000)
MauFrCr *((f)i)n*, SeyfrCr *((f)i)n*, RéuFrCr *fin(i)*
Lé-Roi fini faire eine la loi (MauFrCr, 1835)
the.M-king finish do INDEF the.F law
"The king is finished with making a law/has really just made a law."

Ex. 9 African American Vernacular English (& Gullah)
"I done seen her on Youtube (Internet)."
"Sharon done leave/lef Boot when Al meet her" (Mufwene 2001).

Ex. 10 American Sign Language (Pfau & Steinback 2006, see Meir 1999 for an 'already' Perfect in ISL)
TOUCH FINISH JAPAN YOU
"Have you been to Japan?"

In a case study dealing with the cyclical grammaticalization of a 'finish'-source perfects in Egyptian and Coptic, Grossman (2009) shows that the gradual relaxation of selectional restrictions are crucial for the grammaticalization of the constructions. In this pathway, the main changes (at least, the ones that are relevant to cross-linguistic comparison) involve the loss of selectional restrictions on the subject and the predicate. An important notion is that of subject control:[19] "finish" lexical verbs require a volitional agentive subject that has and exercises control over a dynamic event or process. Perfects, on the other hand, do not have any such selectional restrictions. However, it turns out that in the case of Coptic, the loss of subject control and the opening up of the construction to new subject types and predicates types does not happen in a single jump, but rather in a gradual series of changes.

18 Examples in other Creoles are, e.g., for Spanish Creoles (Detges 2000): Sranan *k(a)ba*, Papamientu *kaba*; and English Creoles: GuyECr, JamaicanECr, Krio *don*, Tok Pisin *pinis* (*mi lukim pinis* 'I have seen').

19 Incidentally, Traugott downplays this kind of development, but Langacker highlights "the attenuation of the degree of control exerted by an agentive subject" (Langacker 1999: 147).

The actual historical data are complex, so we will give a highly simplified account. The pathway of semantic change can be represented schematically in the following way (a and b represent readings of a given surface string).

Stage 1. An agentive subject has and exercises control over a process. As such, the construction is restricted to agentive subjects and predicates that allow an agentive subject to bring a process to an end.

[a] John finished building the house.

Stage 2. An agentive subject has but does not necessarily exercise control over the process. Here we find numerous bridging contexts, in which subject control may be present but is not especially salient. This allows listeners to infer that subject control is not a necessary part of the constructional meaning. Subject-oriented inferences compete with speaker-oriented ones, in which the listener infers that the speaker is talking about the end of the event as a whole, rather than reporting on the actions of a subject.

[a] They finished mocking him.

[b] They had mocked him.

Ex. 11 Coptic, Bohairic (Mt 27 :31)

eta-u-ouô	*e-u-sôbi*	*mmo-f*
CVB.PFV-3PL-finish:INF	CVB.IPFV-3PL-mock:INF	OBJ-3SG.M

"After they finished mocking him."

Stage 3. The subject is potentially agentive, but a control reading is blocked by the predicate type. This stage is made possible by speaker-oriented inferences at Stage 2.

~~[a] John finished dying.~~

[b] John had died.

Ex. 12 Coptic, Early Bohairic (Jn 19:33)

eta-u-nau	*ce-a-f-ouô*	*e-f-mou*
CVB.PFV-3PL-see:INF	that-AUX:PRF-3SG.M-finish:INF	CVB.IPFV-3SG.M-die:INF

"When they saw that he was already dead."

Stage 4. Non-agentive subjects occur. The perfect inference is the only one available.

[a] ~~The end finished coming.~~

[b] The end has come.

Ex. 13 Coptic, Sahidic (unpublished Paris ms)

[a-]f-ouô	*e-f-ei*
[AUX:PRF-]3SG.M-finish:INF	CVB.IMPV-3SG.M-come:INF

"It has already come"

Stage 3 probably involves Eckardt's (2009) *Avoid Pragmatic Overload* principle rather than inferences, as there is already a semantic incompatibility with the lexical restrictions imposed by the source construction.

Let's assume that a speaker has an innovative, less compositional meaning (e.g., as an explicature), and uses it with a listener who only has the older, coded meaning:

"Did you hear? John finished dying!"

The listener can try to accommodate a presupposition, e.g., John is supernatural and has control over things that normal people don't, or to resolve the implausibility through inferences, but a literal reading is unlikely (if not impossible). The APO principle may coerce the listener into a new form-function pairing. However, the new function may not be *completely* new, since it existed as an inference at earlier stages. Traces of this earlier inference may be at least part of what guides a listener to the chosen form-function pairing, rather than abstract notions of 'simplicity,' as suggested by Eckardt (2009). Crucially, it is the

'surprising' (for the listener) or unaccommodatable relaxation of the selectional restrictions on the construction that coerce her into a new form-function pairing.[20] This scenario provides an interesting glimpse of the possible interaction between inferencing and presupposition accommodation in semantic change: it may be that inferencing is more prominent at the beginning of semantic change, while APO kicks in when enough speaker-oriented inferences have accumulated and led to the relaxation of selectional restrictions on a construction.

This type of pathway shows that while meaning can become increasingly speaker-oriented over time, resulting in subjectification, the role of the speaker herself can be quite limited. One can compare the role of the speaker in this domain to her role in sound change: the speaker need not 'invite' an inference for it to be made — all one needs is a potentially truth-compatible and not necessarily speaker-intended inference to be available due to the lexical meaning of the parts of a construction and their collocation in discourse. As noted above, the wide cross-linguistic recurrence of certain pathways may indicate that the kinds of inference that are especially important in grammaticalization are truth-compatible, non-speaker-intended rather than invited inferences.

In the case of the grammaticalization of 'finish' constructions to perfect constructions in Coptic, the relaxation of selectional restrictions led to a rise in type frequency, but the innovative perfect never reached a particularly high token frequency, perhaps due to the existence of competing perfect constructions available to language users. However, the construction underwent numerous syntactic changes, but no reductive morphophonological changes. We conclude, on this basis, that type frequency is a weak predictor of token frequency, but that the correlation between token frequency and reductive changes remains a strong one.

Nonetheless, the token frequency of the grammaticalized perfect is higher than that of the lexical source construction. This allows us to advance the hypothesis that the types of meanings associated with grammaticalized constructions — especially those that are due to speaker-oriented inferences — are likely to be higher in terms of token frequency than the meanings of their source constructions. For example, we hypothesize that future meanings will be more frequent overall than the meanings of their source constructions, such as desire or purpose. However, this hypothesis still has to be investigated empirically across a broader range of meaning-types and languages.

Before moving on, we would like to point out that the spread of a construction to new types of, e.g., subjects and predicates is normally attributed to analogical extension (and left at that). We think the account proposed here either renders explanations from analogy unnecessary, or motivates them.[21] As we see it, the extension is made possible because the new meanings are not incompatible with the same subjects and predicates as is the meaning of the source construction. This is a better explanation than simple analogy, because one would expect analogical change to apply more or earlier to *less* frequent items, and constructions that undergo grammaticalization would be expected to increase in token-frequency. Moreover,

20 For linguists who consider selectional restrictions to belong to the "formal" side of language, this would be a nice case of "formal change motivating functional change," a counter-example to what is usually claimed in functional-typological linguistics. However, it must be admitted that these selectional restrictions, even if they are realized syntactically, are nonetheless semantically motivated.

21 For recent attempts to reinterpret grammaticalization as analogy, see Fischer (2010) and Kiparsky (forthcoming).

there isn't always a clear 'template' or target for analogy, since entirely new categories (e.g., definite articles) can emerge via grammaticalization.[22]

The account sketched here provides a principled way to explain some phenomena related to grammaticalization, such as the differential semantic changes observed across person paradigms. For example, first person futures are often conservative in their semantics, since hearers have no reason to infer a difference between a speaker's report of his intention to carry out an action, on the one hand, and a prediction of his that the state of affairs will come to pass, on the other. This difference is salient, however, for third person subjects (see below section §4.3), and as such, the approach adopted here would predict that first person futures would develop a pure prediction meaning after third persons.

To recapitulate, we propose that speaker-oriented inferences lead to the relaxation of selectional restrictions on constructions, which leads to a rise in type frequency. We hypothesize that a rise in type frequency, as well as speaker-oriented meanings themselves, can lead to a rise in token frequency, which in turn creates conditions for reductive morphophonological changes to occur.

We will now turn to the second part of this paper, which explores the ideas proposed above in a case study of allative futures. Section 3 is devoted to a small typological study defining the cross-linguistic comparative concept of *allative future* and exploring the crosslinguistically possible grammaticalization pathways of these futures; section 4 is a corpus-based diachronic study of the emergence and subsequent grammaticalization of a verb-less allative future in Ancient Egyptian.

3 Pathways for the development of future tenses: Towards a typology of allative futures

According to numerous typological studies (e.g. Bybee & Pagliuca 1987; Bybee et al. 1991; 1994: 243-280; Dahl 2000: 313-318, Heine & Kuteva 2002: 331), a relatively limited set of pathways is documented cross-linguistically for the development of primary[23] future tenses (see fig. 1). A prominent type of source construction for primary futures involves movement verbs. Other well-attested source constructions are agent-oriented modal grams (mostly those that express volition, obligation and, to a lesser extent, ability) and temporal adverbs.

The hypothesis advanced in Bybee et al. 1994 (279-280) predicts that intention is the crucial bridge to prediction, a meaning that characterizes any fully grammaticalized future tense.[24] If this hypothesis holds, the most common source constructions for future tenses are therefore typologically expected to be those that yield "the intention inference most easily — desire, strong obligation, and movement towards a goal."

22 However, see Bybee (2010) for an account of how analogy can create new categories.

23 We exclude from the present treatment the aspectual source constructions (both inflexionally expressed or auxiliary based) for future tenses. Indeed, the generalizations about the grammaticalization pathways that they follow are still problematic (see e.g. Hilpert 2008: 27).

24 All future constructions that can convey prediction-based future time reference may of course preserve an array of earlier meanings. Accordingly, long arguments regarding the division of labor between temporal, modal and aspectual meaning are often fruitless and one should not expect to find purely monosemous futures that do not have, for instance, associated modal meanings. On this point, Hilpert's criticism (2008a: 26-27; 185-186) of the 'futages' hypotheses of Bybee et al. (1994: 279) is probably excessive.

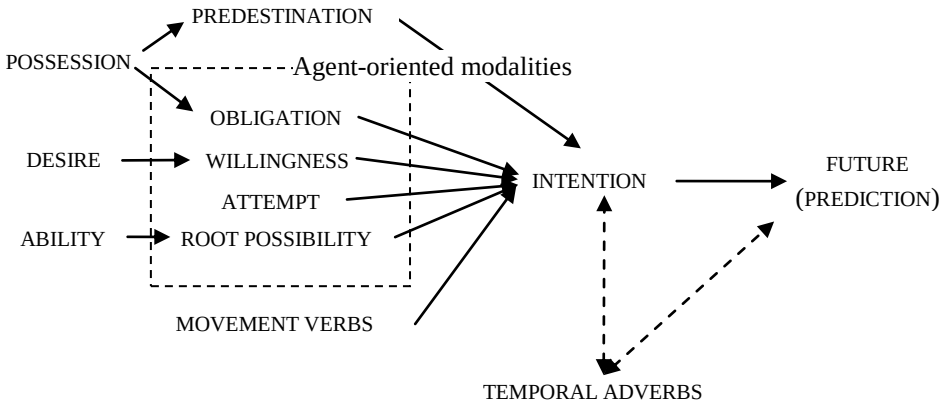

Figure 1. Pathways for the development of future tenses (synthesis of Bybee et al. 1994)

Admittedly, detailed case studies are still required in order to test the suggestive hypotheses related to these pathways,[25] some of which having already been questioned (see Hilpert 2008a and 2008b and §3.3).

Before proceeding with such a case study in section 4, we will propose the comparative concept of ALLATIVE FUTURE (§3.1). This comparative concept allows us to suggest a generalization about one of the pathway in fig. 1, namely the one that goes from MOVEMENT TOWARDS to FUTURE tense expression: any allative source construction, i.e. any construction that encodes spatial goal or purpose — crucially, not only verbal constructions — is a possible candidate for grammaticalization as a future tense (see the pilot typological study in §3.2). On the other hand, postulating such a comparative concept does not lead to subsuming all the grammaticalization processes under a single pathway as in fig. 1 (ALLATIVE CONSTRUCTION – INTENTION – FUTURE): the specific morphosyntax and semantics of particular allative constructions in individual systems of oppositions can pave different paths to the future (§3.3). If this observation proves to be valid, the mechanisms of "subjectification" highlighted in the case-study of section 4 *cannot* be applied to all the allative constructions but, on the contrary, are pathway-specific.

3.1 Towards a typology of allative future construction: Comparative concepts and descriptive categories

We follow Haspelmath (2010) in distinguishing between *comparative concepts* and *descriptive categories*, which leads to an interesting revision of the categorization of the grammaticalization pathways in which future tenses develop.

Since the distinction between comparative concepts and descriptive categories has not yet been widely adopted, we will briefly clarify these notions and their relevance for the present study. Comparative concepts are

> "concepts created by comparative linguists for the specific purpose of cross-linguistic comparison. They are not needed by descriptive linguists or by speakers. They are not psychologically real, and they cannot be right or wrong. They can only be more or less well-suited to the task of permitting cross-linguistic comparison. Comparative concepts are universally applicable, and they are defined on the basis of other universally applicable concepts: universal conceptual-semantic concepts, universal formal concepts, universal general concepts, and other comparative concepts." (Haspelmath 2010: 665)

25 The source constructions for the expression of future time reference in the different Arabic dialects (none of which is included in the sample of Bybee et al. 1994) appear to correlate nicely with the ones that have been investigated (see Taine-Cheikh 2004).

The following are the comparative concepts relevant to the present study:

> [**allative future**] An allative future is any future tense that is grammaticalized from an allative source construction, and in which the element that marks the future also synchronically marks at least some typical allative meanings, especially purpose or spatial destination.
>
> [**allative**] An allative is "some overt morpheme in a language, be it adposition, case affix, body part term, coverb, or other class of item which is associated semantically with the marking of spatial goals, directions, or destination.' (Rice & Kabata 2007: 452).
>
> [**future tense**] A future tense is a grammatical marker associated with the verb that has future time reference as one prominent meaning (Haspelmath 2010: 671). Future time reference is 'a prediction on the part of the speaker that the situation in the proposition, which refers to an event taking place after the moment of speech, will hold' (Bybee *et al.* 1994: 244).

Comparative concepts are to be distinguished from descriptive categories, "[a] language specific category set up by a linguist to account for observed speaker behavior" (Haspelmath 2010: 19). Descriptive categories should focus on "getting the facts right," viz., they should be as accurate and complete as possible, and do justice to the language studied in an optimal way. A language-specific descriptive category is written with capital letters, e.g., the Albanian Adjective or Amharic Converb.

The distinction between descriptive categories and comparative concepts is necessary because each language has its own categories and should be described in a non-aprioristic fashion. On the other hand, linguists would also like to identify comparable phenomena across languages and to formulate generalizations. This goal cannot be reached by assuming a substantial set of universally available *crosslinguistic categories* (e.g. Lazard 2005 & 2006; Haspelmath 2007 & 2010: 663) which would be used both for language internal descriptions and for typological comparisons, for there is probably no descriptive category whose characteristics are equivalent in two language, let alone many of them.[26] This statement is much in tune with observations made in the framework of construction grammar (see e.g. Croft 2000), which strongly rejects *categorial universalism*.

3.2 The types of allative futures

In this section, we present a brief typological pilot of what we call ALLATIVE FUTURES. As shown in fig. 1, a cross-linguistically well-attested type of source for future tenses is verbal constructions encoding telic motion (e.g. Hopper & Traugott 2003). Both venitive (Ex. 14-17) and andative (Ex. 18-21) verbs being well-attested:

Ex. 14 Bambara (Mande, Mali; Heine & Kuteva 2002: 75)

ù	*tɛ*	*nà*
3PL	NEG:AUX	come

'They don't come.'

à	*ná*	*sà*
3sg	FUT	die

"He will die (some day)."

Ex. 15 Koyo (Bantu, DRC; Marchese 1986: 75; Heine & Kuteva 2002 : 76)

Aɓi	*yì*	*du*
Abi	come\FACT	town

"Abi came home (to town)."

26 This stems from both the Boasian tenet that languages should be described in their own terms, rather than based on assumptions derived from other languages, on the one hand, and from the results of descriptive linguistics, which shows that unfamiliar linguistic categories can be discovered whenever languages are described.

Abi yi du mo
Abi FUT town go
"Abi will go to town."

Ex. 16 Romansh, Oberengadin (Dahl 2000a: 321)
a vẹñ a plɔ̃vɛr
it come\PRS to rain\INF
"There is rain on the way / it will rain."

Ex. 17 Swedish[27] (Dahl 2000a: 353 & Hilpert 2008a: 127)
Barnen kommer att vara mycket sömniga när pappa kommer
children come INFM be\INFvery sleepy when father come\PRS
"The children will be very sleepy when father arrives."

Datoriseringen kommer att påverka arbetsinnehållet
computerization comes INFM influence work_content
"Computerization will influence the content of our works."

Ex. 18 English
"It is going to be done by 5PM."

Ex. 19 Mauritian Creole (Véronique 2009 : 42)
mo va manzé
I FUT eat
"I will eat."

Ex. 20 Hausa, Katsinanci (Abdoulaye 2001 : 8)
zâa su sàyen gooƒò gúje
go 3pl buying-of kolanuts running
"They are running (somewhere) to buy kolanuts." (motion with purpose)

zâa ta taashìi wajen ƙarfèe shiddà
FUT 3SG.F waking_up around o'clock six
"She will wake up around 6 o'clock." (future auxiliary)

Ex. 21 Tzotzil
ba nox ech'-uk ak'ubal yo'-e (Haviland 1993)
go(AUX) only pass-SUBJ(3A) night there-CL
"Just go spend the night there." (motion)

ch-ba chonolaj-ik-on (Schmidtke-Bode 2009: 184)
ICP-go trade-SUBJ-B1SG
"I'll go to trade" (motion with purpose)

ch-ba tal-uk (Aissen 1994: 219)
ICP-go come-SUBJ(3SG)
"It's going to come" (future)

It has been argued by Bybee et al. (1994) that two important parts of the meaning of such future constructions are:

> [1] the *allative component*[28]: "simple movement does not evolve into future. To derive future, there must be an allative component, 'movement towards', either inherent in the semantics of the verb or explicit in the construction." (1994: 268)

27 "The original form of the construction in Scandinavian (preserved in Norwegian and Danish and attested in older Swedish)" (Dahl 2000a: 320) uses an allative preposition *til(l)* for introducing *att* + infinitive, see also Hilpert 2008a & 2008b: 116.

28 See also Bybee et al. (1991: 30): "[s]ince we find movement verbs as source for future, pasts and progressives, we hypothesize that the semantics of movement is not sufficient in itself to give rise to the future sense. Rather, movement constructions that are source for future grams actually signal that the subject is in the process of moving towards a goal."

> [2] the *imperfective or progressive component*: "[a]nother important part of the meaning is that the agent is already on the path and the movement is in progress; thus the overt or inherent aspect of the construction is progressive, present, or imperfective." (1994: 268)

Even if they acknowledge the fact that "[n]either allativity nor imperfectivity need be overtly marked (1991: 30), Bybee et al.'s generalization regarding the second component for movement-based futures has been proven to admit exceptions. Indeed, Coghill (2010) showed that in some Neo-Aramaic dialects, the form *zi(l)* of the verb *'zl* "to go" that occurs in a future construction "is identical in form and origin to a construction used to express the immediate future of the verb 'to go'. This construction moreover originally had a present perfect function" (Coghill 2010: 361). It is thus an exception to the hypothesis that futures derived from a verb of motion will be expressed by an imperfective or progressive form:

Ex. 22 Neo-Aramaic, Telkepe dialect (Coghill 2010: 364 & 367)
zi-lv *l-šūqv*
go.IMM-L.3SG.F to-market
"She is just going to the market / she is off to the market." (immediate future)

zi-lv *napl-v* (auxiliary verb)
FUT-L.3SG.F fall-S.3SG.F
"She is going to fall."

zi-napl-v (particle)
FUT-fall-S.3SG.F
"She is going to fall."

zi-lə *pāθəx*
FUT-L.3SG.M open:3SG.M
"It's going to open / It's about to open."

The same observation holds for Hausa (see Ex. 20) which can be considered as another exception to the generalization made by Bybee et al. (1994): Abdoulaye (2001: 3-7) showed that the future marker *zâa* derives from the verb form *zâa* "start to go, be going," which is a derived inchoative form of the lexeme *jee* "to go" restricted to the perfective aspect (albeit with an on-going action reading).[29]

Accordingly, the allative component, i.e. orientation towards a goal, appears to be the one that plays the central role in the development of such motion-verb constructions into futures. Based on this observation (see the *hypothèse allative* in Lansari 2009: 17-19), it is further possible to make the following prediction: if the centrality of the allative component in the grammaticalization of future tenses proves to be right, then we would expect to find future tenses that have been grammaticalized out of allative constructions with no explicit motion component, but rather with another type of allative marker.

3.2.1 Revising some constructions COPULA > FUTURE pathways

A look at some of the grammaticalization paths that have been mentioned in the literature turns up some allative futures that have been categorized as involving a COPULA > FUTURE pathway (e.g. Heine and Kuteva 2002: 97):

Ex. 23 Mongolian (Binnick 1976: 43)
ter *alxax* *(bajna)*
he to:walk (is)
"He will walk."

29 In this respect, see under §2.2.1 the remarks about the prospective construction found in Kolyma Yukaghir.

This categorization, while possible, is not especially illuminating, as Heine and Kuteva admit: "[t]he conceptual nature of the present process is far from clear. More data, especially from other languages, are required" (2002: 97). Bybee et al. (1994: 249-251; 260-263) also encounter some difficulties with copula and copula-like source constructions, especially when dealing with expected and predestination futures.

We think that the reason for this lack of clarity is the result of an over-emphasis on the development of lexical items (especially verbs, in the present context) into grammatical markers, rather than on the construction as a whole. It is not obvious why a copula should develop into a future marker, but it is relatively clear why a construction marking the predication of a goal or purpose could develop into a future tense construction.

While there is probably not yet enough evidence to make a strong claim like "copulas that can't be used as aspectual auxiliaries[30] do not grammaticalize into future tense markers unless there is an allative component elsewhere in the construction,' we think that this is a reasonable hypothesis.

Future-oriented constructions that are built on the pattern copula + allative adposition have of course been acknowledged in the typological literature (e.g. Bybee et al. 1994: 249-250), but the quoted examples are usually *expected* or *scheduled* futures rather than fully grammaticalized predictive futures[31]:

Ex. 24 English
(a) "Maria is to sing in *Aida* tomorrow night." (Bybee et al. 1994: 250)
(b) "One of the boys claimed out is one of our best scouts but he is to go just the same although he was very loathe to leave us."
(c) "The more this happens, the quicker he will learn that he is to go outside."

Such English constructions, particularly when no temporal adjunct is expressed, often have an obligation flavor, especially since the subject might clearly have no intention, control, or willingness. Other specific grams, like the derivational affixe *sussa* "is to", in West Greenlandic, are of course able to express similar meanings:

Ex. 25 West Greenlandic (Fortescue 1984: 292)
aqagu avalat-tussaa-vunga
tomorrow go_to_Denmark-is_to-1SG.INDIC
"Tomorrow, I am to go to Denmark"

The construction [copula + allative marker] is however cross-linguistically well-attested with this meaning. In Early Modern Welsh, for instance, a construction [existential verb + allative adposition] clearly has the meaning of a scheduled future:

Ex. 26 Early Modern Welsh (Ellis Pugh, c. 1700)
[when God sees meet to put a Word into the mouth of any one of them]
mae hwnnw i ddywedyd
exist this to speak\INF
"He is to speak [what the Lord has revealed and taught him]."

The semantics of the future-oriented constructions that involve both a copula and an allative marker is however far from being limited to the scheduled/expected future semantics. Indeed, different languages have grammaticalized a prospective construction comprising a copula and an allative-marked verbal form. In Kolyma Yukaghir, for example, the auxiliary *l'e* "to be",

30 In case this case, other pathways of grammaticalization common to aspectual futures are expected.
31 The English "is to + Infinitive" construction "refer[s] either to events which are expected to occur in the near future, or to those which have been pre-arranged" (Bybee et al. 1994: 249-251).

when combined with the purposive Supine form of the verb (Schmidtke-Bode 2009: 181), yields such a prospective meaning:

Ex. 27 Kolyma Yukaghir (Yukaghir, Uralic; Maslova 2003: 179)
Čarčaqan d'e tet-ul lek-tin l'e-je
C. PTCL you-ACC eat-SUP/PURP be-INTR.1SG
"Charchahan, I am going to eat you."

Interestingly, this construction "implies that some preliminary features of the foregoing event are already present. As a result, this form can be used to refer to a process in progress, whereby the first stage of the event has already started" (Maslova 2003: 178). Actually, based on the examples quoted in Maslova (2003), the progressive aspect might result from an inference based on the combination of a prospective construction and a telic verb in past contexts, as illustrated by the following example:

Ex. 28 Kolyma Yukaghir (Yukaghir, Uralic; Maslova 2003: 179)
numø-ge jaqa-din l'e-de-ge
house-LOC reach-SUP/PURP be-3SG-DS
"When he was about to reach the house → When he was approaching the house (he heard a song from within)."

In European Portuguese, a predicative adpositional-phrase introduced by *para* "for" can be used in order to express immediate futurity:

Ex. 29 European Portuguese (Hagège 2010: 100)
ele está para chegar
3SG.M is for arrive
"He is about to arrive"

Beyond the prospective constructions, other languages have grammaticalized a fully-fledged future out of a COPULA + ALLATIVE ADPOSITION source construction. In contemporary Mansa' Tigré, a Semitic language spoken in Eritrea, such a future construction based on an allative preposition *ʔəgəl* (also used for introducing adverbial clauses of purpose or result and as infinitive marker; see Raz 1983: 92) + Subjunctive finite verb form + Copula[32] seems to be gaining ground at the expense of the imperfect as the typical expression of futurity. Compare:

Ex. 30 Tigré (Semitic)[33]
ʔətta maḥāz ʔəgəl təḥassab wardat
to-the river ALL wash:3SG.F\SBJV she_went_down
"She went down to the river in order to wash."

fağər baṣʕə ʔəgəl-nigis-tu
tomorrow Massawa ALL-we:go\SBJV-it_is
"Tomorrow we will go to Massawa."

ʔəgəl-nətmahar-tu
ALL-we:learn\SBJV-it_is
"We are going to learn…"

3.2.2 Allative futures without verbs of motion or copulas

An additional type of allative future involves the direct predication of an allative construction, without a copula or copula-like expression.

32 Obviously, we would not extend this hypothesis to future tenses that do not develop through grammaticalization processes, such as those discussed in Haspelmath 1998.

33 For the expression of 'definite futures' based on PURPOSE + COPULA as an areal feature in Ethiopia, see Raz 1983: 68-69 and Hever (forthcoming).

First, it seems important to notice that, in many languages, there are verb-less constructions in which allative predicates are restricted to non-verbal expressions. In French (Ex. 31), for example, such constructions are usually interpreted as being optative or jussive:

Ex. 31 French
les *canots* *à* *la* *mer*!
the:PL dinghies to the:SG.F see
"The dinghies to the sea"

In fact, this construction coerces an allative reading, even when the prepositions involved do not typically encode dynamic meanings:

Ex. 32 French
les *assassins* *en* *prison!*
the:PL murderers in jail
"The murderers in jail"

This example show that, besides simple movement, richer inferences are available, since one would probably infer something like "(to be put) in jail". A similar construction is possible in colloquial Modern Hebrew (Ex. 33-35). Again, depending on the type of adverbial predicate, inferences richer than simple movement are available: in Ex. 35, "(to be given) in exchange for" what would be inferred.

Ex. 33 Modern Hebrew
aravim *l-a-yam* (common racist slogan)
arabs to-the-sea
"Arabs to the sea!"

Ex. 34 *kulam* *habayta*
everyone home.ALL
"Everyone (go) home!"

Ex. 35 Modern Hebrew (graffiti on the back of an bus seat)
arsim *tmurat* *ʃalom,* *frexot* *tmurat* *bitaxon*
arsim in_exchange_for peace *frexot* in_exchange_for security
"*Arsim* in exchange for peace, *frexot* in exchange for security!"
(*arsim* and *frexot* are common socio-ethnic pejoratives)

Unlike French, Modern Hebrew allows verbal lexemes to be used after the allative preposition:

Ex. 36 Modern Hebrew
kulam liʃon
everyone to.sleep
"Everyone to sleep!"

In colloquial Russian also, movement is a prominent inference with such construction, but again, is not the only one available:

Ex. 37 Russian (Pavel Ozerov, p.c.)
(Security guard to visitor at university)
ty *kuda?*
2SG.NOM where_to
"Where are you going"

ja *v* *universitet*
1SG.NOM to university:ACC.SG
"I (am going) to the university"

Ex. 38 Context: I bought a defective closet.
ja *v* *magazin*

1SG.NOM to shop:ACC.SG
"I (go/call/write/etc.) to the shop"

(They tell me it's an experimental model, speak to the manufacturer.)

ja *k* *prozvoditel-u*
1SG.NOM to manufacturer-DAT.SG
"I (go/call/write/etc.) to the manufacturer."

Interestingly, in colloquial Russian, future time reference — as in the following example — is not the only possible reading.

Ex. 39 Russian (Hagège 2010: 247)
ja *k* *vam*
1SG.NOM to 2PL.DAT
"I will come to your place"

As illustrated by the following examples — taken from a folk-tale[34] — the construction is able to encode an oriented movement in the past, present and future:

Ex. 40 A man came to the devil to borrow money until the next day. The devil says:
beri *da* *pomni*
take\IMP and remember\IMP
"Take and remember:

nynche *ty* *ko* *mne*,
nowadays 2SG.NOM to 1SG.DAT
today you (come) to me,

zavtra *ja* *k* *tebe*
tomorrow 1SG.NOM to 2SG.DAT
tomorrow I (am going to come) to you"

(On the next morning the devil comes to the man, saying: "Hey, brother")

vchera *ty* *ko* *mne*
yesterday 2SG.NOM to 1SG.DAT
"Yesterday you (came) to me,

nynche ja k tebe
nowadays 1SG.NOM to 2SG.DAT
now I (come) to you"

In some languages, verb-less constructions [subject – ALLATIVE verbal predicate] — much akin to the ones mentioned in §2.2.1, but with no copula overtly expressed — grammaticalized into future tenses. In the material that we were able to collect for this pilot study, verb-less allative constructions display various degrees of grammaticalization or entrenchment in the TAM system.

Some such constructions have not been fully grammaticalized into future tenses. In Biblical Hebrew, for example, one finds rare examples in which infinitives, historically allative preposition + verbal noun, marks a prophetic future:

Ex. 41 Biblical Hebrew (Isaiah 38:20)
YHVH ləhoʃiʕeni
God to-save-me
"The Lord will save me."

However, there is but a small handful of examples, and this construction never developed into a full-fledged future tense within Biblical Hebrew.

34 T. Gabbe (ed.), "Story about Volokita" [http://www.chukfamily.ru/Humanitaria/Gabbe/Volokita.htm].

In other languages, constructions encoding the predication of an allative expression became grammaticalized into full-fledged future tenses. In Mauritian Creole, a non-verbal goal marking construction *pou* + verb (cf. French *pour*) developed as a future tense (apparently in similar context as *pe*, French *après*) and nowadays tends to compete in a broadening range of contexts with the older future construction *a*/*va* (etymologically "to go", see Ex. 19):

Ex. 42 Mauritian Creole[35] (Véronique 2009: 42-43)
dan trwa mwa nou pou/pe al Zetazini
in three months we to/after the United_States
"In three months, we will go to the States"

li pou/pe vini tanto
he to/after come afternoon
"He is going to come this afternoon"

In Minangkabau, a language of West Sumatra (Indonesia), *ka* — a general allative marker also used to encode spatial goals (Ex. 43a-b) or purpose clauses (Ex. 43c) — is a future gram in a verb-less allative construction (Ex. 43d):

Ex. 43 Minangkabau (see Crouch 2009[36])
bisuak datanglah ka rumah den [a]
tomorrow come:IMP to house 1SG
"Tomorrow, come to my house"

masuak ka dalam ladang [b]
enter to inside dry.field
"(He) entered the field"

aden ka jadi marapulai [c]
1SG to become bridegroom
"I'm going to be a bridegroom."

awak ka diberangan dek amak [d]
1SG to PV-angry-APP CAUSE mum
"I'm going to be scolded by mum."

Interestingly, besides future time reference, the construction with the allative preposition *ka* in Minangkabau can be used as a prospective auxiliary (Comrie 1976: 106) in past contexts. The following example illustrates this possibility:

Ex. 44 *pak tani ko ka maambiak Kancia ko ka didabiah*
father farm DEM:PROX to AV-take mousedeer DEM:PROX to PV-slaughter
"The farmer was going to take Mousedeer to be slaughtered."

The same remarks holds for the Ancient Egyptian allative future construction (see §4 for a detailed discussion). Before it was fully grammaticalized as a future tense, the allative preposition *r* + infinitive is attested a predicate of a non-verbal construction in past contexts:

Ex. 45 Uronarti, Quay inscription (Dunham 1967: 34 & pl. 25.b)
iw=tw r gm.t mw r sʒwt ỉšmk
AUX=one to find\INF water to sail_along\INF Ishmuk

35 A construction like *je suis pour avoir* "I am going to have (lit. I am to have)" used to be productive in French (see Gougenheim 1971: 99-100 for mentions in grammars of the 17th century). It is also worth noticing that, in creoles and in regional forms of Romance languages, spatial adpositions are well-documented as lexical sources for aspectual/temporal grams. On this point see Hagège (2010: 99-100) for *après* "after" as a gram expressing the progressive aspect or the immediate future in Haitian Creole.

36 These examples are from folktales collected by fieldworkers of the Max Planck Institute Field Station in Padang. It is also found in an appendix to Crouch's 2009 MA thesis (see bibliography).

"One was to find (navigable) water to sail along Ishmuk"

The allative preposition long remained the gram associated with the expression of futurity, as shown by examples such as:

Ex. 46 P. UC 32213, r° 13 (Collier & Quirke 2002: 142-143)
ỉr *wnn=f* *r* *rdi.t* *st* *k*[*ȝ* LAC.]
if be\SBJV[37]=he ALL give\INF it/them then
"If he will give it/them, then [LAC.]"

During the grammaticalization process, the initial auxiliary *ỉw* — originally a main clause assertive auxiliary — came to share the expression of the futurity with the allative marker *r*, before taking it over when the construction became a full-fledged future tense. As a consequence, the allative preposition became optional, at least at the graphemic level:

Ex. 47 P. Chester Beatty 1, ro 2,6 (Gardiner 1932: 39)
ỉr *pȝ* *nty* *ỉw=s* (*r*) *ḏd=f,* *ỉw=n* (*r*) *ỉr*(*.t*)*=f*
TOP ART:M.SG REL FUT=3SG.F (FUT) say\INF=3SG.M FUT=1PL (FUT) do\INF=3SG.M
"Regarding what she will say, we will do it"

The future constructions in Mauritian Creole, Minangkabau and Ancient Egyptian empirically disprove the argument recently put forward by Schmidtke-Bode (2009) in his typology of purpose clauses. Indeed, regarding the future construction in Kolyma Yukaghir (see Ex. 27), he states:

> "It should be emphasized again that such changes do not imply that purpose clauses or markers develop into future time markers; rather, purpose clauses only provide the constructional environment which, if combined with a suitable main verb sense such as motion or activity in progress, can invite a semantic and structural reanalysis of the complex sentence." Schmidtke-Bode (2009: 181)

If our understanding of the future constructions presented in this section proves to be correct, the presence of an allative component in the construction is by itself sufficient for a construction to be able to grammaticalize into a future tense, which justifies the comparative concept of *allative future*.

3.2.3 The formal features of allative future construtions

As proposed above, the justification for including the quite disparate constructions of Swedish (SW), Romansh (RO), Mauritian Creole (M), French (F), English (EN), Neo-Aramaic (NA), Tzotzil (TZO), Tigré (TI), Kolyma Yukaghir (KO), Mongolian (MO), Minangkabau (MIN) and Ancient Egyptian (AE) under the same roof, so to speak, is that they all match the definition of allative futures as a comparative concept.

This is not to say that they are structurally identical. On the contrary, one can point out a few typologically significant differences between them, in terms of language-specific descriptive categories.

37 The verb *wnn* "to be" is used as a converter allowing non-verbal predications to occur in this syntactic position. It does not in itself mark the construction as future..

		TYPE OF AUXILIARY OF THE ALLATIVE CONSTRUCTION										
		venitive		*Andative*				*copula*			Ø	
		SW	RO	M/F	EN	NA	TZO	TI	KO	MO	MIN	EG
Tense/aspect of the AUX	IMP[38]	√	√	√	√	–	√	√	√	(√)		
	other	–	–	–	–	√	–	–	–	–		
Explicit allative marker[39]	yes	(√)	√	–	√	–	√	√	√	√	√	√
	No	√	–	√	–	√	–	–	–	–	–	–
Verb lexeme: person marked	yes	–	–	–	–	√	√	√	–	–	–	–
	No	√	√	√	√	–	–	–	√	?	√	√

Figure 2. Formal features of the allative source constructions for future tenses

The first significant structural difference is that the allative constructions can be built [1] with or [2] without a verb of directed motion. In the first case, the allative semantic feature of the movement verb appears to play a crucial role, which explains that:

> [a] both venitive and andative verbs are well documented as predicates in the source constructions that grammaticalized into the expression future time reference. While this is not a novel observation, it is important to note that the two types of oriented motion with respect to the position of the deictic center[40] are possible and that, consequently, the orientation towards a (spatial or conceptual) goal is a central semantic feature in order for a construction to be able to evolve in the direction of a future construction.
> [b] Even if the overt or inherent aspect of the allative verbal auxiliary is generally progressive or imperfective (or a present form), this *need not* be etymologically the case, as shown by the inflexions of the verbal auxiliaries in Hausa (Abdoulaye 2001) and Neo-Aramaic (Coghill 2010).
> [c] If the allative semantic component is already present in the construction AUXILIARY + VERBAL LEXEME, an additional allative marker *need not* be overtly expressed with the verbal lexeme,[41] as in Neo-Aramaic, for instance.[42] Note that the source construction may lose this overt allative marker in the grammaticalization process, as was the case in Swedish with the preposition *til(l)* (see n. 27 & Hilpert 2008a: 126-127).
> [d] Finally the verbal lexeme that depends on the allative verbal auxiliary can be marked for person or not.

When no verb of motion is an element of the allative constructions, the verbal lexeme — the semantic predicate of the construction — *has to* be marked by an overt allative gram (the orientation towards a goal is mandatory to match the comparative concept of allative future). This overt marking can be in the form of a subjunctive or subjunctive-like finite form, as long as it can be used as a purpose clause. Besides this necessary condition, the construction:

[a] can have a copula overtly expressed or not;
[b] can have a verbal predicate that is marked for person or not.

38 The label IMPerfective stands as a cover-term for any tense and/or aspect described as present, imperfective, or progressive.

39 This issue is somewhat complicated by the fact that the loss of compositionality of the construction in some case led to the reanalysis of the etymological allative marker as part of the auxiliary (most famously in English). However, the comparative concept proposed here refers to source constructions, which in the cases we discuss are known.

40 See e.g. Givón (1973: 918) who notes "that 'come' presupposes motion toward the speaker, while 'go' presupposes motion away from the speaker".

41 For some venitive futures without overt allative marker in African languages, see the examples quoted by Welmer 1973: 352-.355

42 Givón (1973: 910): "[o]ne should also note that, in some languages, *come* and *go* do not appear as lexical items without incorporating the presuppositions and implications of either *to* or *from*."

These observations appear to bear witness to the centrality of the *allative component* in the grammaticalization of future tenses out of goal-oriented constructions. This was already suggested long ago by Givón (1973: 919) when discussing the possible grammaticalization of "come"-like verbs both into future grams and (recent-)past grams, when combined respectively with an allative adposition and an ablative one: "one may have to consider the particular prepositional complementation which participated in the process of change from verb to sentential modality."[43]

Now, whether they all the future source construction with an allative component follow a similar pathway of grammaticalization remains because of this common allative component remains however to be investigated. This is the object of the next section.

3.3 The grammaticalization pathways for allative futures

Given the structural and semantic differences between the source constructions for allative future tenses, as well as the distinct grammatical systems of opposition in which they emerge (especially given the existence of older grammaticalized construction(s) for the expression of future time reference), the hypothesis put forward by Bybee et al. (1994: 254) that allative futures, as all the future grams, go through a stage of "functioning to express the intention, first of the speaker, and later of the agent of the main verb" before being able to convey a purely predictive meaning[44] is a priori challenging.

Somewhat unsurprisingly, this hypothesis has been shown not to be in accordance with the available empirical evidence. Indeed, venitive future constructions — that are of particular interest for the present study — appear to falsify the claim that all futures (or at least movement-based futures), acquire temporal meaning after becoming markers of intention. As Dahl (2000a: 221) already argued: "[t]hese de-venitive constructions are somewhat peculiar among future referring grams in that they are primarily used for prediction-based rather than intension-based F(uture) T(ime) R(eference) […] At any rate, there is no evidence that the Germanic de-venitives ever expressed intention". Based on a constructional approach to the grammaticalization of the Swedish future construction *komma att* "come to" Hilpert (2008a & 2008b) established that "animate intentional subject referents have only recently become more frequent in Swedish, strengthening Dahl's hypothesis." Elaborating on Ebneter's (1973: 241) study of the Romansh future construction "*vegnir a* Verb" (which also has inchoative uses) and Traugott (1978: 376-379), he further hypothesizes that "this movement-based future construction acquired temporal meaning via a stage in which it was an ingressive [elsewhere "inchoative"] aspectual marker" (Hilpert 2008a: 183) and suggests the following path of development for de-venitive future markers:

MOTION > INCHOATIVE > PREDICTION

Hilpert's (2008a & 2008b) argument about the weakness of the hypothesis of Bybee et al. (1994) regarding the necessity of intentional meaning seems to be a strong one, since the Swedish source construction *komma til(l) att* + Verb does not show intentional semantics at

43 Bybee et al. (1991: 30) restated this observation when arguing that they "would not expect a motion verb with ablative component or perfective marking to develop a future reading". A strong formulation is to be found in Kuteva (2001: 22) "[i]t is always the *goal*-oriented movement verb structure that turns into auxiliary structure. Thus, whereas *go to + Noun Phrase → come (to)-future* are attested as auxiliation paths, no lexical structure *go from + Noun Phrase* or *come from + Noun Phrase* has developed into a future construction."

44 The process labeled *temporalization* by Fleischman 1983.

any stage of its grammaticalization. Nonetheless, the pathway that he suggests, especially the transition from INCHOATIVE to PREDICTION, is problematic. Inchoativity (or ingressivity) belongs to the sphere of perfectivity (Comrie 1976: 19) both from a semantic and formal point of view (Winand 2006: 17 n. 15; 176; 184). As such, based on the quoted examples (especially in Hilpert 2008b), it remains unclear why such a perfective-like gram would develop future time reference.

Historical data concerning the evolution of the French construction *aller* "to go" + infinitive are likely to shed some light on this issue. Indeed, besides its well-known development as a future periphrastic construction (e.g. Lansari 2009), the construction has been used in Old French (and down to the 17th century; see Gougenheim 1971: 93-97) first as an inchoative and then a perfective construction. As Detges (2004) nicely showed, this meaning of the construction originates in a rhetorical use of the periphrastic construction in narratives. The following example, from the *Song of Roland* is a good illustration thereof:

Ex. 48 Old French (Gougenheim 1971: 93; Detges 2004: 215-216)

si	*se*	*vunt*	*ferir,*	*granz*	*colps*	*s'entredunerent*
and	3PL:REFL	go:PRES:3PL	fight:INF	big	blows	give_each_other:PST

"(In the middle of the field, the two of them met), and they engage the fight, they gave each other hard blows"

Literally, the text reads "and they go to fight each other", i.e. they reach the point where they fight, they join the battle with each other (with an actual movement implied at this stage). Gougenheim (1971: 96) defines this construction as a *praesens historicum* with foregrounding effects: "[c]ette construction a un sens de passé narratif, bien que d'ordinaire le verbe *aller* y soit employé au présent de l'indicatif". This use of the construction *aller* + infinitive in past contexts probably reflects an oral technique of story-telling as a rhetorical device used "to represent especially dramatic points of narrative sequences", the "turning-point event" (Detges 2004: 216).

Interestingly, the earliest examples of the construction involve intentional subjects that exercise control over the predicate. The textual function of the construction is to signal the sudden[45] *intentional* entering (ABRUPT START, French "il se mit à + infinitive") of a state, activity or event. The INCHOATIVE meaning developed when the relaxation of selectional restrictions allowed unintentional (CONTROL-less) subjects to enter the construction, first with actual physical movement in space, and then without, [46], the movement being aspectually mapped onto pre-phase of the event. Now, inchoative or ingressive meanings [47] are characteristic of the perfective aspect when combined with atelic events (activities) or states — the salient part of these events/states is their beginning (see Winand 2006: 212-213).

45 See Pichon (1933: 106) & Detges (2004: 213). The fact that the event happens "suddenly" may be related to the use of a present in narratives, but has also to be linked to the inchoative inference that is available for sentences like "he suddenly built his house" understood as "he suddenly began to build his house (see Winand 2006: 55). It is worth noticing here that *ta* in Japanese can perform two seemingly opposite functions: "apart from the general past meaning, it can also be used for emphatic (or mirative" present" referring to the sudden occurrence of an event (Malchukov 2010: 192-193). Crucially for the present argument, both meanings can be tracked back to the use of *ta* as a RESULTATIVE gram (Malchukov 2010).

46 For a description of such bridging contexts for the so-called Raising-*come* construction in English (like e.g. in *a new script came to be used*), see Bourdin (2009: 352-354).

47 For a list of different kinds of lexical verbs that imply some movement of the subject and developed an inchoative meaning, see Detges (2004: 214).

Therefore, one can hypothesize that, when this foregrounding strategy[48] became to be used with telic processes, the inchoative feature faded out of the semantics of the construction and only the perfective feature remained salient[49]. This is nicely illustrated by the following example in which the lexical verb of the construction is the usual inchoative auxiliary (*commencer à* "to begin to"):

Ex. 49 French (16th century; Gougenheim 1971: 96)

il	*va*	*commencer*	*à*	*prier*	*Dieu*
he	go:PRS:3SG	begin:INF	to	pray	God

"(and when he had arrived there), he began to pray God"

This construction, which was originally a narrative technique, had a high degree of productivity in Provençal (it was also used in Old Gascon as a perfect: *ba anar, ba beni* "he went, he came") and Catalan where it survived down to present days and is known as the *perfet perifràstic*. In Catalan it is the default past tense that marks perfective events with no special relation to the moment of speech (Detges 2004: 212).

Ex. 50 Catalan (Detges 2004: 212)

el	*seu*	*discurs*	*va*	*causar*	*un*	*gran*	*impact*	*en*	*l'auditori*
the	his	talk	go:PRS:3SG	produce:inf	a	great	effect	on	the_audience

"His talk produced a great effect on the audience."

In addition to its so-called "inchoative" uses in narratives, the French periphrastic construction *aller* + infinitive developed a prospective meaning (especially in *l'instance du discours* of vernacular texts and theater dialogues) from the 15th century onwards (before the 15th century, it always encodes motion-cum-purpose, see Gougenheim 1971: 97-98). It is worth noticing that the vast majority of early examples involve first person singular pronouns that directly index the speaker's intention. The first mention of this construction in a grammar dates back to the early 17th century (Gougenheim 1971: 99-100) where it occurs together with other expressions for future time reference that can render the shades of meaning of the Latin future participle: *que ie doy avoir* lit. "that I must have", *que ie suis pour avoir* lit. "that I am to have", *que ie vay avoir* lit. "that I am going to have"

Now, what do the two grammaticalization pathways of the French allative construction *aller* + INFINITIVE tell us regarding the grammaticalization of allative source constructions:

[1] First, that a single allative source construction (andative movement verb [present tense] + infinitive) can be grammaticalized into *two* (and possibly more) distinct grams: INCHOATIVE > PERFECTIVE on the one hand,[50] and PROSPECTIVE > FUTURE TENSE on the other hand.
[2] Second, that the grammaticalization of these two grams are *not simultaneous*, in the sense that they do not occur synchronically in the historical textual data.
[3] Three, that the meaning of a source construction, when considered in isolation, does not account for all the grammaticalization pathways that are possible for a given construction. Crucially, it is only by taking into account the distinct *types of inferences* that are available in *context* that one can get a better understanding of the evolution of a source construction: the meaning of a source construction has to be envisioned systematically *in combination* with the

48 Detges (2004: 215) claims that "[a]ll other things being equal, incipient events are perceived as more dynamic and more spectacular than aspectually unspecified ones."

49 Interestingly, in Ancient Egyptian, a construction *wn-in/ʿḥʿ.n ḫr* + infinitive (that combines a perfective auxiliary, *wn-in/ʿḥʿ.n*, with a progressive verbal phrase, *ḫr* + infinitive) appears to have been first an inchoative construction used in narratives (see Polotsky 1976: 33 & Vernus 1987: 100-102) before quickly developing into a perfective construction indicating the beginning of a new episode (see Winand 2006: 215-217).

50 The pathway INGRESSIVE/RESULTATIVE > PERFECT > PAST is common, see e.g. Bybee et al. (1994: 105), Malchukov (2010: 192-193).

specific inferences that can be made in context, for the types of inferences are heavily dependent on the discursive environment.

[4] Correlatively, generalizations of the kind usually made in cognitive framework by using metaphors like SPACE IS TIME or MOVEMENT TOWARDS IS FUTURE are not adequate for describing complex processes of grammaticalization (see Bourdin 2000). As Detges (2004: 212) puts it: "[t]he forces which trigger grammaticalization processes are not primarily cognitive in nature, but discourse-pragmatic. In other words, it is not the source concepts as such which drive processes of this kind, but the fact the concepts in question are useful for certain very basic discourse pragmatic strategies." (On this point, see already the strong objections in Bybee et al. 1994).

Keeping the evolution of the French allative construction *aller* + INFINITIVE in mind, let's now turn back to the grammaticalization pathway suggested by Hilpert (2008a and 2008b) for the *komma til(l) att* + Verb construction in Swedish, namely MOTION > INCHOATIVE > PREDICTION.

First, what can be said about the semantics of venitive constructions of the kind found in Swedish? Studying the semantics of the Raising-*come* construction in English,[51] Bourdin (2009) showed that there are at least three distinct readings that are available in context: ingressivity (a), resultativity (b) and futurity[52] (c):

Ex. 51 English (Bourdin 2009: 355; 359)

(a) *How did this greatest and most awe-inspiring of the great cats come to make the East its special domain?* (BNC CK2 12)

(b) *Towns, therefore, were coming to assume greater importance as places of defense* (BNC EDF 1298)

(c) *This will be of great help to both of us when we come to continue his therapeutic treatment* (BNC C9W 289) / (…) *and when we come to deal with nexus-objects, we shall see a corresponding division.* (Jespersen 1949a: 355)

These three readings have in common the fact of being *subsequential* to another event or point in time (see Bourdin 2008 & 2009): an ingressive reading signals the beginning of a new state of affairs (subsequent to a previous one); a resultative reading occurs in contexts where a causal connection between two states of affairs is meant; a future reading is possible when the event denoted by the infinitive clause is temporally subsequent to a point of reference. The ingressive and resultative meanings are complementary when a *subsequential* state of affair is envisioned as the past or present *culmination* (Rowlands 1969: 66; Bourdin 2009: 361-362) of a preparatory process: culmination can be defined as the entering of a new state of affairs (INGRESSIVE) that is the consequence of a preparatory process (RESULTATIVE). Moreover, this *subsequential* feature would account for the fact that, in many languages (notably in African languages), allative constructions are documented as source constructions for textual connectivity (Bourdin 2008) with sequential, consecutive (*then*) or counterconsecutive (*suddenly*) functions, all of which are functions attested on the grammaticalization pathway of the French *aller* + infinitive in narratives.

51 As opposed to the so-called Control-*come* constructions (like *Mary came to see Sam*; "control" obviously refers here to the control exerted over movement verb come) that involves an intentional subject "whose purpose is to bring about the state of affairs described by the infinitival clause." (Bourdin 2009: 351).

52 On this aspect of *come to* constructions, see already Jespersen 1949b: 355 ("the expression of futurity may be strengthened by the insertion of a verb of movement": *I wish that you may come to be ashamed of what you have done today*); 359 ("after-past time": *the influence for all good, which she came to exercise over me at a later time*); 371 (to fulfill the "want of a future of the ing": *what hope there is of their* coming not to tolerate it").

As for Swedish, the oldest examples quoted by Hilpert (2008b: 116-117) for the inchoative meaning of the *komma til(l) att* + Verb construction fit into the picture drawn for the Raising-*go* construction in English. Indeed, they occur in resultative clauses (Ex. 52), the function of which is to signal the beginning of a new state of affair that is the consequence of a previous process. The related periphrastic causative construction *komma* Object *till att* Verb also implies the beginning of a new state of affairs (Ex. 53):

Ex. 52 Swedish (Hilpert 2008b : 116)

kom	*iak*	*swa*	*som*	*pelagrimber*	*til*	*at*	*äruodha*
came	I	so	as	pilgrim	to	INF	work

"(Obeying the wish to be freed from sin), I came to work as a pilgrim."

Ex. 53 Swedish (Hilpert 2008b : 117)

walmogho	*frö*	*komber*	*människio*	*til*	*ath*	*sowa*
walmoga	seed	comes	human_being	to	INF	sleep

"Walmoga seed makes you sleep."

The future construction appears only later in the Swedish historical data:

Ex. 54 Swedish (Hilpert 2008b : 121)

saken	*kommer*	*att*	*avvecklas*	*mycket*	*hastigt*
thing.the	comes	INF	handle:PASS	very	speedly

"The issue will be dealt with very fast."

But does this mean that the ingressive/resultative construction is a preliminary step in the grammaticalization of the *komma til(l) att* + Verb construction into a future tense? We venture to hypothesize here that one might not have to deal with a single grammaticalization pathway. On the contrary, much like in French (even if in very different textual environments), the same allative source construction could have grammaticalized along two different pathways: [1] VENITIVE > INCHOATIVE/RESULTATIVE and [2] VENITIVE > FUTURE time reference. This scenario is obviously conjectural, but the polyfunctionality of the Raising-*come* construction in English (see above) and the two pathways followed by the French allative periphrastic construction makes it plausible. Moreover, this claims is strengthened by the following arguments:

[1] The link between ALLATIVE and INCHOATIVE/RESULTATIVE constructions is well-established by cross-linguistic data (Bourdin 2008; Hilpert 2008a & 2008b). This claim can be further substantiated by the following facts:

(a) allative affixes are documented as a derivational strategy for building verbs with inchoative meaning (e.g. Latin *amare* "to love" vs *adamare* "to fall in love, begin to love");[53]

(b) it is consonant with the polysemy of adpositional systems in general and with the case of polysemy between *allative* and *illative* markers in particular (Hagège 2010: 278 & 285-287);

(b) goal-oriented (i.e. allative) purpose clauses very often also are used as result clauses, in which "the realization of the subordinate situation is actually entailed" and not just implicated (Schmidtke-Bode 2009: 152).

[2] Direct diachronic links between INCHOATIVE/RESULTATIVE and FUTURE constructions are problematic, since inchoativity is typically associated with perfective aspect, while futurity is associated with prospective (goal-oriented) aspect.[54] However, we do not want to go deeper

53 Winand (2006: 47): "[l]e préfixe allative *ad-* est propre à souligner l'inchoativité : p. ex. *adamare* « se mettre à aimer » face au simple *amare* « aimer »".

54 The case of SEQUENTIAL markers is different for the pathway THEN > FUTURE is well-established, see Heine & Kuteva (2002: 294).

into this complex question.[55] Rather, the point that we would like to make is that the evidence cited so far is inconclusive for the pathways we are discussing. Neither the fact that the Romansh future construction *vegnir a* Verb "come to Verb" also has the separate function of an inchoative marker (Ebneter 1973: 242; similar to the French *en venir à* + infinitive), nor the fact that the inchoative functions is still attested nowadays constitute evidence that we are dealing with a single pathway of grammaticalization. Both phenomena can be the result of distinct grammaticalization processes out of a single source construction. Moreover, in other languages of the world, the INCHOATIVE/RESULTATIVE/SEQUENTIAL functions of an allative construction appear in the extent documentation *later* than the FUTURE function, which led some scholars (see already Bourdin 2008: 49-50 for a criticism of this *futurity scenario*) to postulate the reverse grammaticalization pathway: FUTURE > SEQUENTIAL.

[3] The link between VENITIVE and FUTURE constructions is cross-linguistically well-established (Bourdin 2000 & 2008). In these cases, no INCHOATIVE/RESULTATIVE/SEQUENTIAL intermediate step is to be found in the literature.

To sums up, we suggest revising the pathways of grammaticalization for the verbal allative source constructions that have been broached above[56] as follows:

[1] ALLATIVE VERBAL CONSTRUCTION > INCHOATIVE (e.g. Old French, Romansh, Swedish) > PERFECT (e.g. Catalan)
[2] VENITIVE > IMMINENT/SCHEDULED/PREDESTINED FUTURE > FUTURE
[3] ANDATIVE > INTENTION > FUTURE

Therefore, as far as the grammaticalization of future constructions in concerned, we postulate two different pathways (2 & 3) for the venitive and andative source constructions. [57] The two types of future constructions that result from these pathways differ essentially in their semantics, at least during the first stages of grammaticalization:

[1] With venitive future constructions, the speaker describes the fact that, by various causes and circumstances (that are external to his intention or will), a subject is coming close (imminence) to an event that he cannot escape. Accordingly, the semantics of venitive constructions is described as not involving intentional subjects (in Arabic, see the construction with *ǧāʔ/ge(h)/žā* "coming", Taine-Cheikh 2004: 219; 2009). Dahl (2000a: 322) phrased it as follows: "[w]hat is notable is thus that it expresses something that is not under the control of the subject, in other words, a non-volitional process." Hence we observe an affinity (in the first stages of grammaticalization) with non-intentional subjects that tend not to exercise control on the predicate.

[2] With andative constructions, we see no real objections to Bybee's et al. (1994: 254) intentional hypothesis: the construction goes "through a stage of functioning to express the intention, first of the speaker, and later of the agent of the main verb". The attribution of intentions to second and third person subjects leads to the meaning of prediction and goes with a correlative decrease of the control exercised by the agent on the (future) realization of the event.

Whatever might be the differences between the pathways followed respectively by venitive and andative constructions during their grammaticalization processes, the actual pragmatic

55 Indeed, the infrequent pathway PERFECTIVE > FUTURE has been acknowledged several times in the literature (Bybee et al. 1994: 278) and Comrie (1976: 66-67) quotes rather clear examples for the development PERFECTIVE NON-PAST > (PERFECTIVE) FUTURE.

56 Other pathways of grammaticalization are obviously attested for allative source constructions, but they fall outside of the scope of the present study.

57 "The fact that motion verbs are a cross-linguistically common source of future tense markers does not entail that these future constructions will convey identical meanings in their respective languages. Neither does it imply that all of these forms developed in a parallel, highly similar fashion. The grammaticalization paths of constructions exhibit idiosyncrasies that lead to different functions in modern usage." (Hilpert 2008: 123)

mechanism that leads to their being used as future constructions is strikingly similar and has much to do with *subjectification*: in both cases we observe a shift from subject-oriented inferences to speaker-oriented inferences.

In the generative tradition, the verbal allative future constructions are known as cases of raising constructions, specifically, as subject-to-subject raising constructions. Such constructions have been acknowledged as "subjective" expressions (see e.g. Langacker 1990: 23), since "the 'speaking subject' differs from the syntactic subject" (Traugott 2010: 33):

Ex. 55 Swedish (Hilpert 2008b: 115 & 109)

(a) *wi ærom hær kompne at køpa os fødho*
we are hither come to buy us food
"We have come here to buy food."

(b) *Blomberg kommer att inviga museet*
Blomberg comes to inaugurate museum_the
"Blomberg will inaugurate the museum."

Ex. 56 English (Traugott 2010: 33)

(a) I am going to visit the prisoner. [context = motion-*cum*-purpose]

(b) I am afraid there is going to be such a calm among us

In both examples, the allative constructions in (a) refer to an actual movement with the purpose of carrying out an action; volitional subjects have intentions and exercise control on the predicate. In the (b) cases, the speaker predicts that something is going to happen and the syntactic subjects of the constructions do not exercise any kind of control; their intentions are simply not an issue.[58] This is best explained as resulting from the retraction of subject-oriented inferences in favor of speaker-oriented ones, leading to the semanticization of the speaker-orientation characteristic of subjectification (Traugott 1989: 31).

As we have seen above, this does not mean that the grammaticalization pathways are identical, for they are highly dependent on the semantics of the source constructions and on the discourse environments in which grammaticalization takes place, but the basic pragmatic mechanism argued for, i.e. a shift from subject-oriented to speaker-oriented inferences, appears to be a valid generalization for the constructions under investigation.

Now, if the comparative concept of allative future holds (see §3.1), we would expect the allative constructions *without* verbs of motion to follow grammaticalization pathways that are congruent with the ones described for allative constructions *with* movement verbs. Consequently, one would be able to expand existing schemas for the grammaticalization of motion verbs with purpose clauses into future tenses, like the one suggested by Schmidtke-Bode (2009: 184).

Based on the data at our disposal,[59] we think that the two grammaticalization pathways that have been identified for the venitive and andative constructions can shed light on the grammaticalization of verb-less allative futures in a variety of languages. The different possibilities are illustrated in the following figure:

58 In the present framework, it is worth noticing that the lack of control of the subject is a semantic feature shared by the INCHOATIVE/RESULTATIVE and FUTURE pathways of grammaticalization for *come to* constructions. See Bourdin (2009) who suggest analyzing the opposition between 'Control-*come*' (*Mary came to see Sam*) and 'Raising-*come*' (*Mary came to like Sam*) as a "great modal shift" referring to "the fading of volitionality that Raising-*come* entails, in contrast to Control-*come*."

59 They are admittedly limited, given that for most of the language with verbless allative future constructions, either we had no access to large corpora or the needed diachronic data are lacking. Ancient Egyptian is of course an exception in this respect.

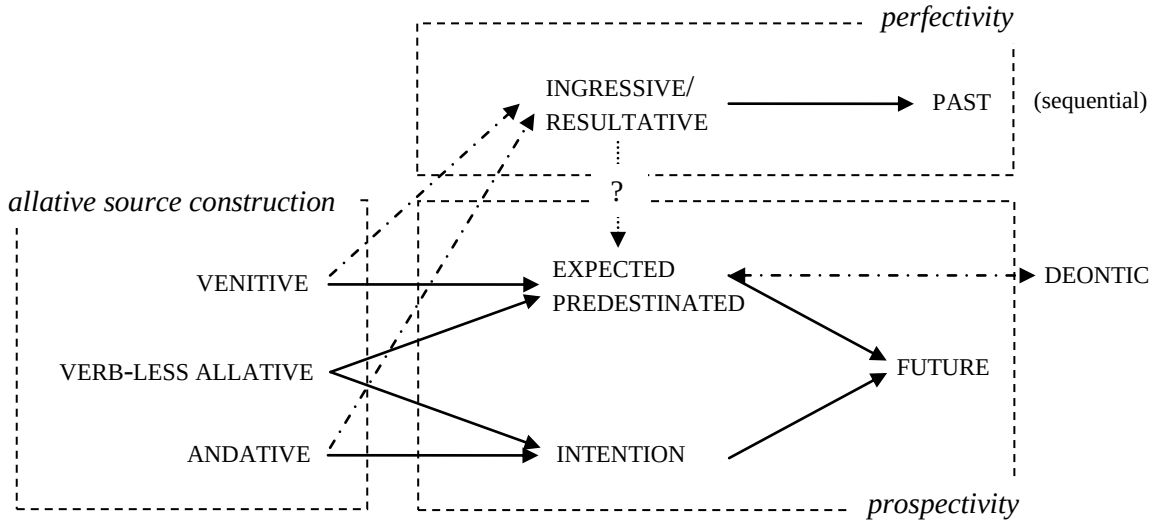

Figure 3. Grammaticalization pathways of allative source constructions into prospective and perfective grams

The first possible pathway for verb-less allative constructions is VERB-LESS ALLATIVE > EXPECTED > FUTURE. This pathway, which involves a subject that does not exercise control on the predicate, is attested in several languages as exemplified in §3.2.1. Usually, these allative constructions are also characterized in the grammatical descriptions as being able to encode deontic values,[60] which clearly points to a lack of control on the part of the subject over the realization of the future event.[61]

The second pathway, namely VERB-LESS ALLATIVE > INTENTION > FUTURE, has — to the best of our knowledge — not been explicitly argued for in the literature regarding verb-less allative futures. A hypothesis is that this pathway would be expected to occur in languages in which the allative construction can also encode spatial goals with intentional subjects ("*I to Paris" for "I (am going) to Paris").

In the next section we provide empirical evidence that corroborates this claim by analyzing the emergence and grammaticalization pathway of a verb-less allative future in Ancient Egyptian, based on an examination of the entire corpus of attested texts in Early Egyptian. Besides, the study of the evolution of this construction is an interesting locus for investigating the relationship between grammaticalization and some mechanisms traditionally associated with subjectification, i.e. the shift from subject-oriented to speaker-oriented inferences and the relaxation of the selectional restriction of the construction.

4 The Ancient Egyptian verb-less allative future

In this section, after a brief characterization of the Ancient Egyptian language and corpus (§4.1), we briefly introduce previous accounts regarding the meaning of this future construction (§4.2) and we suggest an alternative view (§4.3): diachronic evidence strongly suggests that the Ancient Egyptian allative future is perhaps better *not* described as a DEONTIC

60 For English *is to* + infinitive, see e.g. Jespersen (1949b: 354-355): "the usual meaning of obligation, destiny, etc. (what am I to do? | the Minister is to speak to-night) may be weakened, exactly as the corresponding meaning of *shall* is weakened when it serves to denote future time. Examples […] you are only the beginning of what you are to be."

61 The lack of intentionality is manifest in the examples of the old French *être pour* + infinitive "to be for + infinitive" future-oriented constructions quoted by Gougenheim (1971: 114-121).

future, but as a future that follows the pathway VERB-LESS ALLATIVE > INTENTION > FUTURE. Finally, the concluding remarks (§4.4) are devoted to a discussion of the possible impact that the study of the evolution of this construction might have for the notion of subjectification insofar as it intersects with grammaticalization processes.

4.1 The Ancient Egyptian language and corpus

Ancient Egyptian[62] is a language that belongs to a relatively autonomous branch of the Afroasiatic macro-phylum. [63] It was spoken in Egypt and recorded in written form from around 2700 BCE to some time after 1200 CE, when speakers shifted to Arabic. Traditionally, Ancient Egyptian written documentation is divided into five different phases: Old Egyptian (2700-2200 BCE), Middle Egyptian (2150-1400 BCE), Late Egyptian (1400-700 BCE), Demotic (700 BCE - 500 CE) and Coptic (400-1200 CE). In the present paper, we will be dealing only with the first three stages, i.e. from Old to Late Egyptian, that cover all together more than two millennia of the history of this Language.[64]

To our eyes, the use of Ancient Egyptian linguistic data has at least three significant advantages when dealing with notions such as grammaticalization and subjectification: first, the length of attestation allows for the study of long term processes of language change, including numerous linguistic cycles; second, the language is attested in a wide variety of text types and genres, which means that the long processes of language change can be mapped onto gradient synchronic systems in which various types of diaphasic, diastratic and diatopic variations are symptomatic of the gradual evolution of language structure[65] (Traugott & Trousdale 2010a); three, most studies on subjectification are based on data from English, French, Dutch, German, Japanese and Spanish, but this concept has still to be explored for languages from other families and areas.[66] In the functional domain of modality, for instance, Narrog (2010) recently argued that grammaticalization and semantic change of obligations markers "may depend on how speakers in a specific language/culture pragmatically deal with the expression of obligation"[67], which lead us to the following methodological remark: the use of a culturally alienated text language (Fleischman 2000) such as Ancient Egyptian for studying questions intimately related to pragmatic inferences and their conventionalization is arguably as legitimate as it would be with any other (text) language.

More to the point, we are not relying solely on intuitions about meanings in context. There are formal changes in the constructions, such as in the domain of selectional restrictions, that provide important and relatively objective information about the meanings associated with constructions. Assuming the Uniformitarian Principle, these changes can be taken to result from the same processes of language change that apply to contemporary languages. A contextual analysis of the constructionalization and grammaticalization processes is likely to

62 See Loprieno (1995: 1-10).

63 For recent overviews of the main Egyptian connections with other languages, see Satzinger 2002; Vernus 1988 & 2010.

64 For a study of the "future cycles" over the whole diachronic length of attestation of Ancient Egyptian, see Grossman & Polis (in preparation) and the sketch proposed in Polis (2006: 244-248);.

65 Of course, this does not require a conception of Egyptian diachrony as a simple linear development as reflected in the attested written sources. Like many languages attested over a long period of time, there is a lot of variation, heterogeneity, and lacunas. However, we consider this to be an advantage, since it allows us to ask interesting questions and forces us to develop more rigorous models of language change.

66 This lacuna is addressed in part by this volume and its companions.

67 See further Traugott (2007: 296-297) & Narrog (2010 : 420-421).

shed light on the types of inferences that were available to the speakers and listeners (or writers and readers) in specific textual environments.

4.2 Previous accounts about the semantics of the allative future

In §3.2.2, we briefly mentioned an Ancient Egyptian future tense that was grammaticalized out of an allative source construction. The new future construction emerges alongside an older synthetic future form — called "prospective" in the Egyptological literature (Loprieno 1995: 81), but actually a full-fledged future that is not especially related to prospective aspect.[68] The functions of this older synthetic future become increasingly limited over time, due to the rise of the new allative future tense. Eventually, it comes to be restricted to idiomatic expressions when the allative future is fully grammaticalized (i.e. stage 4 as described in §4.3), and as such, it is no longer a productive paradigm.

The new allative future tense is commonly referred to in Egyptological literature by its constructional scheme, *ỉw=f r sḏm* "he is going to hear," where *sḏm* "to hear" represents any verbal lexeme (infinitive inflexion) and *=f* "3SG.M" represents any nominal or pronominal subject. The morpheme *iw* will be treated here as an auxiliary, which belongs to a paradigm of morphemes that marks a clause as independent (non-subordinated) and realis (with an explicit anchoring in the *hic et nunc* of the speaker). The morpheme *r* is a preposition that can be described as an allative (goal) marker. The constructional scheme can be represented as follows:

1	2	3	4
ỉw	*f*	*r*	*sḏm*
AUX	3SG.M	ALL	hear\INF
"he will hear"			

Figure 4. The constructional scheme of the Allative Future in Ancient Egyptian

This construction belongs to a family of constructions built on the scheme [Subject – Predicate] (known as "adverbial predication") in which the predicate is an adverbial or prepositional phrase (Gardiner 1957: 35; 91-98; Shisha-Halevy 2000).

In his pioneering study of the future tenses in Earlier Egyptian (i.e. Old and Middle Egyptian), Vernus (1990) suggested that the original meaning of the source construction for this future tense is "deontic" in nature:

> "[t]he relationship between the action and its subject does not stem from the speaker/writer's intention or expectation. Rather, the subject is bound to the fulfillment of the action through an ineluctable necessity. Even in the first person, something more than mere intention or expectation of the speaker/writer — who is then identical to the subject — is involved." (1990: 10)

This view has been endorsed by most scholars working on Earlier Egyptian,[69] but we think that this description — that would fit quite well in the pathway described above (Fig. 3) for

68 See Edel (1964: §937 and §934 for its relation with the allative future, esp. with respect to frequency).

69 See e.g. Malaise & Winand (1999: 479): "À l'origine, dans cette structure pseudo-verbale, attestée depuis la V^e^ dynastie, la préposition r devait encore avoir sa valeur pleine de 'destiné à'. Ainsi *iw=f r sḏm* signifie-t-il 'il est (maintenant) destiné à entendre'. Il s'agit donc d'une action qui va obligatoirement démarrer au moment où l'on parle. Cette valeur déontique explique que cette forme peut aussi, dans de rares exemples, fonctionner dans le passé"; Allen (2000: 176): "The pseudoverbal construction with *r* + infinitive denotes action that has yet to happen at the moment of speaking or with respect to another action: for example, *r prt* 'will emerge, was to emerge'. Usually this predicate implies

the venitive source constructions as well as for the contemporary meaning of the English construction *is to* + infinitive — calls for careful reconsideration. Indeed one can point out three serious biases of the previous approaches:

[1] The focus on the Middle Egyptian corpus, to the neglect of the Old Egyptian data that are of paramount relevance for any argumentation regarding the grammaticalization pathway of the construction
[2] The attribution of the *Grundbedeutung* "destined for/to" to the preposition *r*, whereas it can be showed to possess all the typical features of an allative marker (Rice & Kabata 2007; Grossman & Polis 2012a)
[3] A projection of the semantics of the English *is to* + infinitive construction onto the Ancient Egyptian construction, in particular its use with a deontic value (see Allen 2002: 183).

We see at least two arguments for reopening the discussion regarding the meaning of this construction. First, when the construction emerges in the extant documentation, the vast majority of examples involve first person intentional subjects that exercise control over the predicate. This does not fit well with a deontic original meaning.[70] Second, the allative preposition *r* can encode both non-spatial and spatial goals. The constructional scheme on which the allative future construction is based can encode spatial destination, from the earliest attestation onwards (for an older example, see *infra* Ex. 58):

Ex. 57 *CT* VI, §490 [68i, T3Be] (de Buck 1956)
iw=i r p.t
AUX=1SG ALL sky
"I am going to the sky"

Furthermore, in §3.3 and Fig. 3, we hypothesized that the verb-less allative constructions that grammaticalize into future tenses, going through a stage during which they express intention, are precisely those that have a source construction able to express spatial destination. Therefore, the semantic development typical of andative futures, namely MOVEMENT TOWARDS > INTENTION > FUTURE, is at least a good hypothesis for the grammaticalization of the Ancient Egyptian verb-less allative source construction. Of course, the preceding remarks are preliminary and only a careful study of the historical data at our disposal is likely to shed new light on this question.

4.3 Emergence and grammaticalization of the verb-less allative future

In this section, we describe the different steps of the emergence and grammaticalization of the verb-less allative future in Ancient Egyptian[71] with a particular focus on the relaxation of the

---

an action that is planned or inevitable. In this respect it is similar to the English constructions with a form of the verb *be* or *have* plus the infinitive (…) *Jill is to give the opening address* (…)". The French teaching grammar of Grandet & Mathieu (2003: 183) is a striking exception in this respect: following Martinet's description of the French preposition *à* "to" as having *une valeur allative*, they call the construction *allatif*. See also Shisha-Halevy (2000: 75, n. 6): "in Egyptian, so far as we can see, the 'spatial' future ("I am to go") is earliest, whereas the modality factor starts to play a role in the same formation only very late".

70 On the intricate relationships between expressions of futurity and deontic modality in Ancient Egyptian, especially in Late Egyptian, see Polis 2006.

71 The number of examples presented in this section has been purposely limited in order not to cloud the main linguistic issues with philological details and intricate problems that we discuss elsewhere (Grossman & Polis 2012b). Moreover, the division in *stages* of grammaticalization does not do full justice to the material, in which we observe a gradual evolution. We think however that this organization of the data is the only way to present a clear picture emerge for linguists who are not familiar with the particular philological issues of Ancient Egyptian.

selectional restriction in terms of subject and predicate as well as on the types of inference available in context. The different stages of grammaticalization of the construction can be described as follows.

Stage 0. This stage can be labeled as MOTION WITH INTENT TO ACT. It represents the first step traditionally associated with the grammaticalization of a future tense out of allative *verbal* source constructions (for an English example, see Ex. 56).

This first stage is not attested for *verb-less* allative futures for the very reason that the "motion" component — that is inherent to an allative verbal predicate — is not expressed by a specific gram in verb-less allative source constructions, the goal orientation only being expressed. However, a construction that is structurally close to the allative future is used for expressing the movement towards a spatial goal in the earliest textual material (*Pyramid Texts*; see Allen 2005). Its constructional scheme is as follows:

1	2	3	4
iw	NP	*R*	NP
AUX	ANIM	ALL	LOC
"NP is going to NP"			

Ex. 58 *PT* §181 [P] (Allen 2005: 76)
i(*w*)=*f* *ir* *ḥ* *pf* *n* *nb.w* *kȝ.w*
AU(X)=3SG.M ALL palace DEM of lords kas
"(Tell the name of Teti to the Sun, announce Teti to the Sun, for) he is (going/on his way) to this palace of the lords of Kas."

This construction antedates the emergence of the allative future construction and has the following characteristics: an intentional subject moves towards a spatial destination or goal. This earlier construction can be considered as the basis for the later occurrence of the infinitive in the noun phrase slot after the allative preposition.

Stage 1. This stage is characterized by an INTENTION TO ACT (and no spatial movement is involved); it is attested in Ancient Egyptian records from c. 2600 to 2300 BCE:

Ex. 59 *Urk.* I, 224,6 (Sethe 1933: 224)
iw(=*i*) *r* *ir*(.*t*) [*ḫ*]*ft* *mrr.t*[=*s*]*n*
AUX(=1SG) ALL do\INF [acc]ording_to desire[=3]PL
"(With respect to those who will act in accordance with what I have said), I will act in accordance with what they desire."

During this stage, clear selectional restrictions are imposed on the construction: the subject is a necessarily intentional/animate first person ([+ANIM]&[+INTENT]) and the predicate assigns an agentive role ([+AGENT]) to this subject. In fact, the matter of agentivity itself is less crucial than that of control ([+CONTROL]), although the two are obviously related. The future construction chiefly occurs in the closing section of formulae known as the *Appeals to the living* in which the deceased calls upon future generations to maintain his funerary cult. The future construction is used in apodotic contexts: the speaker asserts his *intention* to do whatever the next generations might wish, if they make the offerings he asked. It is worth noticing that postulating a deontic reading for these early examples ("I am to act") would be hardly tenable: the deceased will not *have to* do anything, he apparently simply states what his intentions are in case the living do what he says.

At this stage of grammaticalization of the allative future, listeners/readers have no reason to infer that there is any difference between the subject's intentions (subject-oriented

inferences) and the prediction of the speaker about an event that he, as a first person subject, will enact (speaker-oriented inferences). The subject-oriented inferences linked to the intention of the first person subject/speaker are of course the more salient at this stage.[72] In fact, this intentional meaning is remarkably stable over time. Third persons, and to a lesser extent, second persons, are the principal locus of change. This is a typologically well-attested semantic asymmetry, and it can be explained pragmatically.

Selectional restrictions of the construction:
Subject = 1st pers. [+anim]&[+intentional]
Predicate = [+control]
Inferences: [+SubjectOriented]&[-SpeakerOriented]

Stage 2. This stage — attested in texts dating from c. 2300-2150 BCE — sees the results of the accumulation of speaker-oriented inferences: the selectional restrictions of the construction are relaxed, allowing new kinds of intentional subjects, viz., second and third persons, to occur in the construction. This can be attributed to speaker-oriented inferences, in which addressees infer that the speaker is the source of prediction regarding a future event.

Ex. 60 mCairo 20003, l. 3-4 (Lange & Schäfer 1902: 3-4)
iw=ṯn r ḏd m r3=ṯn (…)
AUX=2PL ALL say\INF with mouth=2PL
"(If you have nothing in your hands,) you will say with your mouth (…)"

Ex. 61 *Urk.* I, 224,15 (Sethe 1933: 224)
iw ḥw.t-ḥr r ir.t mrr.t=sn
AUX Hathor ALL do\INF desire=3pl
"(With respect to any man or woman who shall speak,) Hathor will fulfill their desires."

The textual environment in which the second and third person subjects first appear might be relevant. Indeed, as shown by the two previous examples they mostly occur in apodotic contexts, as was the case with first person subjects at stage 1. This textual environment could thus have played a role as bridging context for the evolution of the construction.

During this stage, a further argument against the deontic meaning of the future construction is to be found in the fact that, among the first occurrences of third person subject, one finds the noun phrase *ḥm=f* "His majesty" that refers to Pharaoh (an is also indexical of the writer of the letter ["His Majesty" = "I"]). In the cultural environment of the Old Kingdom, it is obviously difficult to imagine that the king *has to* act in such or such a way; a simple explanation is that he merely intends to:

Ex. 62 *Urk.* 1, 129, 6-8 (Sethe 1933: 129)
iw ḥm=f r iri.t s3r.w=k ʿ3.w iḳr.w
AUX majesty=3SG.M ALL do\INF aspirations=2SG.M many excellent
"(If you continue day and night being concerned with doing what your lord loves, praises and commands,) His Majesty will fulfill your many worthy aspirations

This evolution of the construction is of course much in tune with Bybee et al. (1994: 254) who "hypothesize that all futures go through a stage of functioning to express the intention, first of the speaker [= Stage 1], and later of the agent of the main verb [Stage 2]".

Selectional restrictions of the construction:
Subject = 1st/2nd/3rd pers. [+anim]&[+intentional]

72 Bybee et al. (1994: 254) state that "[t]he meanings that can feed the future path must be meanings that appropriately function in statements that imply an intention on the part of the speaker."

Predicate = [+control]
Inferences: [+SubjectOriented]&[+SpeakerOriented]

Down to stage 2, the construction cannot be described as a fully semanticized future, as shown by the selectional restrictions on the subject and predicate types, even if the rise of speaker-oriented inferences opens the way to predictive readings.[73]

It is worth noticing here that the directive meaning — prominent with second person subject as in Ex. 60 — is a cross-linguistically recurrent inference that is available for future tenses as soon as speaker-oriented inferences are taken into account. Indeed, the very fact that the speaker is in the position to assert a future event that involves a second person intentional subject, i.e. has (or pretends to have) authority over the addressee, inevitably leads to manipulative inferences and to a decrease of the intentionality/control of this subject.

Interestingly, the appearance of second person subjects in manipulative contexts as early as stage 2 contradicts Bybee et al. (1991: 26-29) who take it as a late use for futures and attribute this meaning to FUTAGE 4, but supports their later statement that "some doubt is cast on this proposal by the fact that futures with imperative uses tend to have periphrastic expression. […] futures with imperative uses are younger than average. […] The evidence examined here shows that futures that do not have undergone a lot of formal grammaticalization can have an imperative function" (1994: 274 & 280).

We will argue below (see stage 3a) that the very appearance of intentional second persons in the subject slot (with the related inferences, like a decrease of the control exerted by the agent) may have been instrumental in the opening of the construction to non-intentional subjects and might have participated directly in the evolution of the construction in the direction of expressing pure prediction.

During Stage 2 however, second and third person subjects remain pretty rare in the extant documentation: taken together, they represent less than 15% of the subjects of the allative future. At the same period, we observe a clear rise in text-frequency of the construction , a rise that is not proportional to the quantitative evolution of the corpus as a whole):

Stage 1	**Stage 1-2**	**Stage 2**
4	3	64

Figure 5. Tokens of the allative future during stage 1 and 2

Stage 3a. This stage is characteristic of Middle Egyptian (2150-1400 BCE). With the rise of speaker-oriented inferences at Stage 2, new types of subjects were able to enter the future constructional scheme. In turn, this led to the retraction of subject-oriented inferences and opened-up the way to Stage 3 of grammaticalization. Indeed, when the speaker is envisioned as making a prediction about an intentional subject, the salience of the intentional meaning characteristic of animate subjects decreases, as it has been shown with the available manipulative inference in stage 2 where the subject does not actually exert any control over the predicate.

The retraction of subject-oriented inferences leads to a relaxation of the selectional restrictions on the types of possible subjects for the construction and to the semantics of PREDICTION (that was facilitated by the speaker attributing intentions to second or third person

73 An isolated example of the construction with an inanimate subject occurs at the very end of the chronological period covered by Stage 2 and prefigures the later development of the construction.

subjects). During Stage 3a, several predicates attested do not require an agentive subject anymore and control-less subjects are frequent:[74]

Ex. 63 P. UC 32057, col. III, 14 (Collier & Quirke 2004: 63)
iw=s r ms.t wḏf
aux=3SG.F ALL give_birth:INF delay
"If you find it limp, you should say about her: 'she will give birth late' "

Selectional restrictions of the construction:
Subject = [+anim]
Predicate = None
Inferences: [-SubjectOriented]&[+SpeakerOriented]

Stage 3b. According to the preserved documentation, it is difficult to decide whether Stage 3a and Stage 3b are two distinct stages. Stage 3b is characterized by the dropping of all selectional restriction on the subject type:

Ex. 64 *Sh.S.*, 119-120 (Blackman 1972: 45)
iw dp.t r iy.t m ḫnw
AUX boat ALL come\INF from home
"A ship will come from home."

In stage 3a and 3b, the construction is functionally a future construction: there are many examples with non-agentive and inanimate subjects, which necessitate a purely predictive meaning and exclude intentional readings.

Selectional restrictions of the construction:
Subject = None
Predicate = None
Inferences: [-SubjectOriented]&[+SpeakerOriented]

It should be stressed again here that the best explanation for the rise of a purely predictive meaning appears to be a pragmatic one. We saw that s*ubject-oriented* inferences — in which the speaker is understood to be talking about his intentions [Stage 1] and the intentions of a human subject [Stage 2] — were quickly replaced by *speaker-oriented* inferences — that interpret the speaker as predicting something about the subject (asserting that an event will take place in the future). These speaker-oriented inferences lead to relaxing the original selectional restrictions of the constructions; the constructional scheme is therefore open to control-less or inanimate subjects and predicates that do not require agentive subjects that can exercise control over a process. Only these speaker-oriented inferences provided the conditions (increase in type-frequency) that promoted a rise in text-frequency, since temporal meanings are more common than expressions of intention in many kinds of discourse situations.

Stage 3 corresponds to a semantic age for futures labeled FUTAGE 3 in Bybee et al. (1991: 25-29), i.e. full-fledged futures able to express predictions of the speaker. At this point however, the Allative Future construction does not display advanced features of grammaticalization at the formal level. Indeed, during Stage 3a-b, the allative preposition is still fully in charge of the expression of the future meaning: we observe no obligatorification of the *iw* auxiliary (that signals independent main clause uses down to Stage 3a-b, but will later become an integral part of the future construction). The allative expression of the future (*r* + infinitive) can

74 See Langacker (1999: 147) and n. 20.

therefore occur with a range of other initial auxiliaries in independent uses — like the presentative *mk* (Ex. 65) or the epistemic *smwn* (Ex. 66) — and, in dependent uses — like relative and complement clauses (Ex. 67) or protases (Ex. 46) —, no auxiliary occurs in the future construction:

Ex. 65 *Peas.*, B1,42 (Parkinson 1991: 11)
mk *wi* *r* *nḫm* *ꜥ3=k,* *sḫty*
PRES 1SG ALL seize:INF ass=2SG.M peasant
"Look, I am going to seize your ass, peasant."

Ex. 66 *Sinuhe*, B157-158 (Koch 1990: 55)
smwn=k *r* *rdi.t* *m3=i* *bw*
probably=2SG.M ALL give:INF see:SBJV=1sg place
"Surely you will let me see the place (where my heart dwells)."

Ex. 67 *Nofru*, 33 (Gardiner 1957: 253)
iw *ḏd.n=sn* *wnt* *sn* *r* *ḥḏ.t* *tp.w*
AUX say:PFV=3PL that 3PL ALL destroy:INF heads
"They said they would destroy heads."

Such examples show that syntactic environments that are considered by Bybee et al. (1991: 32; 1994; 244) to be characteristic of most mature futures (FUTAGE 4), like uses in complement clauses or protases, are actually attested before the first indices of grammaticalization *at the formal level* actually appear in the textual material. In other words, the selectional restriction of the verb-less allative future are almost entirely relaxed before the first signs of morpho-phonologic and syntactic changes take place. It is only after the future meaning of the construction was fully semanticized that other features of advanced grammaticalization appeared. This will be illustrated with Stage 4.

Stage 4. By the beginning of the Late Egyptian period (c. 1400-700 BCE), we observe — at the formal level — a loss of compositionality of the construction that, in turn, possibly created conditions conducive to morphological reduction.[75] The auxiliary *iw*, which was previously used in independent main clauses only, becomes an integral part of the future construction. This morpheme has lost its autonomy as *hic-et-nunc* assertive marker. This is evidenced by the occurrence of the *iw* auxiliary in dependent clauses, from which it was previously excluded (Ex. 68), and by the fact that *iw* does not commute anymore with other initial auxiliaries:

Ex. 68 P. Berlin P 10463 (= Caminos 1963: pl. 6)
iw *iw=tw* *r* *mni*(*.t*) *r* GN *m* *hrw* *3*
when FUT=one FUT come_alongside:INF ALL GN in day 3
"(I will come to you) when one will come alongside GN in 3 days"

Another formal change that occurs during Stage 4 is the development of an allomorph: after the *iw* auxiliary became an integral part of the construction, it developed an allomorph (*iri*) used instead of *iw* when the subject is a noun phrase and not a pronoun.[76] This kind of formal change is generally considered indicative of a greater degree of grammaticalization of the construction (Bybee et al. 1991: 37).

75 Regarding the first occurrences that display morphosyntactic changes, see Kroeber 1970: 135-139. For the morphology of the construction during this stage, see Winand 1992: 481-517.

76 Probably due to phonological processes that are not easy to track behind the hieroglyphic and hieratic scripts. See Vergote 1973: 221; Mathieu 2008: 200, §87. On the development of this allomorphy, see Kruchten 2010.

Interestingly enough, this is only at this stage that a symmetrical negation emerges in our documentation and comes to replace an older negation:

Ex. 69 Tomb of Paheri (Tylor & Griffith 1894: pl. 12,2)
mk nn iw=i r wꜣḥ=ṯ
PRES NEG FUT=1SG FUT stop:INF=2SG.F
"I'm not going to stop you!"

As illustrated by the glosses of the two previous examples, the expression of future time reference is now up to the construction as a whole, i.e. it is shared by the auxiliary *iw* and the allative preposition *r*. In other words, it is no longer expressed solely by the allative preposition. This, in turn, allows for a morphological reduction of the construction that takes progressively place during Stage 4: the allative marker *r* gradually becomes optional (Winand 1992: 504-510), at least at the graphemic level, the expression of futurity being now up to the erstwhile initial auxiliary:

Ex. 70 P. Chester Beatty I, rt 2,2 (Gardiner 1932: 38,10-11)
iḫ pꜣ nty iw=n ø *ir=f*
what ART:M.SG REL FUT=1PL ø do:INF=it
"What will we do?" (litt. "what is it that we will do it?")

As a result of the obligatorification of the *iw* auxiliary, which now encodes futurity, new types of adverbial predicate[77] — ones that are, crucially, not allatively marked — can enter the construction and express future time reference:

Ex. 71 P. BM 10335, vs 16-17 (= Kitchen 1989: 418,6)
mtw=i pnꜥ rꜣ=i, iw(=i) di-k(wi) n pꜣ msḥ
if=1SG turn_upside_down mouth=1SG FUT(=1SG) give:RES-1SG to the crocodile
"If I contest my deposition, I will be thrown (lit. given) to the crocodile"

During Stage 4, the construction undergoes a new evolution at the pragmatic level, with new *intersubjective* inferences emerging in the textual sources. The following example nicely illustrates this newly available kind of inference:

Ex. 72 P. Leyde I 362, vs 1 (= Kitchen 1979: 927,5-6)
iri Ptḥ in.t=n mtw=n ptr=ṯ
FUT Ptah bring_back\INF=1PL so_that=1PL see=2SG.F
"May Ptah bring us back so that we see you!"

This sentence occurs at the end of a letter where the sender begs the god Ptah to bring them them back safe from an expedition. This kind of OPTATIVE use[78] is, to be sure, accurately described in terms of an *increased degree of intersubjectivity*. However, the notion intersubjectivity has then to be envisioned somehow differently than in Traugott's canonical definition (2003: 126): "the way in which natural languages, in their structure and their normal manner of operation, provide for the locutionary agent's expression of his or her awareness of the addressee's attitudes and belief, most especially their 'face' or 'self-image' " (2010: 33). We suggest expanding this definition in order to be able to account for optative uses such as the ones encountered in the Ancient Egyptian material: intersubjectivity could be

77 Adverbs or verb forms with adverbial function, like the so-called pseudo-participle (a resultative form); see Winand 1996).

78 Layton (2000: 263-267) labels the Coptic descendant of the allative future construction "The optative ϵⲣϵ-" and describes it as "expressing future tense with a strong expectation of fulfillment" and "expressing polite or restrained command/prohibition (*Would you…*); or polite wish directed to a 1st or 3rd person (*Let me*, *May he*)".

defined as *any correlation of subjectivity*[79], i.e. the term could refer to any construction that takes into account more than one subjective point of view. In the present case, we would manifestly have to deal with such a correlation of subjectivity: the one of the speaker — who predicts the future occurrence of an event —, but also the one of the third person grammatical subject — who, because of his divine nature, exercise a full control over the realization of the future event, which depends on his good will (or intention) and over which the speaker has actually no (or little) control.

Even if these optative uses remain somewhat marginal in the data of Stage 4, they have the interest of showing that the construction first evolved in the direction of an increased degree of subjectivity, with the rise of speaker-oriented inferences, which in turn led to the semanticization of prediction meanings, and then developed an intersubjective side-meaning. This of course fits quite well with Traugott's cline of SUBJECTIFICATION > INTERSUBJECTIFICATION. Now, how can we account for the process of intersubjectification in the present framework? We would argue that intersubjectification is, in this case, the result of a re-strengthening of the subject-oriented inferences: once the speaker-oriented inferences have been fully integrated in the semantics of the construction (semanticization of the predictive meaning), subject-oriented inferences can be made based on the new coded meaning. Accordingly, we observe the occurrence of subjects that do exert full control on the realization of the future event, which, combined with the predictive meaning, leads to the expression of optativity. Therefore, we are facing a cyclical process of subject-speaker-subject-oriented inferences. Of course, this cyclical process of inferences never lead to the re-emergence of older meaning, for the older inferences have to be sufficiently semanticized before new ones can lead the construction to the expression of new functions.

4.4 Implications of the Ancient Egyptian verb-less allative future

The main interest of the Ancient Egyptian allative future regarding the development of future tenses in general is that the source construction does not involve a verb of motion at all, yet it develops along pathways of functional change similar to other Allative Futures (see Fig. 3), such as the English 'going to' future, which has played such a prominent role in studies of grammaticalization.

More specifically, the case-study in §4.3 showed that the INTENTIONAL pathway characteristic of andative verbal source constructions is probably to be preferred to the SCHEDULED/PREDESTINATED/DEONTIC hypothesis that one finds in the linguistic literature on Ancient Egyptian. In this respect, it has been possible to demonstrate how — over the *longue durée* (i.e. more than 1500 years) — the rise and accumulation of speaker-oriented inferences, together with the retraction of subject-oriented ones, led to the relaxation of the selectional restrictions of the source construction and eventually to a semanticization of the prediction meaning.

The grammaticalization of the Ancient Egyptian allative future is therefore a clear case of subjectification. We hope that the distinction we develop between subject- and speaker-oriented inferences will contribute to the understanding of the "mechanism whereby meanings come over time to encode or externalize SP[eaker]/W[riters]'s perspectives and attitudes as constrained by the communicative world of the speech event, rather than by so-called 'real-world' characteristics of the event or situation referred to" (Traugott 2003: 286).

79 See already the two dichotomies in Benveniste's writings (1966): I vs. you ("*corrélation de subjectivité*") and I/you vs (s)he (*corrélation de personnalité*).

Finally, we should stress that the evolution of the allative future construction in Ancient Egyptian (INTENTION > PREDICTION > OPTATIVITY) is congruent with the proposal made by Narrog (2005, 2007, 2010) who argues that, diachronically, an increasing *speaker-orientation* is expected for modal grams: "modal meanings always shift in the direction of an increased speaker-orientation." According to Narrog (2010: 394), "the term speaker-orientation refers to the speaker her- or himself and the speech situation, including the hearer, and thus subsumes both subjectivity and intersubjectivity". Consequently, an increase of speaker-orientation may be, simultaneously, used for describing evolutions such as FUTURE/PREDICTION > IMPERATIVE. This would be a typical case of "intersubjectification' in terms of the speaker-oriented modalities defined in Bybee et al. (1994: 179), which allow "the speaker to impose [the existence of] conditions on the addressee." It is also relevant to diachronic changes like ABILITY/ROOT POSSIBILITY > EPISTEMIC POSSIBILITY , which would certainly be characterized as a case of subjectification). Valid as this generalization might be (MODALITY > MOOD AND ILLOCUTIONARY FORCES), the case study presented here shows that Narrog's cover-term *speaker-orientation*, as referring both to subjective and intersubjective phenomena, is probably too much underspecified as a "mechanism." Taking into consideration an expanded conception of *subject- vs speaker-oriented inferences* could help refine and operationalize Narrog's important insights.

5 Conclusions

In the domain of semantic change, Eckardt (2009: 39) has stressed that language change ought to be explained without mysteries, viz., without falling back on unexplained or unmotivated principles or "mechanisms." In much of the current literature on subjectification — and to a lesser extent, grammaticalization — generalizations are represented as motivations or principles of language change. The present paper has attempted to provide a relatively mystery-free account of semantic change in grammaticalization and subjectification, and to link this account to the reductive formal changes observed in grammaticalization.

Of course, the ideas presented in this paper still have to be developed and applied to other kinds of change in order to evaluate them more carefully. Many questions remain to be investigated empirically: can we identify the range of inferences that a given construction type makes available, crosslinguistically? How do different pragmatic mechanisms, e.g., inferencing and presupposition accommodation, interact in semantic change? Are there examples of counter-directional change, i.e., subject-oriented inferences spreading at the expense of speaker-oriented ones? Does statistical evidence from naturally-occurring discourse bear out the hypothesis that speaker-oriented meanings are more common than participant-oriented ones? How can we examine the mechanisms by which innovative speaker-oriented inferences are actually made and propagated in a more empirical fashion? To what extent does the framework proposed here cover the wide range of phenomena that have been treated as grammaticalizations? Does it render explanations based on metaphors or reanalysis epiphenomenal?

We hope that the proposals made here will contribute to the ongoing project of understanding the relationship between functional and formal change in grammaticalization, and thereby to linguists' attempts to understand why languages structures are the way they are.

5 Bibliographical references

Abdoulaye, M.L. (2001), "The grammaticalization of Hausa *zâa* 'be going' to future", in *Journal of African Languages and Linguistics* 22, p. 1-32.

Aissen, J. (1994), "Totzil auxiliaries", in *Linguistics* 32, p. 657-690.

Allen, J.P. (2000), *Middle Egyptian. An introduction to the language and culture of hieroglyphs*, Cambridge, Cambridge University Press.

———— (2005), *The ancient Egyptian Pyramid Texts. Translated with an introduction and notes*, Atlanta, Society of Biblical Literature (Writings from the Ancient World 23).

Allot, A. (1965), "The verbal syntagma in Burmese", in *Lingua* 15, p. 283-309.

Ansaldo, U. & L. Lim (2004), "Phonetic absence as syntactic prominence: Grammaticalization in isolating tonal languages", in O. Fischer, M. Norde & H. Perridon (eds.), p. 345-362.

Ariel, M. (2008), *Pragmatics and Grammar*, Cambridge, Cambridge University Press.

Athanasiadou, A., C. Canakis & B. Cornillie (2006), "Introduction", in A. Athanasiadou, C. Canakis & B. Cornillie (eds.), p. 1-13.

Athanasiadou, A., C. Canakis & B. Cornillie [eds.] (2006), *Subjectification. Various paths to subjectivity*, Berlin/New York, Mouton De Gruyter (= Cognitive Linguistics Research 31).

Benveniste, Ém. (1966-1974), *Problèmes de linguistique générale*, 2 vol., Paris, Gallimard (collection Tel), t. I : 1966, t. II : 1974.

Bergs, A. & G. Diewald [eds.] (2008), *Constructions and Language Change*. Berlin/New York, Mouton de Gruyter (Trends in Linguistics, Studies and Monographs 194).

Bisang, W. (2004), "Grammaticalization without coevolution of form and meaning: The case of tense-aspect-modality in East and mainland Southeast Asia", in W. Bisang, N.P. Himmelmann & B. Wiemer (eds.), p. 109-138.

———— (2008), "Grammaticalization and the areal factor. The perspective of East and mainland Southeast Asian languages", in M.J. López-Couso & L. Seoane (eds.), p. 15-35.

Bisang, W., N.P. Himmelmann & B. Wiemer [eds.] (2004), *What makes grammaticalization? – A look from its fringes and its components*, Berlin/New York, Mouton de Gruyter (Trends in Linguistics. Studies and Monographs 158).

Blackman, A.M. (1972), *Middle Egyptian Stories*, Brussels, Fondation Égyptologique Reine Élisabeth (Bibliotheca Aegyptiaca 2).

Bourdin, Ph. (2000), "À propos des futurs ventifs et itifs : remarques sur un paradoxe", in *Verbum* 22/3, p. 293-311.

———— (2004), "La resémantisation des directionnels déictiques comme marqueurs aspectuels du « transcursif » : Vers une typologie », in J. Mirovsky, A. Kotesovcova & E. Hajicova (eds.), *Proceedings. XVII International Congress of Linguists. Prague, July, 2003*, Prague, Faculty of Mathematics and Physics, Charles University (on CD-Rom, Section W7).

———— (2008), "On the grammaticalization of 'come' and 'go' into markers of textual connectivity", in López-Couso & Seoane (eds.), p. 37-59.

———— (2009), "On the "great modal shift" sustained by come to VP", in R. Salkie, P. Busuttil & J. van der Auwera (eds.), *Modality in English. Theory and Description*, Berlin/New York, Mouton de Gruyter ([Topics in English Linguistics], p. 349-373.

Brinton, L.J. & E.Cl. Traugott (2005), *Lexicalization and language change*, Cambridge, Cambridge University Press.

Brisard, Fr. (2001), "*Be going to*: An exercise in grounding", in *Journal of linguistics* 37/2, p. 251-285.

de Buck, A. (1956), *The Egyptian Coffin Texts. VI. Texts of spells 472-786*, Chicago, The University of Chicago Press (Oriental Institute Publications 81).

Bybee, J.L. (2003), "Mechanisms of change in grammaticalization: The role of frequency", in R. Janda and B. Joseph (eds.), *Handbook of historical linguistics*, Oxford, Blackwell, p. 602-623.

———— (2007), *Frequency of use and the organization of language*, Oxford, Oxford University Press.

———— (2008), "Formal universals as emergent phenomena: The origins of structure preservation", in J. Good (ed.), *Language universals and language change*, Oxford, Oxford University Press, p. 108-121.

———— (2010), *Language, Usage and Cognition*, Cambridge, Cambridge University Press.

Bybee, J.L. & W. Pagliuca (1987), "The evolution of future meanings", in Ramat et al. (eds.), p. 109-122.

Bybee, J.L., W. Pagliuca & R. Perkins (1991), "Back to the Future", in Traugott & Heine (eds.), vol. 2, p. 17-58.

———— (1994), *The evolution of grammar. Tense, aspect and modality in the languages of the world*, Chicago/London, The University of Chicago Press.

Bybee, J. & S. Thompson (1997), "Three frequency effects in syntax", in *Berkeley Linguistics Society* 23, p. 65-85.

Caminos, R.A. (1963), "Papyrus Berlin 10463", in *Journal of Egyptian Archeology* 49, p. 29-37 &pl. VI-VI[a].

Coghill, El. (2010), "The grammaticalization of prospective aspect in a group of Neo-Aramaic dialects", in *Diachronica* 27/3, p. 359-410.

Collier, M. & St. Quirke (2002), *The UCL Lahun Papyri: Letters*, Oxford (BAR International Series, 1083).

———— (2004). *The UCL Lahun Papyri: Religious, Literary, Legal, Mathematical and Medical*, Oxford (BAR International Series 1209).

Comrie, B. (1976), *Aspect*, Cambridge, Cambridge University Press.

Cornillie, B. (2007), *Evidentiality and epistemic modality in Spanish (semi-)auxiliaries. A cognitive-functional approach*, Berlin/New York, Mouton de Gruyter (= Applications of Cognitive Linguistics 5).

Croft, W. (2000), *Explaining language change. An evolutionary approach*, Harlow, Longman.

———— (2001), *Radical construction grammar: Syntactic theory in typological perspective*, Oxford, Oxford University Press.

Crouch, S.El. (2009), *Voice and verb morphology in Minangkabau, a language of West Sumatra, Indonesia*, MA thesis of the University of Western Australia.

Cuyckens, H., Kr. Davidse & L. Vandelanotte (2010), "Introduction", in Kr. Davidse *et al.* (eds.), p. 1-26.

Dahl, Ö. [ed.] (2000), *Tense and aspect in the languages of Europe*, Berlin/New York, Mouton de Gruyter (Empirical Approaches to Language Typology, Eurotype 20-6).

———— (2000a), "The grammar of future time reference in European languages", in Dahl (ed.), p. 309-328.

———— (2000b), "Verbs of becoming as future copulas", in Dahl (ed.), p. 351-361.

Davidse, Kr., L. Vandelanotte & H. Cuyckens [eds.] (2010), *Subjectification, Intersubjectification and Grammaticalization*, Berlin/New York, De Gruyter Mouton (= Topics in English Linguistics 66).

De Smet, H. & J.-Chr. Verstraete (2006), "Coming to terms with subjectivity", in *Cognitive Linguistics* 17/3, p. 365-392.

Detges, Ul. (2000), "Two types of restructuring in French creoles: A cognitive approach to the genesis of tense markers", in I. Neumann-Holzschuh and E.W. Schneider (eds.), *Degrees of Restructuring in Creole languages*, Amsterdam/Philadelphia, John Benjamins (Creole Language Library 22), p. 135-162.

———— (2004), "How cognitive is grammaticalization? The history of the Catalan *perfet periphrastic*", in Fischer et al. (eds.), p. 211-227.

Donegan, P. (1993), "On the phonetic basis of phonological change", in C. Jones (ed.), *Historical Linguistics: Problems and Perspectives*, London, Longman, p. 98-130.

Dunham, D. (1967), *Second Cataract Forts*, Vol. II: *Uronarti, Shalfak, Mirgissa*, Boston, Museum of Fine Arts.

Ebneter, Th. (1973), *Das bündnerromanische Futur. Syntax der mit* '*vegnir*' *und* '*habere*' *gebildeten Futurtypen in Gegenwart und Vergangenheit*, Bern, Francke (Romanica Helvetica 84).

Eckardt, R. (2009), "APO: Avoid Pragmatic Overload", in M.-Br. Mosegaard Hansen & J. Visconti (eds.), *Current Trends in Diachronic Semantics and Pragmatics*, Bingley, Emerald Group, p. 21-41.

Edel, E. (1955-1964), *Altägyptische Grammatik*, 2 Vol., Roma (Analecta Orientalia 34/39).

Emanatian, M. (1992), "Chagga 'come' and 'go'. Metaphor and the development of tense and aspect", in *Studies in Language* 16, p. 1-33.

Fischer, O. (2010), "An analogical approach to grammaticalization", in K. Stathi, E. Gehweiler & E. König (eds.), p. 181-219.

Fischer, O., M. Norde & H. Perridon [eds.] (2004), *Up and down the Cline — The nature of grammaticalization*, Amsterdam/Philadelphia, John Benjamins (Typological Studies in Language 59).

Fleischman, S. (1982a), *The future in thought and language*, Cambridge, Cambridge University Press.

———— (1982b), "The past and the future: are they coming or going?", in *Berkeley Linguistic Society* 8, p. 322-334.

———— (1983), "From pragmatics to grammar: Diachronic reflections on complex pasts and futures in Romance", in *Lingua* 60, p. 183-214.

Fortescue, M.D. (1984), *West Greenlandic*, London, Croom Helm.

Frajzyngier, Z. (2008), "Grammaticalization, typology and semantics: Expanding the agenda", in M.J. López-Couso & L. Seoane (eds.), p. 61-102.

Gardiner, A.H. (1932), *Late Egyptian Stories*, Brussels (Bibliotheca Aegyptiaca 1).

———— ([3]1957), *Egyptian grammar. Being an introduction to the study of hieroglyphs*, 3rd ed., Oxford, Griffith Institute.

Gildea, Sp. (1997), "Evolution of Grammatical Relations in Cariban: How Functional Motivation Precedes Syntactic Change", in T. Givón (ed.), *Grammatical Relations: A Functionalist Perspective*, Amsterdam/Philadelphia, John Benjamins (Typological Studies in Language), p. 155-198.

Givón, T. (1973), "The time-axis phenomenon", in *Language* 49, p. 890-925.
———— (1991), "Serial Verbs and the Mental Reality of "Event": Grammatical vs. Cognitive Packaging", in Traugott & Heine (eds.), vol. 1, p. 81-127.
———— (2001), *Syntax. An introduction*, 2 Vol., Amsterdam/Philadelphia, John Benjamins.
———— (2002), *Bio-linguistics. The Santa Barbara lectures*, Amsterdam/Philadelphia, John Benjamins.
———— (2005), *Context as other minds. The pragmatics of sociality, cognition and communication*, Amsterdam/Philadelphia, John Benjamins.
Goldberg, A.E. (1995), *Constructions: A Construction Grammar approach to argument structure*, Chicago, University of Chicago Press.
Gougenheim, G. (1971), *Étude sur les périphrases verbales de la langue française*, Paris, Nizet.
Grossman, E. (2009), "Periphrastic perfects in the Coptic dialects. A case study in grammaticalization, in *Lingua Aegyptia* 17, p. 81-118.
Grossman, E. & St. Polis (2012a) "Navigating polyfunctionality in the lexicon", in E. Grossman, St. Polis & J. Winand (eds.), *Topics in Ancient Egyptian lexical semantics*, Göttingen (Lingua Aegyptia. Studia Monographica).
———— (2012b), "How to go to the future without a verb of motion or metaphors: The allative future in Old and Middle Egyptian", in *Festschrift for a distinguished colleague*.
———— (in preparation), "Cycling to the future: a look at tense and modality over the longue durée".
Hagège, Cl. (2010), *Adpositions*, Oxford, Oxford University Press.
Haspelmath, M. (1998), "The semantic development of old presents: New futures and subjunctives without grammaticalization", in *Diachronica* 15/1, p. 29-62.
———— (1999), "Why is grammaticalization irreversible?", in *Linguistics* 37/6, p. 1043-1068.
———— (2007), "Pre-established categories don't exist — Consequences for language description and typology", in *Linguistic Typology* 11, p. 119-32.
———— (2008a), "Frequency vs. iconicity in explaining grammatical asymmetries", in *Cognitive Linguistics* 19/1, p. 1-33.
———— (2008b), "Creating economical morphosyntactic patterns in language change", in J. Good (ed.), *Language universals and language change*, Oxford, Oxford University Press, p. 185-214.
———— (2010), "Comparative concepts and descriptive categories in crosslinguistic studies", in *Language* 86/3, p. 663-687.
Haviland, J.B. (1993), "The syntax of Tzotzil auxiliaries and directionals: the grammaticalization of 'motion'", in *Proceedings of the Nineteenth Annual Meeting of the Berkeley Linguistics Society: Special Session on Syntactic Issues in Native American Languages*, p. 35-49.
Heine, B, U. Claudi & Fr. Hünnemeyer (1991), *Grammaticalization: A Conceptual Framework*, Chicago, University of Chicago Press.
Heine, B. & T. Kuteva (2002), *World lexicon of grammaticalization*, Cambridge, Cambridge University Press.
Heine, B. & M. Reh (1984), *Grammaticalization and Reanalysis in African Languages*, Hamburg, H. Buske.
Hever, Y. (forthcoming), "Future tense construction in Chaha", 16 p.
Hilpert, M. (2008a), *Germanic future constructions. A usage-based approach to language change*, Amsterdam /Philadelphia, John Benjamins (Constructional Approaches to Languages 7).
———— (2008b), "Where did this future construction come from? The case of Swedish *komma att V*", in Bergs & Diewald (eds.), *Constructions and Language Change*. Berlin/New York, Mouton de Gruyter, p. 105-129.
Himmelmann, N.P. (2004), "Lexicalization and grammaticalization: Opposite or orthogonal?", in W. Bisang, N.P. Himmelmann & B. Wiemer, p. 21-42.
Hopper, P.J. & El.Cl.Traugott, (2003), *Grammaticalization*, 2nd ed., Cambridge, Cambridge University Press.
Howard, K. (2000). "The notion of current relevance in the Thai perfect", in *Linguistics* 38/2, p. 373-407.
Jara Yupanqui, M. (2006), *The use of the Preterite and the Present Perfect in the Spanish of Lima*, University of Pittsburg, Ph.D. Thesis.
Jespersen, O. (1949a), *A modern English grammar on historical principles (Part III: Syntax. Second Volume)*, London/Copenhagen.
———— (1949b), *A modern English grammar on historical principles (Part IV: Syntax. Third Volume: Time and tense)*, London/Copenhagen.
Keller, Rudi (1994), *On language change: The invisible hand in language*, London/New York, Routledge.
Kiparsky, P. (forthcoming), "Grammaticalization as optimization", available online.
Kitchen, K.A. (1979), *Ramesside Inscriptions. Historical and Biographical*, vol. 2, Oxford, Blackwell.
———— (1989), *Ramesside Inscriptions. Historical and Biographical*, vol. 7, Oxford, Blackwell.
Koch, R. (1990), *Die Erzählung des Sinuhe*, Brussels, Fondation Égyptologique Reine Élisabeth (Bibliotheca Aegyptiaca 17).

Kroeber, B. (1970), *Die Neuägyptizismen vor der Amarnazeit. Studien zur Entwicklung der ägyptischen Sprache vom Mittleren zum Neuen Reich*, diss. Tübingen.

Kruchten, J.-M. (2010), "Les serments des stèles frontières d'Akhénaton. Origine du Futur III & dynamique de l'apparition et de l'extension de l'auxiliaire *iri*", in *Lingua Aegyptia* 18, p. 131-167.

Kuteva, T. (2004), *Auxiliation: An enquiry into the nature of grammaticalization*, Oxford, Oxford University Press.

Labov, W. (1994), *Principles of linguistic change*, Volume 1: *Internal factors*, Oxford, Blackwell.

Langacker, R.W. (1999), "Losing Control: Grammaticalization, Subjectification, and Transparency", in A. Blank & P. Koch (eds.), *Historical Semantics and Cognition*, Berlin/New York, Mouton de Gruyter (Cognitive Linguistics Research 13), p. 147-175.

Lange, H.O. & H. Schäfer (1902). *Catalogue général des antiquités égyptiennes du musée du Caire, n^os^ 20001-20780. Grab- und Denksteine des Mittleren Reichs*, Theil IV, Berlin, Reichsdruckerei.

Lansari, L. (2009), *Linguistique contrastive et traduction. Les périphrases verbales* aller + infinitif et *be going to*, Paris Ophrys.

Layton, B. (2000), *A Coptic grammar, With chrestomathy and glossary. Sahidic dialect*, Wiesbaden, Harrassowitz (Porta Linguarum Orientalium 20).

Lazard, G. (2005), "What are the typologists doing?", in Z. Frajzyngier, A. Hodges & D.S. Rodd (eds.), *Linguistic diversity and language theories*, Amsterdam/Philadelphia, John Benjamins, p. 1-23.

———— (2006), *La quête des invariants interlangues. La linguistique est-elle une science ?*, Paris, Champion.

Lehmann, Chr. (1995), *Thoughts on grammaticalization: A programmatic sketch*, 2nd ed., München, Lincom.

Leslau, W. (1969), "Frequency as a determinant of linguistic changes in the Ethiopian languages", in *Word* 25, p. 180-189.

Letoublon, Fr. (1983), "Les verbes de mouvement et l'auxiliarité en latin", in *Glotta* 61, p. 218–228.

———— (1984), "Il vient de pleuvoir, il va faire beau. Verbes de mouvement et auxiliaires", in *Zeitschrift für französische Sprache und Literatur* 94/1, p. 25-41.

Li, Ch.N. & Thompson, S.A. (1989), *Mandarin Chinese: A Functional Reference Grammar*, University of California Press

Lightfoot, D. (1991), *How to set parameters: Arguments from language change*, Cambridge MA, MIT Press.

Lindblom, Bj., P. MacNeilage & M. Studdert-Kennedy (1984), "Self-organizing processes and the explanation of language universals", in B. Butterworth, B. Comrie & O. Dahl (eds.), *Explanations for language universals*, Berlin/New York. Mouton de Gruyter, 181-203.

Linblom, Bj., S. Guion, S. Hura, S.-J. Moon & R. Willerman (1995), "Is Sound Change Adaptive?", in *Rivista di Linguistica* 7/1, p. 5-37.

López-Couso, M.J. & El. Seoane [eds.] (2008), *Rethinking grammaticalization. New Perspectives*, Amsterdam/ Philadelphia, John Benjamins (Typological Studies in Language 76).

————. 1982. "Deixis and subjectivity: *Loquor, ergo sum?*", in R.J. Jarvella & W. Klein (eds.), *Speech, Place, and Action: Studies in Deixis and Related Topics*, Chichester/New York, John Wiley, p. 101-124.

Loprieno, A. (1995), *Ancient Egyptian. A linguistic introduction*, Cambridge, Cambridge University Press.

Malaise, M. & J. Winand (1999), *Grammaire raisonnée de l'égyptien classique*, Liège (= Ægyptiaca Leodiensia 6).

Malchukov, A.L. (2010), "Analyzing semantic maps: A multifactorial approach", in *Linguistic Discovery* 8/1, p. 176-198.

Marchese, L. (1986), *Tense/aspect and the development of auxiliaries in Kru languages*, Arlington, Summer Institute of Linguistics (Publications in linguistics 78).

Maslova, E. (2003), *A Grammar of Kolyma Yukaghir*, Berlin, Mouton de Gruyter.

Mathieu, B. (2008), *La poésie amoureuse de l'Égypte ancienne. Recherche sur un genre littéraire au Nouvel Empire*, 2nd ed., Cairo, Institut Français d'Archéologie Orientale (Bibliothèque d'Études 115).

Meir, I. (1999), "A perfect marker in Israeli Sign Language", in *Sign Language and Linguistics* 2/1, p. 41-60.

Milne, L. (1921), *An elementary Palaung grammar*, Oxford,Clarendon Press.

Moosegaard Hansen, M.-Br. (2008), *Particles at the semantics/pragmatics interface: Synchronic and diachronic issues. A study with special reference to the French phasal adverbs*, Amsterdam, Elsevier.

Mufwene, S.S. (2004), *The ecology of language evolution*, Cambridge, Cambridge University Press (Cambridge Approaches to Language Contact).

Narrog, H. (2005), "Modality, mood, and change of modal meanings – a new perspective", in *Cognitive Linguistics* 16, p. 677-731.

———— (2007), "Modality and grammaticalization in Japanese", in *Journal of Historical Pragmatics* 8, p. 269-294.

———— (2010), "(Inter)subjectification in the domain of modality and mood – Concepts and cross-linguistic realities, in Kr. Davidse et al. (ed.), p. 385-429.
Nicolle, St. (2007), "The grammaticalization of tense markers: A pragmatic reanalysis", in *Cahiers Chronos* 17, p. 47-65.
Normand, Cl. (1986), "Les termes de l'énonciation de Benveniste", in *Histoire Épistémologie Langage* 8/2, p. 191-206.
Ohala, J.J. (1981), "The listener as the source of sound change", in C. Masek, R.A. Hendrick & M.F. Miller (eds), *Papers from the parasession on language and behavior*, Chicago, Chicago Linguistic Institute, p. 178-203.
———— (1993), "The phonetics of sound change", in C. Jones (ed.), *Historical Linguistics: Problems and Perspectives*, London, Longman, p. 237-278.
Parkinson, R.B. (1991), *The Tale of the Eloquent Peasant*, Oxford, Griffith Institute.
Pfau, R. & M. Steinbach (2006), "Modality-independent and modality-specific aspects of grammaticalization in sign languages", in *Linguistics in Potsdam* 24, p. 5-98.
Pichon, E. (1933), "De l'accession du verbe « aller » à l'auxiliarité en français", in *Revue de philologie française* 45, p. 65-108.
Polis, St. (2006), "Les relations entre futur et modalité déontique. À propos des sens du futur III en néo-égyptien", in *Lingua Aegyptia* 14, p. 233-250.
Polotsky (1976), "Les transpositions du verbe en égyptien classique", in *Isreal Oriental Studies* 6, p. 1-50.
A.G. Ramat, O. Carruba & G. Bernini [eds.] (1987), *Papers from the 7th International Conference on Historical Linguistics*, Amsterdam/Philadelphia, John Benjamins.
Raz, Shl. (1983), *Tigre grammar and texts*, Malibu, Undena Publications.
Rice, S. & K. Kabata (2007), "Crosslinguistic grammaticalization patterns of the ALLATIVE", in *Linguistic Typology* 11/3, p. 451-514.
Romeo, N. (2008), *Aspect in Burmese: Meaning and Function*, Amsterdam/Philadelphia, John Benjamins (Studies in Language Companion Series 96).
Rowlands, E.C. (1969), *Teach yourself Yoruba*, London, Hodder & Stoughton.
Rubba, J. (1994), "Grammaticalization as semantic change: A case study of preposition development", in W. Pagliuca (ed.), *Perspectives on Grammaticalization*, Amsterdam/Philadelphia, John Benjamins (Current Issues in Linguistic Theories 109), p. 81-101.
Sapir, Ed. (1921), *Language: An introduction to the study of speech*, New York.
Satzinger, H. (2002), "The Egyptian connection: Egyptian and the Semitic languages", in *Israel Oriental Studies* 20, p. 227-264.
Schmidtke-Bode, K. (2009), *A typology of purpose clauses*, Amsterdam/Philadelphia, John Benjamins (Typological Studies in Language 88).
Schuchardt, H. (1885), *Ueber die Lautgesetze: Gegen die Junggrammatiker*, Berlin, Robert Oppenheimer.
Schwenter, Sc.A. & R. Waltereit (2010), Presupposition accommodation and language change", in Davidse et al. (eds.), p. 75-102.
Shisha-Halevy, A. (2000), "Stability in clausal/phrasal pattern constituent sequencing: 4000 years of Egyptian (with some theoretical reflections, also on Celtic), in R. Sornicola, E. Poppe & A. Shisha-Halevy (eds.), *Stability, variation and change of word-order over time*, Amsterdam/Philadelphia, John Benjamins (Amsterdam Issues in Linguistic Theory and History of Linguistic Science 213).
Stein, D. & S. Wright [eds.] (1995), *Subjectivity and Subjectivisation: Linguistic Perspectives*, Cambridge, Cambridge University Press.
Sethe, K. (1933), *Urkunden des alten Reichs I*, 2nd ed., Leipzig.
Silverman, D.D. (2011), "Usage-Based Phonology", in N.C. Kula, B. Botma & K. Nasukawa (eds.), *The Continuum companion to phonology*, London/New York, p. 369-393.
Stathi, K., E. Gehweiler & E. König (eds.), *Grammaticalization: Current views and issues*, Amsterdam/ Philadelphia, John Benjamins (Studies in language companion series 119), p. 181-219.
Steinbach, M. & R. Pfau (2007), "Grammaticalization of auxiliaries in sign languages". P.M. Perniss, R. Pfau & M. Steinbach (eds.), *Visible variation: Comparative studies on sign language structure*, Berlin/New York, Mouton de Gruyter (Trends in Linguistics), p. 303-339.
Sun, Ch. (1996), *Word order change and grammaticalization in the history of Chinese*, Stanford University Press.
Sweetser, E.E. (1988), "Grammaticalization and semantic bleaching", in *Berkeley Linguistic Society* 14, p. 389-405.
Taine-Cheikh, C. (2004), "Le(s) futur(s) en arabe. Réflexions pour une typologie", in *Estudias de dialectología norteafricana y andalusí* 8, p. 215-238.

————. (2009), “Les morphèmes du futur en arabe et en berbère. Réflexions pour un typologie”, in *Faits de langues* 33, p. 91-102.
Traugott, E.Cl. (1978), “On the expression of spatio-temporal relations in language”, in J. Greenberg (ed.), *Universals of Human Language*, vol. 3. Stanford, Stanford University Press, p. 369-400.
———— (1989), “On the rise of epistemic meanings in English: An example of subjectification and semantic change”, in *Language* 57, p. 33-65.
———— (1995), “Subjectification in Grammaticalization”, in D. Stein & S. Wright (eds.), p. 31-54.
———— (2003), “From subjectification to intersubjectification”, in R. Hickey (ed.), *Motives for language Change*, Cambridge, Cambridge University Press, p. 124-139.
———— (2007), “(Inter)subjectification and unidirectionality”, in *Journal of historical pragmatics* 8, p. 295-309.
———— (2010), “(Inter)subjectivity and (inter)subjectification: A reassessment”, in K. Davidse et al. (eds.), p. 29-71.
Traugott, E.Cl. & R.B. Dasher (2002), *Regularity in Semantic Change*, Cambridge, Cambridge University Press (Cambridge Studies in Linguistics 97).
Traugott, E.Cl. & B. Heine [eds.] (1991), *Approaches to Grammaticalization*, 2 vol., Amsterdam/philadelphia, John Benjamins (= Typological Studies in Language 19).
Traugott, E.Cl. & E. König (1991), “The semantics-pragmatics of grammaticalization revisited”, in Traugott & Heine (eds.), p. 181-218.
Traugott, E.Cl. & Gr. Trousdale [eds.] (2010a), *Gradience, gradualness and grammaticalization*, Amsterdam/philadelphia (= Typological Studies in Language 90).
Traugott, E.Cl. & Gr. Trousdale (2010b), “Gradience, gradualness and grammaticalization. How do they intersect?”, in Traugott & Trousdale (eds.), p. 1-18.
Trousdale, Gr. (2010), “Issues in constructional approaches to grammaticalization in English”, in K. Stathi, E. Gehweiler & E. König (eds.), p. 51-71.
Trousdale, Gr. & E.Cl. Traugott (2010), “Preface”, in Traugott & Trousdale (eds.), p. 1-18.
Tylor, J.J. & Griffith, F.Ll. (1894), *The tomb of Paheri at El Kab*, London (Egypt Exploration Found 11).
Vergote, J. (1973-1983), *Grammaire copte*, 2 vol., Leuven.
Vernus, P. (1987), “L’instance de la narration dans les phases anciennes de l’égyptien”, in *Discussions in Egyptology* 9, p. 97-111.
———— (1988), “L’égypto-copte”, in *Les langues dans le monde ancien et moderne. Troisième partie : les langues chamito-sémitiques. Textes réunis par David Cohen*, p. 161-206.
———— (1990), *Future at Issue. Tense, Mood and Aspect in Middle Egyptian: Studies in Syntax and Semantics*, New Haven (Yale Egyptological Studies 4).
———— (2010), “Situation de l’égyptien dans les langues du monde”, in Fr.-X. Fauvelle-Aymar, J.-P. Chrétien & Cl.H. Perrot (eds.), *Afrocentrismes : l’histoire des Africains entre Égypte et Amériques*, p. 171-212.
Véronique, G.D. (2009), “L’expression du futur dans les français créoles”, in *Faits de langues* 33, p. 37-45.
Warner, A. (1993), *English auxiliaries: Structure and history*, Cambridge, Cambridge University Press.
Welmer, W.E. (1973), *African language structures*, Berkeley, University of California Press.
Winand, J. (1992), *Études de néo-égyptien, 1. La morphologie verbale*, Liège, CIPL (= Aegyptiaca Leodiensia 2).
———— (1996), “Les constructions analogiques du futur 3 en néo-égyptien”, in *Revue d’Égyptologie* 47, p. 117-145.
———— (2006), *Temps et aspect en égyptien. Une approche sémantique*, Leiden/Boston, Brill (Probleme der Ägyptologie 25).
Zipf, G.K. (1935), *The psychobiology of Language*, Boston, Houghton Mifflin.