Modal particle meanings:

New insights from gesture research

One of the challenges of modal particle research is the search for appropriate ways to describe the meanings these particles convey. As these meanings are subtle and situated at the abstract and non-propositional level of intersubjective meaning making, the function of the particles is notoriously hard to pin down. As a consequence, scholars also disagree on what the precise relation between different but related particles is. In this paper, I show that gesture analysis can shed new light on these issues. By looking at the gestures used with the German particles denn, ja, doch, eben, einfach, and halt, the paper illustrates how studying gestures can lead to a better understanding of the particles and their mutual relations by showing how gesture data can offer new evidence for existing hypotheses and help in finding a way out of matters of discussion.

1. Modal particle meanings

1.1. Introduction: Modal particles¹

Modal particles (also referred to as downtoning particles or discourse particles) are a typical feature of a number of languages, including German, in which they are frequently used to add an (inter)subjective nuance to an utterance. Most scholars assume that German has some 15-20 modal particles, six of which will be studied in more detail in the following: *denn, doch, eben, einfach, halt*, and *ja*. These particles are illustrated in (1):

(1a) *Ich bin froh, dass der Januar vorbei ist. – Echt? Warum denn?* (FG_B1b)²

‘I’m happy that January is over. – Really? *But* why?’

(1b) *Es sind die Bürger insofern gestärkt, weil ja jedes Dokument jetzt frei im Internet abrufbar ist.* (PR_Schü0811)

‘The position of the citizens has been strengthened to the extent that, *as you know*, each document is now freely available through the internet.’

- (1c) *Ich lach mich doch schief, wenn mir jemand erklären will, dass Abgeordneter Pilz wirklich untersuchen wollte. Dem war doch völlig Wurst, was zu untersuchen war!* (PR_West2911)

‘I can’t help laughing when someone tries to tell me that Deputy Pilz really wanted to investigate. *As you know*, he couldn’t care less about what was to be investigated!’

- (1d) *Die EU wird handlungsfähiger [...] wenn auch aufgrund der polnischen Interventionen erst in zehn Jahren, aber so ist eben europäische Politik, dass es manchmal sehr lange dauert.* (PR_VDB0811)

‘The EU becomes more capable of acting [...] albeit only in ten years from now because of the Polish interventions, but that’s *just* the way things go in European politics, it may sometimes take quite some time.’

- (1e) *Wäre sie jetzt während der Operation gestorben, dann wäre es halt Schicksal gewesen.* (FG_B2a)

‘If she had died during the operation, it would *only* have been her destiny.’

- (1f) *Wir wollen die Neutralität weiterhin bewahrt wissen; das ist uns einfach ein wichtiges Thema.* (FG_Strac3010)

‘We want to stay neutral; that *simply* is an important thing to us.’

It is important to note that these lexical elements can also be used with other functions (e.g. as adverbs or conjunctions). In the following, however, only the modal particle uses illustrated in (1) are taken into account. As modal particles, these elements are uninflected, typically unstressed and typically situated in the so-called middle field of the clause (i.e., between the finite and the infinite verb in main clauses, or between the conjunction and the verb in subordinate clauses). The focus of this paper is not on these formal features of

modal/discourse/downtoning particles, however, but rather on their meaning or function. As the labels for this word class suggest, the effect of these particles is situated at the discursive level, and more precisely in the areas of modality and downtoning. In line with more general theories on downtoning such as the one presented by Waltereit (2006), ‘downtoning’ is understood as the expression of a subjective or intersubjective nuance, for instance an indication of the speaker’s take on what he is saying, on the interlocutor’s alleged knowledge or state of mind, or on how the interlocutor is expected to react (note that, unlike what the term ‘downtoning’ may suggest, this does not necessarily mean downplaying, softening, or weakening).

This can be illustrated by referring to the examples in (1). The function of *denn*, for instance, is to indicate that the speaker asks the question because of something astonishing or unexpected in the speech situation. Typically, this source of astonishment is the previous utterance, as in (1a), where the speaker had not expected the interlocutor to be happy that January is over. The particles *ja* and *doch* both indicate that the speaker thinks that the content of the utterance is actually part of the common ground, i.e. that the hearer already knows it, or at least that the speaker does not expect the hearer to contradict it. Hence, in (1b), which stems from a parliamentary speech, everyone in the audience is expected to know that all documents are freely available. The main difference between *ja* and *doch* is that the latter particle also expresses a kind of adversativity, in that there seems to be a contradiction between what is said (hence: what the hearer should know) and what the hearer is assuming or doing, usually implying that these assumptions or actions should be modified in such a way as to be compatible with the common-ground information. In the case of in (1c) this can be formulated as ‘you seem to be convinced that he wanted to investigate, although you know that he could not care less.’ Finally, the particles *eben*, *einfach*, and *halt* are closely related in that they all mark the content of the utterance as obvious, unchangeable, or the only possibility: unless you have extraordinary power, you cannot change the way things go in international politics (1d) nor your destiny (1e), and in (1f), the speaker indicates that the neutrality of the country is not a matter of discussion.

1.2. Issues in describing modal particle meanings

The meaning descriptions given above are admittedly rather unnuanced. This is not just for reasons of space: it is also related to the starting point of this paper, namely that modal particle meanings are notoriously hard to pin down. On the one hand, the precise nuances conveyed by the particles are highly context-sensitive (cf. e.g. Feyrer, 1998, p. 40), and on the other hand, these downtoning nuances are subtle and situated at the non-propositional level of intersubjective meaning-making, which makes them hard to capture. As a consequence, there is a considerable amount of discussion in the literature on which labels are most suited to describe the meaning of individual particles. This can be illustrated by referring to just some of the labels proposed for *eben*. While according to Becker (1976), this particle is used to indicate that the speaker does not accept any counterarguments, others think that it rather marks the content of the utterance as a given fact (Lütten, 1977), as irrevocable and generally known (Burkhardt, 1986), as proved (Brauß, 1986) or as obvious (Thurmair, 1989). According to Autenrieth (2002), *eben* indicates that the situation described is unchangeable or the only possibility, which fits in with Trömel-Plötz's (1979) view that it marks the statement as categorical and always valid. Karagjosova (2003), on the other hand, thinks that *eben* is used with explanations that are part of the common ground, and similarly, according to Engel (2004), utterances with *eben* are natural explanations or consequences of some pre-mentioned fact.

Although these labels all go more or less in the same direction, the nuances they imply are far from identical. Furthermore, *eben* is not the only particle in this case (see, for instance, Rinas 2007 for a more extended discussion of different theories on the meaning of *ja*, including the views that it marks information as common ground, as an explanation, or simply as true or uncontroversial, cf. section 4). As a consequence, scholars disagree not just on the labels for describing the meanings of individual particles, but also on how different particles relate to each other.

A case in point is the relation between the particles *eben*, *einfach*, and *halt*. In the previous section, I indicated that these are closely related in that they all mark the content of the utterance as somehow obvious. However, partly because of the uncertainty about how to describe the meanings of the individual particles, scholars also seem to disagree on what exactly the relation between these three particles is, i.e. to what extent they are synonymous or – alternatively – in what respect they differ.

The discussion is mainly about how *eben* and *halt* relate to each other; the relation with *einfach* is not often addressed explicitly. This may be in part because some scholars (e.g. Autenrieth, 2002) hesitate to consider *einfach* as a modal particle and rather think of it as an intensifying particle or an adverb (but see section 5.2). Those scholars who do mention *einfach* (e.g. Confais & Schanen, 1985, Péteri, 1992, Thurmair, 1989) seem to agree on it being somewhat more subjective or speaker-oriented than *eben* and *halt*, which are more hearer-oriented: *eben* and *halt* mark the utterance as downright obvious to anyone, including the hearer, while *einfach* indicates that the speaker considers it as obvious without wanting to assume that it is by definition equally self-evident to others (cf. Thurmair, 1989, p.120 and 131).

Regarding the relation between *eben* and *halt*, different views have been put forward in the literature, as shown in Table 1.

	<i>eben</i>	<i>halt</i>
Thurmair (1989)	obvious	plausible
Braber (2006)	stronger finality	weaker finality
Gornik (1998)	established or mentioned	speaker's opinion
Hentschel & Keller (2006)	neutral	more emotional
Lang (2012)	(different connotations, but not further specified)	
Autenrieth (2002), Held (1981), Wolski (1986),...	synonymous	

Franck (1980),...	regional variants
Engel (2004)	regional variants, although <i>halt</i> is more friendly in orders

Table 1: Different views on the relation between *eben* and *halt*

As this (non-exhaustive) overview shows, the positions taken in the literature towards the relation between *eben* and *halt* can largely be divided into three groups: while some scholars consider them as purely interchangeable synonyms (e.g. Autenrieth, 2002) or regional variants (e.g. Franck, 1980), *halt* being more common in southern regions and *eben* in northern regions, others think that there is a difference in nuance between them. How this difference is to be interpreted, however, is still a matter of discussion. Thurmair (1989), for instance, thinks that *eben* is somewhat more categorical, marking obviousness rather than plausibility, and similarly, Gornik (1998) claims that *eben* is used more with established facts or common ground while *halt* is more typical of personal views. In an analogous way, Braber (2006) argues that the nuance of finality (“there is no real alternative to the suggestion being made”, Braber, 2006, p. 1491) is stronger with *eben* than with *halt*. According to Hentschel & Keller (2006), on the other hand, *halt* has a more emotional value, while *eben* is more neutral in this respect – or to use the terms Hentschel (1982) proposes: *halt* is weaker and warmer, *eben* is stronger and colder.³

The assumption that *halt* and *eben* are pure regional variants has, however, been contradicted in more recent literature (e.g. Autenrieth, 2002, p. 93, Dittmar, 2000, p. 212): they may have been in the past, but at least for the present-day situation, reducing it to a regional matter seems to be inappropriate. This rules out one possibility, but then what the precise relation between the particles is, i.e. to what the extent they are synonymous and how the difference (if any) is to be interpreted, still remains to be cleared.

1.3. Remediating the issues

Some scholars have tried to come to grips with issues like the ones just mentioned by comparing the contexts in which the particles are used and seeing to what extent the particles are interchangeable (e.g. Thurmair, 1989) or by looking at differences in the ways individual particles are translated (e.g. Burkhardt, 1995, Schoonjans, 2013), but these strategies have not brought an answer to all questions. Therefore, this paper proposes another approach and shows how the gestures the particles co-occur with can help in describing the meanings of the particles, both by offering new evidence for existing hypotheses and by shedding new light on unresolved discussions. This will be illustrated by means of two case studies. The first case study (section 4) offers a general overview for the six particles included in the study, and shows how the particle-gesture co-occurrences can give an indication of the strength of particle meanings and their degree of grammaticalization. In the second case study (section 5), we zoom in on the aforementioned issue of the relation between the near-synonymous particles *eben*, *einfach* and *halt*, showing how a gesture analysis can be helpful in ruling out some of the possibilities listed in Table 1 and getting a better view on the status of *einfach* as a modal particle. Before turning to these case studies, however, it is important to indicate how the notion of gesture is conceived and which types of gestures are relevant to the present discussion.

2. Gesture

The notion of gesture has been defined in different ways in the literature. In the following, I apply the definition proposed by Calbris (2011, p. 6), who defines ‘gesture’ as “the visible movement of any body part consciously or unconsciously made with the intention of communicating while speech is being produced”. In other words, gestures are body movements contributing to communication, and the notion is not restricted to head and arm movements but also includes head movements, for instance.

Since the goal of this paper is to show how gestures can shed new light on particle meanings, the focus in the following will be on those gestures that are related to the particles at the

meaning level. Given the downtoning function of the particles described above, it is natural to first of all think of gestures which have a downtoning meaning themselves. An example of this would be the headshake, which next to its explicitly negating uses has also developed uses which are described by Kendon (2002) as implicitly negating. One of these implicitly negating uses is the negation or rejection of any other possibilities, exceptions, or counterarguments. Hence, in this case, the function of the headshake can be paraphrased as ‘I don’t know what else there is to say about it’, ‘I don’t see how it could be otherwise’, or ‘I don’t see any other possibilities’ (or, at a meta-level, ‘I cannot think of any other or more appropriate formulation’). In this respect, the headshake resembles particles such as *einfach*, which also indicate that according to the speaker, the situation described is obvious and there is no need for further discussion. Another gesture with approximately the same function is the shoulder shrug, which is typically used to mark for instance that the speaker has no idea, but which can also be used to indicate that the speaker does not see any alternatives for what he says or reasons for discussing it.

Interestingly, the vertical counterpart of the headshake, the head nod, can also be used with a downtoning function. If accompanying an assertive clause, it underlines the truth or the assertive value of the clause, or indicates that the speaker really adheres to what he is saying. In this respect, it resembles the particle *ja*, which according to Rinas (2007) does not necessarily mark the information as shared knowledge but rather indicates the truth or uncontroversiality of this information in the sense that no contradiction is expected. Strikingly, this implies that both in speech and in gesture, the same form (*ja* or the head nod) is used both for affirmative answers (‘yes’) and for underlining the adherence to the utterance. In line with this, we find the head nod with the particle *ja*, but also with other particles that imply adherence to the utterance, such as the obviousness marker *eben*.

At least two flat-hand gestures described by Kendon (2004) have to be mentioned here as well: the ‘palm-lateral’ gesture (short for ‘Open Hand Supine with lateral movement’, Figure 1) and the ‘horizontal palm’ gesture (also called ‘Open Hand Prone’ gesture, Figure 2). The palm-

lateral gesture is a movement of one or both hands as flat hands, palms facing upwards, from the lower center of the gesture space to the side and often slightly backwards. The image behind this gesture is one of withdrawal: the speaker pulls his hands off of what he is saying. This may be because he rejects any responsibility for it ('I cannot do anything about it'), or because he does not see any reason for further discussion or explanation (cf. Kendon, 2004, p. 275). The 'horizontal palm' gesture resembles the palm-lateral to the extent that it is also a movement of the flat hand(s) to the side. However, this time, the palms are facing down, and the movement goes to the side and slightly downward instead of backward. There is some discussion about the underlying image (Kendon, 2004, p. 255 talks about the cutting of vertical strings while C. Müller, 2014, p. 145 rather interprets it as "sweeping away something [...] so that absolutely nothing is left"), but the function is clear: it indicates that there are no other possibilities (they are cut or swept away by the gesture), and hence that any discussion is pointless.

Figure 1: 'Palm-lateral' gesture (from Schoonjans, 2018, p. 165)

Figure 2: 'Horizontal palm' gesture (from Schoonjans, 2018, p. 166)

A final downtoning gesture which is relevant for the present discussion is the intersubjective (or interactive, interpersonal) deictic. This is a pointing gesture (a ‘deictic’), realized typically with a flat hand and used to show agreement or common ground with the person it is directed to. Hence it can be paraphrased as ‘as you know’ or ‘as you will probably agree’ (cf. also Holler, 2010, p. 12). This relates the gesture in the first place with the particle *ja*, but as we will see in section 5 below, it can also be used with obviousness-marking particles such as *halt*, since the interlocutor is indeed expected to agree with what is obvious.

Figure 3: Intersubjective deictic (from Schoonjans, 2018, p. 142)

Not really a downtoning gesture but still to be mentioned here is another use of pointing, viz. referential pointing. Referential pointing gestures are oriented towards a person or an object to identify it as the intended referent of what is said or to direct attention towards it. Because of this attention-guiding function, referential deictics can also be used as a kind of truth markers. Especially with utterances such as ‘there is X’ or ‘I’ve brought X’, to the extent that X is visible, directing attention to it not only has a purely referential function; it also shows that the utterance is true. Hence, the truth of the utterance is supported and the utterance is made undeniable, not by means of a verbal downtoner, but by directing attention to the proof by means of a gesture. This makes the referential deictic another gestural counterpart of particles that relate to truth or obviousness, such as *ja* and *eben*, as what can be proved is obviously true. For that reason, the referential deictic will be considered on a par with the downtoning gestures in the following, although it does not really convey a downtoning meaning itself (it is rather a

referential gesture used for downtoning purposes than a truly pragmatic, downtoning gesture itself).

Not all gestures that are relevant for the questions addressed in this paper show such a clear link with a downtoning meaning, however. Indeed, as indicated by Schoonjans (2014, 2018), modal particles also regularly co-occur with gestures that rather relate to their illocution-type-marking function. Downtoning can be considered as a kind of illocutionary force, and given the downtoning nuances they convey, modal particles can only occur in a certain number of illocution types each. Therefore, the fact that a particular modal particle is used is also an indication that we have to do with a particular illocution type. In other words: by their downtoning nuance, the particles also mark the illocution type. However, among the gestures patterning with modal particles, we also find gestures that can be considered as related to the illocution type without at the same time conveying a downtoning function (taking ‘downtoning’ in the strict sense here as purely referring to the attitudinal, stance-related nuance of the particles as described in section 1). These illocution-type-related gestures are based on a particular realization of the so-called ‘conduit’ metaphor: communication is an exchange of messages, and these messages are packed in objects or containers (standing for the utterances). Hence, a declarative utterance can be represented gesturally as putting this object into the gesture space (or the communication space) or by offering it to the interlocutor on a kind of plate (the flat hands), so that he has access to it, or as the opening of a package (the container) so that the interlocutor has access to its content (the message). Similarly, for questions, it is possible to extend the flat hands, palms facing upwards, as a kind of tray on which the interlocutor is to metaphorically place the answer. Hence, these gestures represent the giving (or asking/‘begging’ for) information, and thus the illocution type of the verbal utterance they accompany.⁴

Figure 4: ‘Offering’ and ‘putting’ conduit gesture (from Schoonjans, 2018, p. 187 and 189)

3. Methodological remarks

3.1. Data

For the two case studies to be presented in the following, the same data set is used. This data set consists of two corpora, one containing television materials, while the other is made up of parliament recordings. The former, named *Fernsehgespräche* (‘television conversations’, FG), is a self-compiled set of televised conversations from the first half of 2009, with a total duration of c. 17 hours. It mainly consists of talk show data and sports coverage interactions (i.e. not the reports themselves, during which the speakers are usually not visible, but rather interviews, recaps etc.). The other data set (PR) was compiled by Elisabeth Zima and contains a series of 21 plenary speeches in the Austrian Parliament from 2006-2007, with a total duration of c. 4 hours. The choice of these corpora is justified by the fact that it allows to cover a broad range of settings and genres, both monologues (PR) and dialogues (FG), with the talk shows also ranging from more informal, relaxed ‘small talk’ programs over more serious shows in which social and political issues are discussed to true political debates. Furthermore, the dataset contains materials from no less than 81 speakers in total, which is important in order to counterbalance the highly idiosyncratic nature of gesturing (although all gestures involved in the study are ‘recurrent’ gestures in the sense of Ladewig [e.g. 2014]).

The choice of these data imposes some restrictions on the study, however. A major drawback is that the position of the camera is not always optimal for a gesture analysis and that sometimes the speaker is not even visible.⁵ Furthermore, the data might not represent real spontaneous

everyday conversation, so the addition of such materials is another desideratum for further work. Still the corpora offer valuable data for the analysis.

3.2. Coding

Since the objective of this paper is to see what gestures can contribute to the description of the particle meanings, the starting point of the analysis was formed by the particles themselves. The data were thus searched for the verbal particles, and these were then annotated with respect to whether they co-occurred with a gesture (and if so, which one). ‘Co-occurrence’ is to be taken in the broad sense here: while the particle is realized during the gesture stroke (or hold) most of the time (about 82% of the gesture occurrences included in the study), cases where the gesture is realized within the same clause as the particle without overlapping with the particle itself were also included in the analysis.⁶

It should be noted that some of the gesture types described in section 2 can be combined (for instance the headshake and the shoulder shrug), also when co-occurring with a particle. In these cases, all individual gestures were annotated, rather than picking out a dominant one (as is done for instance by Paggio, 2012, p. 288), since all of these elements of the combination actually have a meaning contribution which may be relevant to the interpretation of the particle.

For the analysis to be reliable, it is important that the annotations on which it is based are accurate. This is typically ensured by comparing annotations of the same data by different coders. For this paper, however, no such traditional *inter-coder agreement* procedure was followed, for one thing because traditional reliability coefficients such as Cohens Kappa (the traditional agreement measure) are not free from criticism (e.g. Gnisci et al., 2013), but also because this procedure merely gives an indication of the reliability of the annotations and does not necessarily imply that researchers discuss the cases in which the annotations differ. Therefore, an *inter-coder verification* procedure was opted for instead, meaning that different coders did not just compare their annotations but also discussed the differences in order to come to a uniform annotation agreed upon by all.

3.3. Restrictions

The proposed method does of course have its restrictions. If the particles are to be analyzed in light of the gestures they co-occur with, as is the goal of this study, it is important to have an idea of which meanings these gestures convey. Given the difficulty of grasping downtoning meanings (the starting point of this paper), this is not an easy task, as the risk always exists that the meaning of the particle influences the interpretation of the context, i.e. meaning elements of the particle are erroneously also ascribed to the gesture because they co-occur. This can never be fully excluded, so inter-coder verification and a close look at how the gestures function in contexts where the particles are not present (cf. the references cited in section 2 and, specifically for German, Schoonjans 2018) are important steps to reduce the risk of particle-induced false interpretations of the gestures.

Another difficulty is the fact that there may be mismatches in meaning between the gesture and the co-occurring particle. I am not referring here to cases in which the particle and the gesture express conflicting meanings (which might, of course, also occur as a performance error), but rather to cases in which they convey different but compatible nuances. It could be, for instance, that two different downtoning meanings are expressed in one sentence, one verbally and the other in gesture (just as it is possible to combine two particles expressing different nuances), or that one is more precise than the other, as in the aforementioned case of the affirmative head nod with obviousness marker *eben*. This is, of course, something to bear in mind, and once again, inter-coder verification and comparison with other usage contexts of the gesture may be helpful in grasping these cases correctly. However, given that the goal of the present study is not to offer detailed descriptions of particle meanings just on the basis of gesture, such mismatches need not be problematic – quite the contrary: the following study is based on the comparison of the gesture inventories of different particles, and the fact that certain gestures are found with different particles which are not necessarily their most direct verbal

counterparts may actually shed an interesting light on the relation between the particles, as will become clear in the following.

4. Strength of meaning and degree of grammaticalization

4.1. Total gesture frequencies

As a starting point, it seems worthwhile to get a general overview of the situation. Table 2 shows for each of the particles under investigation how many of its attestations in the data set are accompanied by a downtoning gesture and how many are accompanied by an illocution-type-related gesture. The last column also indicates the total number of particle attestations accompanied by either one of these gesture types. Note that the figures in this column do not necessarily equal the sum of the values for the individual gesture types, as it does occur sometimes that one particle attestation is accompanied by a combination of a downtoning and an illocution-type-related gesture.

	+ downtoning gesture	+ illocution-type- related gesture	total
<i>denn</i> (63)	6.35% (4)	9.52% (6)	11.11% (7)
<i>ja</i> (475)	25.47% (121)	21.47% (102)	37.47% (178)
<i>doch</i> (84)	27.38% (23)	16.66% (14)	38.10% (32)
<i>halt</i> (65)	30.77% (20)	16.92% (11)	36.92% (24)
<i>eben</i> (62)	38.72% (24)	9.68% (6)	45.16% (28)
<i>einfach</i> (135)	43.70% (59)	8.15% (11)	47.47% (64)

Table 2: Distribution of the gesture types over the particle attestations

(The numbers in brackets indicate the absolute frequencies)

When we move down the table, the total amount of particle attestations accompanied by a gesture rises.⁷ This tendency is to be attributed mainly to the downtoning gestures, which show the same image even more clearly. There are at least three (partly related) factors which may be part of the explanation. A first one is the speaker-orientedness. As mentioned before, it is generally assumed that *einfach* is more speaker-oriented than the closely related particles *eben* and *halt* (see also section 5.1 below). Hence, one could say that the speaker is more ‘present’ in an utterance with speaker-oriented *einfach* than in one with hearer-oriented *eben* or *halt*. It seems plausible to hypothesize that the more a speaker is involved or ‘present’ in an utterance, the more likely s/he is to produce gestures with it (at least gestures of a downtoning kind, reflecting this personal involvement). However, this hypothesis is in need of further verification, and furthermore, it cannot explain the difference between *halt* and *eben* on the one hand, and *ja* and *doch* on the other, since there does not seem to be a major difference with regard to speaker-orientedness between these particles.

There is, however, a difference in the ‘strength’ or preciseness of the particle meaning. It is possible indeed to consider the obviousness marked by the *eben–einfach–halt* group as a stronger nuance than the lack of controversy marked by *ja*, which could explain why the rates for the obviousness group are higher than for *ja*. Similarly, *doch* can be seen as somewhat stronger than *ja* in that on top of the uncontroversiality, it also expresses adversativity, which is not the case with *ja*. This could equally explain (in part) why the rates for *denn* are that much lower: this particle does not have such a clear downtoning function (anymore); the connecting function (marking that the question links up with some element of the context) seems to be more prominent, and it is actually assumed sometimes that *denn* is becoming a pure illocution type marker for questions without any clear downtoning meaning (Thurmair, 1989, p. 176; see also Péteri, 2011, and Bayer, 2012, among others).

This point neatly leads to the third factor: grammaticalization. Indeed, if *denn* has lost nearly all of its downtoning meaning and is becoming an illocution-type marker, this is due to its advanced grammaticalization.⁸ Similarly, it has been argued that *ja* is more grammaticalized

than related particles such as *doch* (e.g. Schoonjans, 2014b), which also fits in with the observation that it is less often accompanied by a downtoning gesture. In other words: there seems to be a correlation between the amount of downtoning gestures used with a particle and its degree of grammaticalization, particles with more gesture attestations being less grammaticalized.⁹

4.2. Downtoning versus illocution-type-related gestures

The figures in Table 2 also offer another indication of this grammaticalization hypothesis. This becomes clear if we compare the figures for downtoning and illocution-type-related gestures. However, the raw figures in Table 2 do not clearly show the relevant tendency. Therefore, a graphical representation comparing these figures for each of the particles has been included in Figure 5.

Figure 5: Downtoning vs. illocution-type-related gestures per particle¹⁰

The graph in Figure 5 is based on the numbers from Table 2. However, unlike in Table 2, where particle attestations being accompanied both by a downtoning and an illocution-type-related gesture were included twice (once in the downtoning column and once in the illocution-type column), these particle attestations with both gesture types have been counted separately in

Figure 5. This slightly changes the proportions, but the general tendency remains the same: the further down the graph, the more important the position of the downtoning gestures is when compared to the illocution-type-related gestures. In other words, not only are the particles at the bottom of Table 2 and Figure 5 more often accompanied by a gesture (cf. Table 2), chances are also higher that this gesture is downtoning rather than illocution-type-related. This fits in with the aforementioned idea that *denn* is actually losing its purely downtoning function and becoming an illocution-type marker for questions, as indeed it is the only particle included in this study for which the illocution-type-related gestures are more numerous than the downtoning gestures. Interestingly, in the case of *ja*, the downtoning gestures are not significantly more frequent than the illocution-type-related gestures (cf. Table 2)¹¹, which not only corroborates the idea that *ja* is strongly grammaticalized and has lost (part of) its downtoning value in some cases, but also suggests that *ja* might actually be evolving towards an illocution-type marker for assertions, just as *denn* is for questions.

4.3. Uniformity of gesture inventories

A further indication can be found in the so-called internal uniformity values, or *I*-values (Geeraerts et al., 1999), of the gesture inventories for each of the particles.¹² These *I*-values are an indication of the homogeneity of a data set: the higher the *I*-value is (with a maximum of one), the more homogeneous the data set is. Table 3 indicates the *I*-values for each of the particles investigated. The middle column contains the *I*-values taking into account all relevant gestures (i.e. downtoning and illocution-type-related gestures), while the figures in the rightmost column are based solely on the downtoning gestures.

	downtoning & illocution- type-related gestures	downtoning gestures only
<i>denn</i>	0.31	0.25
<i>ja</i>	0.15	0.10
<i>doch</i>	0.18	0.19
<i>halt</i>	0.10	0.11
<i>eben</i>	0.17	0.24
<i>einfach</i>	0.19	0.22

Table 3: Internal uniformity values

The I -values are calculated on the basis of the token frequencies. Hence, if a particle is accompanied by fewer gesture types with higher token frequencies, this makes a higher homogeneity (and hence a higher I -value) than if it is accompanied by more different gesture types which are less frequent. This explains why the inclusion of an extra gesture type (the illocution-type-related gestures) results in a higher I -value in the case of *ja* and *denn*: this is solely due to the fact that the illocution-type-related gestures are relatively more frequent than the downtoning gestures with these particles. With all other particles, the inclusion of the illocution-type-related gestures produces a decrease of the I -value because it actually is nothing but the inclusion of another infrequent gesture type. Hence, this is another proof of the relative importance of the illocution-type-related gestures with *ja* and *denn*.

The values in the rightmost column, which are based solely on the downtoning gestures, may also give an indication of how precise and clearly delineated a particle's meaning is. A higher I -value indicates a more homogeneous data set, i.e. a more restricted set of more frequent gestures, which in turn may indicate that the particle's meaning is rather fixed and related to this restricted set of gestures, while a lower I -value, i.e. the combination with more different gestures, indicates that the particle's meaning is less precise or more variable, and therefore

open for combination with more different gestures that specify the particle's meaning by adding different nuances.¹³

This clearly shows in the case of *ja*. Indeed, the low *I*-value for this particle is probably due to its vagueness and polyfunctionality: depending on the context, different facets of its meaning potential are more prominent (or are made more prominent by the gesture). For instance, if *ja* is used with an interpersonal deictic, the idea of shared knowledge or common ground is more salient, whereas if it occurs with a head nod, it is rather the idea of affirmation that is brought to the forefront. Similarly, we regularly see *ja* being used with gestures with a 'stronger' meaning, i.e. gestures which are more typically used with a 'stronger' particle such as *eben* or *einfach* (e.g. the headshake or the 'palm lateral'); this may be an indication of the generalness or vagueness of the meaning of *ja*, which is in need of specification or strengthening – either by means of another verbal particle (cf. Thurmair's [1991, p. 27] observation that *ja* is one of the particles that are most often used in combination with another particle) or by means of a gesture.

To some extent, this considerable polyfunctionality of *ja* is probably due to its high degree of grammaticalization: because of the desemanticization which is typical of grammaticalization, *ja* leaves more room for contextual interpretation or specification. However, the degree of grammaticalization cannot be considered as the sole factor at stake when interpreting a lower *I*-value as an indication of vagueness or polyfunctionality. Indeed: *halt* does not seem to be clearly more grammaticalized than *eben* or *einfach*, despite having a lower *I*-value. As will be shown in the next section, this is due to the fact that *halt* shares features with different particles and can therefore be combined more easily with gestures which are typical of these other particles as well. On the other hand, *denn* is grammaticalized clearly further than other particles while having a higher *I*-value. This suggests that the downtoning meaning of *denn*, while not being that prominent as such anymore because of the grammaticalization, still seems to be more clearly delineated when it is noticeable, but since this observation is based on just four attestations of *denn* with a downtoning gesture (cf. Table 2), care has to be taken in order not to overestimate this homogeneity and clearness of meaning.

5. Relations between particles

So far, I have shown how the gesture inventories of particles can support claims about the strength and preciseness of particle meanings and their degree of grammaticalization. These claims are in line with assumptions from previous literature (e.g. Schoonjans, 2014b). Apart from that, gesture studies can also provide insights into the meaning relations between particles. This can be illustrated by means of the particle triad *eben–einfach–halt*. As indicated in section 1.2 above, these three particles are closely related in that they all mark the content of the utterance as somehow obvious, but scholars disagree on what exactly the relation between these three particles is (synonyms, near-synonyms, or regional variants – and in the case of near-synonymy how the difference is to be perceived). In Section 5.1, I will show how an analysis of the gestures used with each of the particles leads to a better view of these inter-particle relations. Finally, in section 5.2, I will briefly turn to a related issue, viz. whether *einfach* should not be considered as an intensifier rather than as a pure modal particle, showing that the gesture inventories suggest that *einfach* may not be a mere intensifying particle.

5.1. *Eben, einfach, and halt*

5.1.1. *Uniformity across gesture inventories*

As a first step, it seems worthwhile to take a look at the so-called external uniformity values, or *U*-values (Geeraerts et al., 1999). These *U*-values give an indication of the similarity between data sets, taking into account both the amount of shared types and their relative frequencies. The higher the *U*-value is (with a maximum value of 1), the more the data sets resemble each other.

In this case, the data sets to be compared are the gesture inventories for the three particles under investigation. The underlying assumption is, once again, that these gesture inventories give an indication of the particle meanings, and that therefore resemblance of gesture inventories is an indication of the degree of synonymy of the corresponding particles. Hence, synonymous particles are expected to have a higher *U*-value, i.e. more resembling gesture

inventories, whereas lower *U*-values would indicate a lower degree of similarity of the gesture inventories and therefore a more considerable difference in meaning between the particles.

Table 4 contains the *U*-values for the particle triad and for each of the particle pairs. As with the *I*-values in the previous section, two values are given each time, one looking at both the illocution-type-related gestures and the downtoning gestures and one for the downtoning gestures only, since these are most relevant to this discussion.

	downtoning & illocution- type-related gestures	downtoning gestures only
<i>einfach – halt</i>	0.55	0.55
<i>eben – halt</i>	0.37	0.28
<i>eben – einfach</i>	0.32	0.27
<i>eben – einfach – halt</i>	0.21	0.16

Table 4: External uniformity values for the particles *eben*, *einfach*, and *halt*

Both columns show the same tendency: the *U*-values decrease towards the bottom of the table. That the bottom row contains the lowest values may not be surprising as such, given that it compares three instead of two particles. However, the *U*-values are clearly below the maximum value of 1 for each of the particle pairs as well, which suggests that they may not be pure synonyms. Interestingly, the highest values are obtained for the particle pair *einfach – halt*, which goes counter to some assumptions made in the literature. In Thurmair's (1989) meaning analyses, for instance, they do not share any features (*einfach*: speaker-oriented obviousness vs. *halt*: hearer-oriented plausibility). On the other hand, *eben* and *einfach*, which in Thurmair's terms share the feature of obviousness, are the least similar when it comes to gesture usage. Even more strikingly so, although they have sometimes been considered as synonymous, the particles *eben* and *halt* have *U*-values which are not much higher than those for the pair *eben –*

einfach, and clearly below those for *einfach* and *halt*. This suggests that the relation between these particles is in need of rethinking.

5.1.2. Gesture distribution

What we cannot derive from these figures, however, is how the relation between the particles is to be interpreted, simply because the *U*-values do not show which gestures are most closely related to which particles. Therefore, Figure 6 contains a scatterplot in which the most important gesture patterns are situated vis-à-vis the three particles.

Figure 6: Scatterplot of the gestures used with *eben*, *einfach*, and *halt*

As can be seen from the graph, the three particles are clearly apart and each cluster with a different group of gestures. This is in line with what the *U*-values in Table 4 indicated, viz. that there are clear differences in the gesture inventories of the particles. As mentioned above, these differences suggest that none of the particle pairs can be considered as truly synonymous, as indeed one would expect greater similarity in the gestures accompanying synonymous particles.

Hence, at this point, two positions from Table 1 concerning the relation between *eben* and *halt* can be discarded or at least considered as less plausible: the data suggest that they are not truly synonymous and, as indicated above, they cannot be considered as mere regional variants either (at least not in present-day German). The question then remains what the difference is.

A first step in interpreting this difference is to actually look at what distinguishes *einfach* from *eben* and *halt*. If we draw a vertical line through the zero point of the horizontal axis, we see that on the *einfach*-side, we find gestures such as the headshake (*hs*) and the shoulder shrug (*shr*), whereas the other part of the plot contains gestures such as interpersonal (*id*) and referential deictics (*rd*) and the so-called palm lateral (*pl*) and horizontal palm (*zp*) gestures. Looking back at the way these gestures were described in section 2 above, it seems that there is indeed a difference in subjectiveness or speaker-orientedness, as Thurmair (1989) suggested. Indeed, the meaning of *hs* and *shr* was described as ‘I don’t know what there’s more to say about it’ or ‘I don’t see any alternatives’ – so: speaker-oriented (‘*I* don’t...’). On the other hand, the meaning descriptions given for the other gestures can be interpreted as more hearer-oriented (‘as you know’ (*id*), ‘as you can see’ (*rd*)) or more objectifying (‘that’s the way it is’ (*pl*), ‘no other possibilities’ (*zp*)). The head nod is perhaps a bit of the odd one out in this respect, as it is in the right half of the graph (i.e. at the *einfach* side) although as a truth-marker (cf. section 2) it is not as strongly speaker-oriented as *hs* and *shr*, but the graph shows that the nod is still closer to *eben* than to *einfach*, so it does not really undermine the presented hypothesis.

In a similar way, it is possible to divide the plot in an upper and a lower part, in order to come to grips with the relation between *eben* and *halt*. Interestingly, it is not just *einfach* which is closer to *halt* than to *eben*: the two gestures which are most strongly linked to *einfach* (*hs* and *shr*) are also on the *halt* side of *einfach* and not on the *eben* side. In this respect, one could argue that *halt* is also more speaker-oriented than *eben*. However, this seems to be an oversimplification, given that gestures such as *id* and *pl* are also closely related to *halt* (and not to *eben*), although they are not that much speaker-oriented. Quite the contrary: as has been indicated in section 2, *id* is the most typical gesture to indicate common ground, and in that

respect, it is strongly hearer-oriented. This actually suggests that Gornik (1998) may not be entirely right in claiming that *eben* is more common than *halt* in situations of common ground (cf. Table 1 above), since the most typical gesture of common ground (*id*) is more frequent precisely with *halt*.

This observation does not, however, answer the question of the relation between *eben* and *halt*. I would propose to analyze it in terms of categoricity, in the sense that claims with *eben* are actually more categorical than claims with *halt*. To some extent, this was already suggested by Thurmair (1989), who analyzed *eben* as a marker of (more categorical) obviousness and *halt* as a marker of (less categorical) plausibility. A similar image is reflected in the gestures: indicating that you do not see any other possibilities (as with *hs* and *shr*) does not necessarily imply that there are none, and similarly with *pl*, you pull your hands off of it, indicating that you cannot do anything about it, but without excluding that someone else can. Analogously, the interpersonal deictic is related to common ground and its meaning can be paraphrased as ‘as you know’ or ‘as you will probably agree’, which is not the most categorical way of putting things. Actually, as a gesture, interpersonal pointing is more typically related to the particle *ja*, which is even less categorical than *halt* (it marks the content of the utterance as known or uncontroversial, but without adding any nuance of obviousness). On the other hand, the *zp* gesture really excludes any other possibilities and rejects any further discussion, and the referential deictic undeniably proves the truth of the utterance, just by pointing at it. Similarly, the head nod functions as a kind of truth marker. In a way, these last three gestures (*zp*, *rd*, and *hn*), which are closer to *eben* than to *halt* in the plot, are more categorical indeed than the gestures on the *halt* side.

Also noteworthy in this respect is the position of the illocution-type-related gestures (*it*), clearly closer to *halt* than to *eben*. As shown by Schoonjans (2018), there are at least two factors which influence the likeliness of such a gesture to occur with a modal particle. One is context shift, i.e. when the actual speaker is not responsible for the downtoning but adopts it from another speaker, e.g. in indirect speech (cf. Döring, 2013), as in (2). If a particle is context-

shifted, it is more likely to be accompanied by an illocution-type-related gesture rather than by a downtoning gesture. However, in my data, there is no considerable difference between *eben* and *halt* when it comes to context shift, so this factor probably is not at stake here. On the other hand, illocution-type-related gestures are also more frequent with particles with a more general or a weaker meaning (cf. section 4). This fits in with the idea that *halt* is less categorical (thus ‘weaker’) than *eben* and therefore more likely to be accompanied by an *it* gesture.

- (2) *Manch einer [...] schiebt die Bemerkung nach, dass er halt noch immer der Fleißigste und Wägste von allen sei. (COSMAS-II)*

‘Several ones add that he *just* still is the most hard-working and competent of all.’

This idea of categoricity also allows to explain why *einfach* turns out to be closer to *halt* than to *eben*: *einfach* marks something as obvious to the speaker, but what is obvious to the speaker is not by definition also obvious to others. In this sense, *einfach* is less categorical than *eben* and more like *halt*, despite the difference in speaker- vs. hearer-orientedness. In a way, this may also explain why *halt* has such a low *I*-value (see Table 3). Indeed, *halt* actually unites the non-speaker-orientedness of *eben* with the non-categoricity of *einfach*. As a consequence, apart from the gestures which are more typical of the particle itself (*id*, *pl*), *halt* can be combined both with gestures which are closer to *einfach* and to *eben*, as it shares meaning elements with both of them. This is clearly less the case for both *einfach* and *eben* themselves. In other words, *halt* can be combined with a wider spectrum of gestures, which entertains a lower internal uniformity of the gesture inventory of *halt* when compared to the other particles.

5.2. *Einfach* as an intensifying particle?

It should be clear that this technique of comparing the gesture inventories and the distribution of the gestures over the particles can not only shed new light on particles of the same category. So

far, the particles discussed were all members of the category of ‘modal particles’. However, the classification of *einfach* as a modal particle is not uncontroversial, and scholars such as Autenrieth (2002, p. 81) have proposed to analyze it rather as an intensifying particle or a degree marker. However, the gesture inventory for *einfach* is clearly different from those for typical intensifying particles such as *ganz* and *sehr* (both meaning ‘very’). Furthermore, those gestures which are typical of *einfach* and which are also used with *ganz* and *sehr* (headshake and shoulder shrug) are clearly less frequent with the latter two particles, while the head nod (which as an affirmation marker also has a kind of intensifying function) is more frequent with *ganz* and *sehr*. This is illustrated in Table 5, which contains the frequencies of these three gestures both looking at all particle attestations (middle part) and looking only at those which are accompanied by a gesture (right part).

	all attestations			with gesture only		
	<i>einfach</i>	<i>ganz</i>	<i>sehr</i>	<i>einfach</i>	<i>ganz</i>	<i>sehr</i>
	(135)	(167)	(158)	(61)	(55)	(57)
headshake	23.70%	11.38%	2.53%	52.46%	34.55%	7.02%
	(32)	(19)	(4)	(32)	(19)	(4)
shoulder shrug	13.33%	0.60%	0.63%	29.51%	1.82%	1.75%
	(18)	(1)	(1)	(18)	(1)	(1)
head nod	4.44%	5.98%	13.92%	9.84%	18.18%	38.60%
	(6)	(10)	(22)	(6)	(10)	(22)

Table 5: Gesture frequencies with *einfach*, *ganz*, and *sehr*

(The numbers in brackets indicate the absolute frequencies)

To get a better view of the significance of this distribution, Table 6 gives an overview of the Chi-squared values and the external uniformity values for each of the particle pairs on the basis of the right part (‘with gesture only’) of Table 5.

	Chi-squared	<i>U</i> -values
<i>einfach</i> – <i>ganz</i>	12.84 (p<0.01)	0.46
<i>einfach</i> – <i>sehr</i>	41.00 (p<0.01)	0.19
<i>ganz</i> – <i>sehr</i>	14.16 (p<0.01)	0.27

Table 6: Significance of the differences between *einfach*, *ganz*, and *sehr*

As the figures in Table 6 show, the differences between *einfach*, *ganz*, and *sehr* are significant for each of the pairs, meaning that one cannot just put these particles on a par. Interestingly, *ganz* seems to be closer to *einfach* than *sehr*, which is an indication of the precise relation between *ganz* and *sehr*, but going into that would take us too far here. What is relevant at this point is that *einfach* is still significantly different from both *ganz* and *sehr* at the level of accompanying gestures. This does not prove that *einfach* does not entertain an intensifying effect, of course. I would contend, however, that the difference between *einfach*, on the one hand, and *ganz* and *sehr*, on the other, is related to how the intensifying effect is created. While *ganz* and *sehr* are real degree particles, it seems that the intensifying in the case of *einfach* is rather an effect that is brought about by its downtoning meaning: if the message expressed in the utterance is marked as obvious, the utterance almost by definition works stronger than when there is no such marking. The fact that this is more of an issue with *einfach* than with *eben* or *halt* could be due to the speaker-orientedness of *einfach*: intensification (as realized by means of elements such as *ganz* and *sehr*) is often subjective, and hence closer to speaker-oriented particles such as *einfach* rather than more objectifying particles such as *eben* and *halt*.

6. Conclusion

Schulz (2012, p. 13) already indicated that it would be “spannend” (‘exciting’) to investigate whether there are systematic correlations in the use of modal particles and gestures. Although ‘correlations’ may be too strong as a term, the data show that the co-occurrence of modal particles and gestures in German at least follows certain patterns (see Schoonjans, 2018 for a more elaborate discussion of the patterns themselves) and that these patterns also shed new light on the meanings of the particles involved and the relations between them.

This was illustrated by looking at the gesture inventories of six German particles: *denn*, *ja*, *doch*, *eben*, *einfach*, and *halt*. In a first step (section 4), it was shown how the amount of gestures used with these particles and the variation in these gestures could be related to the strength and preciseness of the particle meanings: a higher frequency of downtoning gestures in general with a particle can be seen as an indication of a stronger downtoning meaning, and more variation in the gestures used indicates that the particle has a more general meaning or a meaning which is more subject to contextual variation. This could be related to grammaticalization, in the sense that the particles with weaker or more variable meanings are the ones which are assumed to be most grammaticalized (*ja*, *denn*). As illustrated in the next step (section 5), a comparison of the gesture inventories of the particles can also give an indication of the relation between these particles. In this way, the data offer support for the views that *einfach* is not a mere intensifier, its gesture inventory being too different from those of prototypical intensifying particles such as *ganz* and *sehr*, and that *eben* and *halt* are not mere synonyms, unlike what is sometimes believed, for the same reason: their gesture inventories are too far apart. Looking at the distribution of the gestures, the following hypothesis was formulated for the particle triplet *eben–einfach–halt* (partly in line with e.g. Thurmair’s [1989] analysis): *einfach* is more speaker-oriented than *eben* and *halt*, which are more hearer-oriented or objectifying, with *eben* being more categorical than *halt*. Given its speaker-orientedness, *einfach* is also less categorical than *eben* and is therefore closer to *halt* than to *eben*.

Of course, the possible applications of gesture analyses to modal particle research reach well beyond this. Furthermore, similar issues to the ones discussed above can be found with other particles as well¹⁴, and even for the cases described, there is still room for further refinements. Also, the analysis presented is based on the mere frequencies of the co-occurrence patterns, which is suboptimal as it may hide underlying tendencies (see e.g. Gries, 2016). Further differentiations for factors that might have influenced the distribution, such as region (Germany/Austria), setting (monologue/dialogue, informal chat/debate), and the like are therefore still a desideratum. For the co-occurrence patterns referred to in the present study, first observations suggest that these factors do not really affect the situation described but rather influence co-occurring particles and gestures alike, but further investigation is definitely needed to get to the bottom of the issue.

I also hope to have shown that existing methodologies and statistical techniques that have been around for quite some time in traditional monomodal linguistics can be used to tackle multimodal data as well. The set of techniques used in this paper is rather restricted (uniformity values, scatterplots), but it seems plausible that other techniques, such as Stefanowitsch & Gries's (2003) collocation analysis, could also be applied to multimodal co-occurrence patterns in order to shed new light on these co-occurrences and the relations between the elements involved. Here thus lies a whole new field of application for quantitative techniques used in linguistics, from which gesture studies as such may benefit just as much as the gesture-based but still more traditional linguistic description of verbal elements. The possibilities are legion and reach well beyond the restricted case study presented here, related to the meanings of downtoning particles.

Given the subtleties of downtoning meanings and the way in which these meanings evolve (both for the particles and the gestures), we may perhaps never really manage to pin them down and some vagueness may remain. Nevertheless, I hope to have shown that looking at gestures can be helpful in coming to grips with such issues, and that gesture studies thus have their place in particle research and, by extension, in linguistic analysis in general.

Notes

¹ Given the scope of this contribution, this introduction to modal particles is necessarily brief. More extended presentations of the category can be found in more general publications, including Thurmair (1989), Diewald (2007), and S. Müller (2014), on which the present introduction is based.

² The source indications refer to the corpora used for this study (see section 3.1). The translations are my own. For lack of direct counterparts, the translations of the particles, indicated in italics, can only be considered as approximations of their meanings (but see below for more elaborate discussion).

³ Hentschel (1982, similarly 1986) adds that this distinction mainly holds in southern Germany, while in northern Germany, the tendency is less strong.

⁴ An anonymous reviewer notes that the gesture labels used in this section sometimes refer to the form of the gesture (e.g. head nod, horizontal palm) and sometimes include a reference to its function (e.g. referential deictic). However, all these labels have been taken from existing literature, and the apparent terminological inconsistency does not reflect an inconsistency in definition, as each of the gestures has been defined referring to both form and function. Therefore, despite the inconsistency, these labels will be used in the following to ensure continuity with the existing literature.

⁵ Of course, only the particle attestations where the speaker is clearly visible are taken into account, since in the other cases, it is not possible to make any claims about potential gesturing with the particle.

⁶ Note that the so-called spreading (i.e., the ‘extension’) of downtoning gestures is influenced by their scope. Just like verbal downtoners, downtoning gestures have scope over the entire clause, which is why they tend to overlap with (almost) the entire clause, rather than just with the verbal downtoning element (in this case, the particle), although it is also possible that they just overlap with the focus element as the ‘main’ element in the scope of the downtoning.

⁷ *Halt* is the odd one out in this respect. It is not clear to me at this point what might explain this deviation. However, gestures with *halt* are not that much less frequent than with *ja* and *doch*, so this is not a big problem to the argumentation. Furthermore, note that *halt* does fit into the pattern if we only look at the downtoning gestures.

⁸ It should be clear that I do not want to equate grammaticalization with or reduce it to desemanticization. If I only refer to the meaning side of grammaticalization, this is mainly for reasons of space, the form-related parameters of grammaticalization being of lesser importance for the present argument. For the same reason, I refrain from going into the discussion whether in the case of modal particles, we should speak of grammaticalization or pragmaticalization (cf. e.g. Molnár, 2008), the relevant parameters being present in both processes.

⁹ Note that the idea that the particle with the most downtoning gestures, *einfach*, is the least grammaticalized fits in with the aforementioned observation that some scholars hesitate to consider it as a modal particle – precisely because, given its low degree of grammaticalization, the modal particle use of the form is still so close to its adverbial use.

¹⁰ The figures in the graph indicate the percentage of gestures with the respective particle that is downtoning or illocution-type-related. They do not indicate the amount of particle instantiations co-occurring with this type of gesture (cf. Table 2).

¹¹ Compared to the null hypothesis that downtoning gestures and illocution-type-related gestures are equally frequent, that is ($\chi^2=0.694$; $p>0.05$). Compared to the general distribution over the particles used in declaratives, the proportion of downtoning gestures with *ja* is significantly lower than with the other four particles ($\chi^2=4.332$; $p<0.05$).

¹² The uniformity values were originally developed to compare lexical variation across language varieties. Applications in the area of semantic-pragmatic descriptions as proposed here are rare (but see Schoonjans & Feytaerts, 2010, and Schoonjans, 2014b, who briefly hint at uniformity in the context of a translation study). However, as I will try to show, they can also be used as an indication of the similarity of lexical items (i.e., modal particles) on the basis of context features

of their occurrences (in this case the co-occurring gestures, but one could also think of translation equivalents or features of the surrounding elements such as ‘Aktionsart’, to the extent that they are relevant for the question addressed).

¹³ Note that a drawback of this approach is that two (near-)synonymous gestures (e.g. headshake and shoulder shrug) are still counted as different gestures, which reduces the internal uniformity and makes the particle’s meaning look less precisely delineated than it actually is. However, for the present purposes, this drawback is not so important as to make us reject this approach.

¹⁴ For a similar approach to the relation between epistemic stance markers in English, see Debras & Krawczak (2016).

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