Is gesture subject to grammaticalization?

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1. Introduction[1]

Traditionally, linguistics has mainly focused on written language. In recent decades, however, spoken interaction has started to receive increasing attention. This growing interest for spontaneous speech coincides with the insight that communication is more than what is expressed verbally: other semiotic channels, such as gesture, posture, and gaze, are an integral part of communication just as much as verbal expression is (e.g. Schmitt 2005). Some scholars have even claimed that gesture simply is a part of language, in other words that gestures are linguistic elements just like words (e.g. McNeill 1992, Weinrich 1992, Kendon 1997).

In view of this observation, it seems justified to raise the question whether and to what extent gesture and speech show the same patterns and are subject to the same restrictions and diachronic development. In this paper, this question will be raised for the phenomenon of grammaticalization. After a brief introduction to the concept of grammaticalization in visual modes (§2), two German gestures – one manual and one non-manual – which may well have grammaticalized will be presented (§3). By verifying to what extent the traditional grammaticalization parameters do apply to these phenomena (§4), it will be argued that the idea of gesture grammaticalization is at least worth pursuing (§5).

Before moving on to the argumentation, however, an important caveat has to be mentioned. Gesture analysis as such has a long-standing tradition (Müller 1998),

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but it is only recently that technical developments have made possible the use of video recordings for gesture studies. As a consequence, all available video materials are of a rather recent date, which seriously limits the possibilities of doing in-depth diachronic gesture research at this point. Grammaticalization is, however, a diachronic process. For the most part, it is possible to make inferences about the development on the basis of the synchronic situation, but in some respects, for lack of diachronic data, the analysis has to remain hypothetical. Therefore, the question whether gesture shows grammaticalization cannot receive a final answer at this point, although it is possible (as will be shown in the following) to offer an interesting onset.

2.   Visual grammaticalization

The idea of grammaticalization in the visual modes of communication may seem surprising at first sight. On closer inspection, however, it turns out not to be all that uncommon. Sign language research has shown, for instance, that grammaticalization patterns corresponding to those attested in spoken languages can be found in signed languages as well (e.g. Pfau & Steinbach 2006; 2011). A typical example is the development of a motion verb into a marker of futurity, just like *be going to* in English and *aller* in French, as in American Sign Language (cp. Janzen & Shaffer 2002). On a different level, the notion of grammaticalization is also used to refer to the development whereby a gesture enters the system of a sign language as a grammatical marker (e.g. Pfau & Steinbach 2006; 2011; Wilcox 2004). Examples include pointing gestures becoming pronouns and gestures of negation becoming signs of negation (Pfau & Steinbach 2011).

The latter examples are cases of gestures undergoing a process of grammaticalization. However, by this process, they also enter the domain of sign languages. In the present paper, however, the focus is on developments within the domain of gesture, so without gestures becoming signs. The question at stake is whether within this domain as well, there are developments which correspond to what is called 'grammaticalization' at the verbal level.[2]

In order to answer this question, it first of all has to be clear what exactly is meant by the notion of 'gesture'. Following Calbris (2011:6), gesture is here defined as "the visible movement of any body part consciously or unconsciously made with the intention of communicating while speech is being produced." This definition contains three elements which are important for the rest of the discussion. First, gestures are 'co-verbal' ("while speech is being produced").

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[2] This formulation is not unimportant, as there still is some discussion about the exact scope of the notion of 'grammaticalization' at the verbal level as well; cp. §5 below.

This is to distinguish them from signs, which are not normally accompanied by speech (but note that gestures can of course be realized during pauses in speech and still be considered as co-verbal). Second, and perhaps less explicitly indicated in Calbris's words: the notion of gestures includes emblems, i.e. gestures which resemble signs in that they display a conventionalized form-meaning relation and can be understood as such, without reference to the accompanying speech. Typical examples from Western-European cultures include head nods ('yes') and shakes ('no'), thumb up ('excellent'), index finger in front of the mouth ('shush'), and the like. Finally, in contrast to Müller's (1998) view, the notion of 'gesture' is not restricted to hand and arm movements: it includes movements made with other body parts (especially the head) as well.

3.   Examples

After having delineated the domain of gesture, a next step involves determining what kinds of developments are at stake when thinking of grammaticalization within this domain. Two examples will be discussed in the following, one non-manual (the pragmatic headshake, §3.1) and one manual (the so-called intersubjective deictic, §3.2). Not surprisingly, these two gestures belong to the domain of what Bavelas et al. (1992) have termed interactive gestures. Indeed, put bluntly, grammaticalization goes from more lexical to more grammatical or to more pragmatic meanings, and precisely the latter is the domain of interactive (as opposed to topic) gestures. More precisely, the two gestures are situated in the domain of downtoning. Following Waltereit (2006:62), 'downtoning' is understood as the modification of the utterance in view of the hearer's reaction. This is done by adding an (inter)subjective nuance or by indicating a context relation. For instance, in the case of the gestures under investigation, the interlocutor is expected to agree, as (putting it bluntly) the gestures mark 'subjective obviousness' and givenness of the information, respectively.

3.1.   *The pragmatic headshake*

A first example is the pragmatic-modalizing headshake. In Western-European cultures, the headshake is basically an emblem of negation. However, it has been shown for e.g. English (Kendon 2002; McClave 2000) and German (Schoonjans et al. forthc.) that a headshake can also be produced with an utterance for purposes of downtoning (= the pragmatic-modalizing use). In that respect, it resembles particles such as English *simply*, German *einfach* or Dutch *gewoonweg*. The function of these particles is described in the literature (e.g. Thurmair 1989:132) as expressing 'subjective obviousness', which corresponds to paraphrases such as 'there is nothing more to say about it' or 'I do not see how

it could be otherwise'. Interestingly, these paraphrases contain negations, and it is also to such paraphrases that Kendon (2002) refers in his analysis of pragmatic headshakes in English. He claims that there is an "implied negative" (Kendon 2002:173), and hence suggests – albeit not in these terms – that the pragmatic headshake is actually a kind of grammaticalized negation. The idea would thus be that the pragmatic-modalizing headshake has developed from the emblematic-negating headshake through a process of grammaticalization (cp. Schoonjans et al. forthc. on German).

Figure 1 (taken from Schoonjans et al. forthc.) shows the beginning of such a pragmatic headshake (i.e., just the first left-right-left movement is shown, whereas the head is mostly moved back and forth several times); the line underneath is the verbal turn accompanying the gesture. As the pragmatic headshake is usually (and also in this case) rather subtle, white lines have been added to the stills to make it more clearly visible.

Figure 1: Pragmatic headshake

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und äh christoph stephan hAt {das einfach nur verDIENT und;}3
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        'And erm... Christoph Stephan simply deserves it and...'
[context: Christoph Stephan has just taken his first ever biathlon world cup win]

3.2. *The intersubjective deictic*

The so-called interactive or intersubjective deictic (Figure 2), on the other hand, is a pointing gesture directed at the interlocutor and often made with the flat hand. It differs from traditional referential deictics in that its function is not to identify the referent of some entity mentioned in speech (e.g. the referent of a second-person pronoun), but rather to refer to the hearer as a communication partner. It thus has a more interactive function, related in particular to

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[3] The transcript lines are made following the GAT2 conventions (Selting et al. 2009). The duration of the gesture is marked by braces; the so-called stroke and stroke hold are underlined. As shown in this example, downtoning gestures can co-occur with particles with related meanings, but since they have express the downtoning meaning themselves, they can also be used without a lexical affiliate.

interpersonal agreement. Its function can typically be described by paraphrases such as 'as you know', 'as you said', or 'as you will probably agree'.

Figure 2: Intersubjective deictic

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{im SALZkammergut da kann man gut lUstig} sein;
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'Salzkammergut is a good place for having fun.'

This is not to say, however, that the intersubjective deictic is fully free of any referential function: it still singles out the relevant communication partner who is supposed to agree. This is not surprising as such, as it can be assumed that the intersubjective deictic has developed from referential deictics. Interestingly, such a development from deictic to agreement marker is not exceptional: van der Wal (2013) has described such a development for the African language Makhuwa, and the German modal particles *ja* and *doch*, which express meanings similar to the ones of the intersubjective deictic, have deictic origins as well (Hentschel 1986). There thus seems to be an interesting parallel in the evolution of deictics at the verbal and the gestural level.

4.   Applying grammaticalization parameters

4.1. *Introduction*
A key question in determining whether the two focus examples in this paper are cases of grammaticalized gestures, is to what extent the traditional defining features of grammaticalization can be observed here as well. Pursuing this question is the goal of the present section.

A central element in the traditional definitions of grammaticalization as proposed by e.g. Meillet (1912) and Kuryłowycz (1965) is that the element undergoing grammaticalization acquires a more grammatical nature. Whether this is the case for the gestures under investigation is not straightforward, as both the intersubjective deictic and the pragmatic headshake are situated in the domain of downtoning, i.e. a domain of pragmatic nuancing. Referring to the verbal

German downtoners par excellence, modal particles, Diewald (1997) indicates that they fulfill a grammatical function, whereas Molnár (2008) claims that they are pragmatic and not grammatical elements and hence that an analysis in terms of grammaticalization is to be rejected. On the other hand, one may wonder what a 'grammatical gesture' may come down to. For reasons of space, it is not possible to go into this here, but it is an issue to be dealt with in order to determine the grammatical nature of gesture.

Whatever the case, recent developments in grammaticalization research have shown that the acquisition of a more grammatical nature is not the only development at stake in grammaticalization processes. Scholars such as Hopper (1991) and Lehmann (1995) have proposed a number of parameters or features which are typical of grammaticalization. It thus seems worthwhile to verify to what extent they apply.

4.2. *Formal and semantic changes*

One of the classical features of grammaticalization is erosion, or formal attrition. To what extent this applies to the deictic is hard to tell, but in the case of the headshake, there may be erosion in that the pragmatic headshakes are usually rather subtle (cp. §3) and in that respect seem to have a smaller amplitude than the negating ones. Further verification is needed, however, to see how systematic this tendency is.[4] The closely related feature of coalescence is even harder to apply to the visual modes of communication: there are hardly any cases of coalescence in sign languages (cp. Pfau & Steinbach 2011:689), and it seems equally hard to describe coalescence for gesture. Therefore, this feature will not be discussed any further here.

At the meaning side of grammaticalization, there is attrition as well, under the form of desemanticization, as part of a triad with persistence (or retention) and extension (or enrichment). This threefold interaction can be distinguished in the gestures under discussion. As for the headshake, recall that it is no longer purely negating (attrition), but that there still is some implied negative in the paraphrases (retention).[5] On the other hand, the pragmatic nuance of subjective obviousness was not yet as clearly present in the negating headshake as it is in

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[4] Note that even if it can be shown that the pragmatic headshake has a smaller amplitude, this does not prove that it is an eroded variant of the negating headshake. Theoretically, it could also be that the latter has become intensified. For lack of diachronic data (cp. §1), this question cannot be answered univocally, but given the general course of evolutions in language, the erosion analysis may well be the more plausible one.

[5] Note that the emblematic-negating headshake can negate the utterance it accompanies, but it can also co-occur with a positive utterance if it contradicts (hence, negates) a previous one or a claim which is implicitly present in the context. It is the latter aspect of negation that shimmers through in this case.

the pragmatic one (extension). Similarly, the intersubjective deictic is no longer in the first place referential, although there still is something referential to it (cp. §3), but it has acquired an agreement-related downtoning function.

Closely related to the meaning of a form is its scope. Typical for grammaticalization is condensation, or scope reduction. Recall, however, that the gestures under investigation function within the domain of downtoning. A typical feature of downtoning elements is that they have scope over the entire turn-construction unit or even the entire turn they occur with, and this is not different for downtoning gestures (cp. Schoonjans et al. forthc.). Therefore, given the particular domain of the analysis, there cannot have been scope reduction in the course of the grammaticalization process.[6]

Together with the changes at both form and meaning level, grammaticalizing elements usually shift to another category, which means that they gradually loose a number of properties of the source category. This decategorization can most easily be illustrated by referring to the headshake: the pragmatic-modalizing headshake can no longer be considered as a true emblem, unlike the emblematic-negating headshake. Indeed, the most typical feature (and actually the main defining one) of emblems is that they can be understood without context or accompanying speech, which is not the case anymore for the pragmatic headshake given its more subtle and context-sensitive meaning (cp. Schoonjans et al. forthc.). There may be some persistence at this level as well (decategorization is gradual), but still the pragmatic headshake is not a real emblem anymore.

4.3. *Frequency-related changes*

In grammaticalization, the changes described so far typically go together with an extension of the form's usage, in that it is used more frequently and in more different contexts. The latter development, sometimes referred to as 'expansion', can be shown for the gestures under investigation: the pragmatic headshake is nowadays also used in contexts where there is nothing to be negated, and the intersubjective deictic occurs in contexts in which there is no second person pronoun the referent of which is to be identified. Whether the gestures have also become more frequent is hard to tell on the basis of the purely synchronic data available, but given the expansion just mentioned the frequency rates have probably gone up as well.

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[6] Note, for that matter, that Norde (2012:105) actually indicates that "the parameter of scope is of little use, because there does not appear to be a preferred direction in scope change in either grammaticalization or degrammaticalization." Another issue is whether one should look at scope over the verbal utterance or over other gestures accompanying it. However, since downtoning implies a broad scope, there cannot have been any condensation, irrespective of whether it is defined with regard to the verbal utterance or with regard to other gestures.

If an element becomes more frequent by grammaticalization, this is not only due to expansion, however: another reason is that the original use of the form often continues to exist next to the new variant. This divergence, as it is called, is undeniably present in the case of the gestures under investigation: the negating headshake and the referential deictic still exist to date. Whether the gestures also display layering[7], a feature which is often mentioned together with divergence, is less straightforward. It is harder indeed to show layering effects within the domain of gesture – although on the basis of analyses such as Müller (2004), one might think of a layering relationship between the intersubjective deictic and the so-called offering conduit metaphor gesture, but going into this issue would take us too far here. Considering language as a whole and taking into account other semiotic channels, on the other hand, layering is clear, as the downtoning nuances conveyed by the gestures can also be expressed by means of verbal elements, e.g. the modal particles mentioned in §3. It remains to be clarified, however, to what extent it is advisable to take this into account for the study of gesture grammaticalization.

4.4. *Rule-based behavior*

A similar picture is found for fixation (i.e. loss of syntactic mobility), as the question arises how to establish what this comes down to for gesture: do we consider fixation with regard to other gestures or with regard to particular verbal elements? Fixation with regard to other gestures may be hard to determine at this point, however. As for the latter option, on the other hand (fixation with regard to the verbal utterance), there are some tendencies related to McNeill's (1992) synchrony rules: the gestures tend to overlap with the main stress of the accompanying turn as well as with the so-called lexical affiliate (i.e. the corresponding verbal element, in this case typically a modal particle), if there is one, and their duration is influenced by their scope at the verbal level (cp. Harrison 2010). However, these are tendencies which are thought to hold for gestures in general, which implies that they also applied before the grammaticalization started. It cannot be excluded that these tendencies have grown stronger in the course of the grammaticalization process, but further investigation is needed to see if this is the case, i.e. if there has indeed been an increase in fixation.

As for obligatorification and specialization, the data do not show any clear tendencies for the gestures under investigation. At most, one could again resort

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[7] The term 'layering' is used here in its traditional sense, referring to the phenomenon that languages have at their disposal different techniques to convey meanings in one functional domain. Saying that gestures display layering thus means that the gestures are (or become) just one of several techniques in a particular domain.

to the verbal level and think of obligatorification in the sense that there are strong correlations in the use together with[8] the corresponding verbal particles (cp. Schoonjans et al. forthc., who speak of 'multimodal particles'), but apart from that, no clear tendencies seem to present themselves at this point.

The final feature of grammaticalization to be dealt with, paradigmatization, is equally problematic, but for another reason: it first of all has to be made clear what is meant by the notion of 'paradigm', and which category is at stake. Given the fact that both gestures under investigation function within the domain of downtoning, it seems legitimate to think of a category of downtoning gestures. Applying the definition of a paradigm proposed by Brünjes (2011) to this category, it turns out that it has something paradigm-like but is not a true full-fledged paradigm. Brünjes proposes to speak of a paradigm when

> the paradigm members form a closed class with a common grammatical function and formal similarities. The different values are specifications of the common function, are in opposition to each other, are (mostly) organized in subcategories and centred [sic!] around one formally and semantically unmarked value. The realization of the paradigm is obligatory.

Some of these defining features do apply to the group of downtoning gestures. Indeed, the member elements (i.e. the gestures under investigation) are in opposition relations to each other while their individual functions are specifications of the general paradigm function (in this case: downtoning). The issue whether downtoning can be considered as a grammatical function has been discussed above (§4.1); like Diewald (1997), Brünjes claims it is, so this criterion is also met.[9] However, other features of Brünjes's definition do not straightforwardly apply: it is not clear at this point to what extent the downtoning gestures constitute a closed class and to what extent they share formal features, and the obligatory realization mentioned by Brünjes is not found with the gestures (cp. above). Therefore, at this point, some reluctance in calling the category of downtoning gestures a fully-fledged paradigm seems advisable.

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[8] This wording 'together with' does not necessarily imply temporal concurrence (gesture and particle co-occurring at the same point in the utterance); hence, the fixation tendencies described above do not follow from this potential obligatorification.

[9] Note that Brünjes actually proposes this definition as the definition of a "*grammatical* paradigm" (emphasis added), which of course requires the member elements to have a grammatical nature. On the other hand, if one considers downtoners to be pragmatic rather than grammatical, one may also wonder whether they would not constitute a pragmatic paradigm (which would only differ from a grammatical paradigm in that the elements have a pragmatic rather than a grammatical function). However, this discussion goes beyond the scope of the present paper.

5. Gesture grammaticalization?

It should thus be clear that the answer to the question whether we are dealing with gesture grammaticalization is not straightforward: as summarized in Table 1, the developments at stake show most of the typical features of grammaticalization, but there are other features which they do not display (or at least not as clearly). Therefore, a comparison with other non-prototypical grammaticalization pathways seems to be a valuable approach to come to an answer. Since the gestures under investigation are situated within the domain of downtoning, the development of the verbal downtoners par excellence for German, modal particles, presents itself as an appropriate comparatum.

Table 1 gives an overview of the relevant features and parameters of grammaticalization and their application to downtoning gestures and modal particles (note that coalescence has been left out because of its not being applicable to gesture, cp. §4). As the data in the table show, not only do both developments display most features of grammaticalization, but more importantly, they share the same values for all features except two.

	gestures	particles
grammatical elements	+/-	+/-
erosion	+	+
(fixation	?	+/-)
decategorization	+	+
desemanticization	+	+
retention	+	+
meaning extension	+	+
condensation	-	-
obligatorification	-	-
paradigmatization	+/-	+(/-)
divergence	+	+
layering	+	+
frequency increase	+	+
expansion	+	+

Table 1: Grammaticalization features with downtoning gestures and modal particles[10]

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[10] The information about modal particles is based on previous work on particle grammaticalization, including Abraham (1991), Autenrieth (2002,2005), and Diewald (1997). The table of course offers a somewhat simplified image, as not all parameters do apply to the same extent to the evolution of all gestures or all particles; the values indicate some kind of "average" of the categories.

The first exception is situated at the level of fixation. However, as indicated above, fixation could only be defined in relation to the verbal level. This is not problematic as such if we consider language as a whole (i.e. both verbal and kinesic channels), but it remains to be clarified to what extent this is desirable when studying gesture grammaticalization. Therefore, this feature should probably be paid less attention to for the present comparison – which is why it is bracketed in the table.[11]

The other exception is related to paradigmatization. According to Brünjes (2011), modal particles do not constitute a strong paradigm either, although it follows from her analysis that they are more paradigm-like than the downtoning gestures. This is mainly due to one particular aspect of Brünjes's definition of a paradigm: the verbal modal particles show a greater formal resemblance, i.e. they share a considerable amount of formal features. However, it seems that this difference is once again (as with coalescence) due to the different properties of the semiotic channels speech and gesture: verbal elements are likely to resemble each other more than gestures produced with different articulators. Therefore, it seems that once again the importance of the difference between the two evolutions at stake should not be overestimated.

It thus turns out that the development of verbal and gestural downtoners shows notable similarities, the main differences being due to the differences which are inherent to the semiotic channels of speech and gesture. Therefore, in order to determine whether the development of downtoning gestures can be considered a case of grammaticalization, it seems justified to orient to the decision taken in this respect for the development of modal particles. However, whether modal particles can be said to have originated through grammaticalization processes is a matter of discussion. As shown in Table 1, some features of grammaticalization do not apply to modal particles right away, which is why some scholars (e.g. Molnár 2008) are reluctant to speak of grammaticalization. Still most scholars think that, on the basis of the resemblances, it is justified to consider the development of modal particles as a case of grammaticalization anyway, albeit not a prototypical one:

> The grammaticalization of MPs [= modal particles] may thus be a highly specific type, which may not be found to agree in every respect with other types of grammaticalization. (Abraham 1991:375)

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[11] Note that for obligatorification and layering, the only clear examples given above were also related to the verbal level. However, unlike fixation, these features were not defined just with relation to the verbal level, but rather referring to their possibility at the purely gestural level as well, which is why they are not bracketed in the table.

> Though it is not obvious that grammaticalization theory is an adequate framework for modal particles, it can be shown that a wider notion of grammaticalization, as proposed for example by Hopper (1991), is appropriate and profitable for the description of their historical development. (Autenrieth 2005:305)

If the development of modal particles is considered as grammaticalization, and if the corresponding evolution at the gestural level is so similar to it, the only differences being due to the higher-level difference between speech and gesture, it seems worthwhile to at least consider using the notion of 'grammaticalization' for gesture as well.

6. Concluding remarks

In the preceding discussion, the question was raised whether there is such a thing as grammaticalization at the level of gesture. On the basis of the development of intersubjective deictics and pragmatic headshakes in German, it was shown that most of the features and parameters commonly attributed to grammaticalization do indeed apply. Given the close resemblance to the development of modal particles, which is usually seen as a case of grammaticalization, it has been proposed that the gestural development may well be considered as grammaticalization as well.

Still, this answer is not entirely final, as it has been mentioned several times that further investigation and discussion is needed at some points. This is mainly due to a lack of usable diachronic data, making part of the analysis hypothetical, as well as to the fact that some features could only be defined in relation to the verbal level, whereas it still has to be found out if that is not problematic to the issue. Nevertheless, the above argumentation suggests that it is justified and certainly worthwhile to consider the evolutions at stake at the gestural level as cases of grammaticalization.

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