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DEGREES OF PROCEDURE ACTIVATION AND THE GERMAN MODAL PARTICLES *JA* AND *DOCH* – PART 2

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Abstract

In this paper I argue that a unitary account of the modal and non-modal uses of the German particles *ja* and *doch* can be provided by appealing to essentially non-representational properties of the theory of procedural meaning in Relevance Theory (RT). According to Wilson (2011), procedural indicators such as *ja* and *doch* function by raising the activation level of cognitive procedures, increasing the likelihood that audiences following the RT comprehension heuristic will use these procedures. Partially following proposals by König (1997) and Blass (2000, 2014), I would like to posit that *ja* and *doch* trigger a procedure to raise the epistemic strength of the proposition conveyed. *Doch* triggers a second procedure in addition, a constraint on context selection to the effect that the proposition conveyed must be processed in a context containing its negation. Since raising the activation level of cognitive procedures can be done in degrees, I argue that the basic difference between modal and non-modal uses of *ja* and *doch* is a reflection of differences in the degree of activation level rise: non-modal uses of *ja* and *doch* raise the activation of the manifestness procedure to a high degree, giving rise to effects such as emphasis or contrast, whereas modal uses raise this procedure's activation level merely to some degree. As a result, modal *ja* and *doch* are uniquely suitable to mark propositions that do not need much evidential strengthening but would benefit from some such effect. This is most typically

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the case in mutually manifest assumptions that the communicator intends to use as premises in arguments. However, in some discourse contexts assumptions that are not mutually manifest may also fit this description. The prediction of this analysis is that the modal uses of *ja* and *doch* do not form a clearly delimited class; rather, borderline cases exist defying generalizations. I will present data from a qualitative corpus study that confirms these predictions.

4. *Doch*

4.1 Sentence initial

Sentence initial *doch* introduces a proposition that is supposed to replace another proposition that the communicator assumes the audience to entertain and which is at odds with the proposition the *doch* sentence conveys. Consider (38):

(38) Krankheitsbedingt fielen … gleich vier wichtige Spieler aus. *Doch* die Gäste überraschten zu Beginn der Partie und führten im Verfolgerduell mit 10:2 Punkten.
      'Due to sickness … as much as four important players were missing. *But* the guests surprised already in the beginning of the game and took the lead in the hot pursuit duel with 10:2 points.' (BRZ13/FEB.09618 Braunschweiger Zeitung, 27.02.2013, Ressort: 1HE-Spo; Königslutter verliert Verfolgerduell)

The statement that four important players in the team where sick and could not play gives rise to the implicature *It is no surprise if this team loses*. The utterance introduced by *doch* conveys the proposition that this team surprised everyone by winning the game by a large margin. This proposition, which contradicts the implicature, is advanced as replacing the proposition implicated by the previous utterance.

The following example works along similar lines:

(39) Auch in diesem Jahr sind wieder absolute Spitzenkönner am Start. *Doch* nicht nur Profis, sondern auch Anfänger können in speziellen Kategorien mitmachen. Insgesamt wird mit einer Beteiligung von gegen 2000 Skatern gerechnet.
      'This year, too, absolute top skaters take part. *However* not only experts, but also beginners may participate in special categories. In total the participation of about 2000 skaters is expected.' (A00/AUG.52032 St. Galler Tagblatt, 07.08.2000, Ressort: TB-AMR (Abk.); Einmal mehr: Sitter übers Ufer)

The audience may infer the assumption *This event is only for highly accomplished competitors such as professionals*. The utterance introduced by *doch* expresses a proposition that directly contradicts this implicated assumption and encourages the audience to entertain this proposition as true instead.

In both examples (38) and (39), the particle *doch* may be replaced with *aber*. Notice that variants of (38) with sentence initial *aber* together with sentence medial or pre-verbal *doch* are possible, as in (40) and (41). Notice that *doch* must be stressed in these cases. Although both (40) and (41) are acceptable according to my intuitions, (40) appears to be more natural than (41) (whose acceptability might be contested by some native speakers).

(40) Krankheitsbedingt fielen … gleich vier wichtige Spieler aus. *Aber* die Gäste überraschten *DOCH* zu Beginn der Partie und führten im Verfolgerduell mit 10:2 Punkten.
'Due to sickness … as much as four important players were missing. *But* the guests surprised *nevertheless* already in the beginning of the game and took the lead in the hot pursuit duel with 10:2 points.'

(41) Krankheitsbedingt fielen … gleich vier wichtige Spieler aus. *Aber DOCH* überraschten die Gäste zu Beginn der Partie und führten im Verfolgerduell mit 10:2 Punkten.
'Due to sickness … as much as four important players were missing. *But nevertheless* the guests surprised already in the beginning of the game and took the lead in the hot pursuit duel with 10:2 points.'

4.2 Sentence internal (middle field) *doch*

4.2.1 Typical modal use

Typical modal uses of *doch* are ones where the particle occurs sentence internally in the middle field and does not carry any stress. Example (42) illustrates this:

(42) Das Energiefondsreglement basiert auf jenem von St. Gallen. Dies wurde von der vor-beratenden Kommission unter dem Vorsitz von Markus Mauchle (CVP) und verschie-denen Parlamentariern, die sich zu Wort meldeten, positiv erwähnt, hätten *doch* so Kosten gespart werden können.
'The regulations for the energy saving fund are based on that from St. Gallen. This was mentioned positively by the pre-examination committee presided by Markus Mauchle (CVP) and several parliamentarians that got up to speak, because *after all (MP)* costs could be saved this way.' (A09/MAR.01357 St. Galler Tagblatt, 05.03.2009, S. 37; Energieeffizienz verbessern)

This example is taken from a newspaper report on the plan of a county council to introduce a far-reaching new regulation, a regulation to provide financial assistance to home owners or home builders to implement measures for better energy efficiency. From the newspaper text preceding the quote in example (42) the audience can derive the implication *Developing a far-reaching new technical regulation with large financial implications is cost intensive.* But it is also common knowledge that when the processes of drafting such a regulation re-uses the work of other commissions, costs may be saved.

The sentence marked with *doch* provides a reason for the statement made in the previous utterance, that several parliamentarians called it a good thing that the draft regulation is based on that of another county. In other words, these parliamentar-ians claimed that by basing the new regulation on that from another county the government was able to save costs.

It is moreover available to the audience in principle, but perhaps not entertained by them in practice: it is common knowledge that when the work of another com-mission is re-used, costs are saved.

It seems possible that *ja* could have been used instead: *hätten so ja Kosten gespart werden können*, although *doch* sounds preferable in this example. It may be that the

assumption *Preparing a far-reaching technical regulation is cost intensive* is transparent to (though perhaps not necessarily entertained by) a part of the audience. Making more strongly evident the information that *by re-using the work of another commission one can save costs* would then be relevant; it would explain why the parliamentarians making this comment may have found it relevant to mention this fact although it has nothing to do with the merits of the content of the proposed legislation.

Consider also (43):

(43) Zwar könne sich der Kanton Thurgau nicht mit Graubünden vergleichen, das touris-
      musmässig in der Champions League spiele, aber der Landstrich zwischen Diessenhofen
      und Horn habe touristisch ein hohes Entwicklungspotenzial, verfüge er *doch* über all
      das, was immer mehr von Gästen gesucht werde: Natur, Erholung und Ruhe.
      'although the Kanton Thurgau cannot compare with Graubünden, which plays in the
      Champions League as far as tourism is concerned, but the countryside between Diess-
      senhofen and Horn has much tourism potential, since *after all (MP)* it has what guests
      are looking for more and more: nature, recreation and quietness.' (A09/MAR.04607
      St. Galler Tagblatt, 14.03.2009, S. 31; Kommt im Thurgau die Beherbergungstaxe?)

The utterance preceding *doch* conveys the claim *The Kanton Thurgau has a high potential for development as a tourist region*. This is a claim that the audience may not be prepared to accept at face value (in other words, the audience may be inclined to believe its negation). The utterance with *doch* contains information that supports this claim. The information marked with *doch* is accessible to the audience, and hence easily verifiable. By supporting the claim that the Kanton Thurgau has a high potential for development as a tourist region, the information conveyed in the clause with *doch* can indirectly contradict and eliminate the idea that the Kanton Thurgau does not have the potential for being developed as a tourist region, the belief that the audience may have held.

Apparently, a generalization can be made: *doch* indicates assumptions that should be transparent or accessible to communicator and audience, but that the speaker believes are not entertained strongly enough by the audience.

4.2.2 Atypical modal uses

Doch may receive different degrees of stress even while occurring in the middle field. Such uses are atypical modal uses.

(44) Eines der Ziele der Präsidentin ist es aber *doch*, dass die SP Rheintal wieder wächst.
      'One of the goals of the president is *after all* that the SP [Social Democrat Party] Rheintal
      should grow again.' (A09/JAN.02090 St. Galler Tagblatt, 10.01.2009, S. 41; Grosser Tag
      für kleine Partei)

Doch marks information that the audience may have believed to be (implicitly) negated by what was said before. Moreover, the information marked by *doch* is something that the author believes should be uncontroversial: having the goal that a small party should grow again after a setback is a natural goal that one could expect any party leader to have.

Notice that *doch* occurs together with *aber* in the middle field. This, together with the observations made in (38), (40) and (41) above, indicates that these particles cannot have the same function. I assume that *aber* can be explained along the lines of Blakemore (2002) on English *but*, i.e. as activating a procedure to weaken and eliminate a previously communicated assumption. Then *doch* must activate a different procedure.

Notice that the utterance in which *doch* occurs conveys a proposition that *replaces* a wrong assumption, one that usually is implicated in the previous utterance(s). This means: it communicates a proposition that is supposed to be stronger in evidence than its negation.

Consider next example (45):

(45) Zu Hause haben wir ein sogenanntes «Zimmer des Grauens», eine Abstellkammer mit Plunder, den wir nicht mehr benötigen. Bananenschachteln, gefüllt mit Büchern und Erinnerungen, türmen sich darin bis zur Decke. So oft ich auch umziehe, begleiten sie mich *doch* jedesmal wieder in die neue Wohnung.
'At home we have a room that we call "the chamber of horrors", a storage room with things that we don't need any more. Banana packs filled with books and memorials are stacked up to the ceiling. Whenever I move, they *still (MP)* accompany me into the new apartment.' (A09/JAN.06585 St. Galler Tagblatt, 29.01.2009, S. 27; Nicht alle mögen es exhibitionistisch)

Doch marks something that runs counter to expectations: it is expected that when one moves a lot, one gets rid of unnecessary stuff. This expectation is created (or strengthened) by calling the room with the junk 'the chamber of horror'. But the sentence with *doch* states that the author typically carries unnecessary stuff along with every move. This information is already available to the audience in the sense that it is implied by the previous reference to the existence of the 'chamber of horror'. By using *doch*, this information is strengthened to the point where it can cancel earlier expectations to the contrary.

Intuitively, the heavier the stress on *doch*, the more evident the replacement- or elimination-function of *doch* becomes. In (44), *doch* is weakly stressed. The uncontroversial nature of the president's goal to see the party grow once more is more in focus than its function to counter erroneous assumptions to the contrary that the readers might have picked up from what was said before. In contrast, there is heavy stress on *doch* in (45), and the main impact of the last sentence is to express dismay at the fact that despite efforts to the contrary, the speaker still carries lots of useless stuff with him with every move.

4.3 Stressed *doch* in the pre-field of subordinate clauses

Doch can also occur in adverbial or subordinate clauses. In these sentences, the particle occurs before the verb of the adverbial or subordinate clause and is stressed. Examples are (46) and (47).

(46) Für die Papier- und Spanplattenwerke, die in den letzten Jahrzehnten einen enormen Aufschwung erlebt hatten, könnte der Rohstoff Holz dann knapp werden – wenn nicht *doch* noch brachliegende Potenziale in den Privatwäldern mobilisiert werden.
'For the paper and chipboard factories, which experienced enormous growth during the last decades, the raw material wood may become scarce – unless unused potentials from private woods may be used, *after all (MP)*.' (HAZ09/JAN.00282 Hannoversche Allgemeine, 03.01.2009, S. 6; Die stillen Reserven)

The utterance marked with *doch* asserts a possible alternative that counters the negative expectation expressed in the previous one.

A similar use can be seen in example (47):

(47) Das kann man sehr wohl als tragikomisches Porträt nicht nur der argentinischen Gesellschaft verstehen. Dort wurden die Menschen schon früher und weitaus heftiger von der Krise getroffen. Die Argentinier haben daraus aber die Konsequenz gezogen, dass man in unsicheren Zeiten lieber drauflosleben sollte, anstatt sich zu sorgen – und letztlich *doch* nichts ändern zu können.
'This can indeed be understood as a tragi-comic portrait not only of Argentinian society. In that country, the people were hit by the crisis earlier and much harder. But the Argentinians came to the conclusion that it is better to live life to the full in insecure times rather than to worry – and *after all (MP)* not be able to change anything.' (HAZ09/JUN.01533 Hannoversche Allgemeine, 11.06.2009; *Ich bin in Hochstimmung*)

The utterance with *doch* counters an implication of the previous one: *through restraint and worrying the individual can improve the economic situation of the country*. The proposition that counters this implication is presumably part of the common ground.

In these examples, the replacement- or elimination-function of *doch* is most prominent. Whether or not the information presented in the *doch*-clause is common ground does not matter.

4.4 Doch as response particle

Like *ja*, *doch* can be used as a response particle:

(48) Familie W. aus Sassenburg ist auf den Hund gekommen. Nichts Ungewöhnliches? *Doch!* Denn die W.'s haben sich nicht für irgendeinen Hund entschieden, sondern für einen Elo.
Family W. from Sassenburg started to enjoy having a dog. Nothing unusual? *Oh, but yes!/ Fiddlesticks!* For family W. decided to get not just any kind of dog, but an *Elo*. (BRZ09/JAN.12487 Braunschweiger Zeitung, 29.01.2009; In Vierbeiner Ari steckt nur das Gute)

As this example illustrates, the particle can be the only linguistic item in an utterance when used as a response word. In this respect, *doch* patterns just like the response word *ja*. However, in contrast to *ja*, *doch* cannot be used to initiate questions. The response word *doch* typically gives an affirmative response to a negative question.

3.3 Summary

Sentence initial (i.e. non-modal) *doch* introduces utterances that convey an assumption which replaces its negation, which in turn was entertained earlier. This suggests that the information conveyed in the *doch* utterance is given such a high degree of evidential strength that it overrides its negation. The assumption conveyed in the utterance need not be common ground.

Sentence internal (i.e. modal) *doch* likewise introduces utterances conveying an assumption that replaces its negation, but this assumption is taken to be common ground, although the communicator thinks the audience may not entertain this assumption strongly enough.

5. Accounting for the meaning of modal particles

In the last three sections, I reviewed the properties of modal particles in German in general, and those of *ja* and *doch* in particular. Two of these properties in particular have shaped the development of analyses of modal particles profoundly: the non-truth conditional nature of these particles, and their relation to the common ground status of the information conveyed in the utterance in which they occur. Here, I will review these properties in somewhat more detail and argue that the best way to account for these properties is to approach them as having procedural meaning in the sense of Blakemore (1987, 2002, 2004).

5.1 Non-truth conditional semantics and procedural meaning

As Iten (2005) points out, the standard approaches to linguistic semantics rest on two principles: the principle of Compositionality and the principle of Semantic Innocence. The former principle says that the meaning of the whole sentence is determined in a principled, rule-based way from the meaning of its parts, whereas the latter principle says that the semantic contribution of a linguistic item does not change across contexts. As is well known, indexicals pose a *prima facie* challenge to the principle of Semantic Innocence since the truth-conditional content of these expressions depends on the context. This prima facie challenge can be overcome by adopting a suggestion famously proposed by Kaplan (1989) that the semantic meaning of indexicals is not the content communicated by a given use of the indexical, but by their *character*, which is basically a procedure to determine the referent of the indexical expression. This procedure is indeed the same across contexts. Wilson and Sperber (1993), reprinted in Wilson, Sperber (2012: 149–168), have argued that these procedures should be understood in psychological terms as constraints on the inferential phase of utterance interpretation, along the lines suggested by Blakemore (1987).

The idea that verbal communication crucially involves a layer of inference goes back to Grice's groundbreaking work (Grice 1957, 1967, 1989). Sperber and Wilson (1995) argued for the idea that the inferences involved in comprehension are constrained by a cognitive principle rather than by rational norms as envisaged by Grice. Another

idea suggested by many scholars in reaction to Grice's work is that pragmatic inference processes are involved not only in recovering the implicit side of communication (Grice's *implicatures*), but also in recovering aspects of the explicitly communicated meaning, Grice's *what is said*. Among the inferential pragmatic tasks in identifying the proposition conveyed are disambiguation, reference resolution, variable assignment, determination of quantifier domains in discourse, free enrichment of underdetermined expressions and lexical broadening and narrowing (see, for example, Carston 2002; Recanati 2004; Sperber, Wilson 1995; Wilson, Sperber 2012).

Taking these two ideas together, the following picture emerges: the study of how we comprehend the meaning of utterances must crucially involve a psychologically realistic account of how pragmatic inference processes work. Linguistic semantic information is fed to these pragmatic processes after being decoded by the grammar. Ideally, language should therefore be expected to encode semantic information in such a way that the pragmatic inference processes are served best. As Blakemore (2002) comments, this amounts to a reversal of the traditional formula 'semantics first, then pragmatics' to a view where pragmatics takes centre stage and (linguistic) semantic theory is shaped by asking how semantic information can best facilitate pragmatic processes. Consequently, the question of how well a certain semantic analysis of a linguistic expression integrates into pragmatic inferences will play an important role in the analyses below.

According to Sperber and Wilson (1995), Wilson and Sperber (2004), the human mind is oriented towards achieving efficiency in processing incoming stimuli: it tends to allocate processing resources to those inputs which promise to be most *relevant* in a technical sense. The relevance of an input to cognitive processes increases to the extent that the stimulus achieves *positive cognitive effects,* that is, improvements of the individual's representation of the world, for no unjustified *processing effort*. Sperber and Wilson show how this tendency towards processing efficiency gives rise to a comprehension procedure, a heuristic procedure of the following kind: access interpretive hypotheses for utterances (including hypotheses about intended context, implicit import and explicit content) in order of accessibility, starting with the one involving the least processing effort to access, and check whether the utterance, on this interpretation, yields cognitive effects of the expected kinds and levels. If so, accept the interpretation as the one intended by the communicator; if not, continue along a path of least effort until an interpretation satisfying relevance expectations is met or the processing effort involved does not warrant continuation.[1] It should be emphasized that in this procedure, context, implicit import and explicit content are calibrated in parallel.

Blakemore (1987) drew attention to the fact that on this general account of utterance comprehension, it is not only important to look at the representational content of mental representations conveyed by the utterance, but also to computations (that is, inferences) over those representations and the cognitive processing effort

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[1] For an explanation of the justification of this comprehension procedure, see Sperber and Wilson (1995) and Wilson and Sperber (2004).

that these incur. Arguably, this leads to the expectation that natural languages may contain expressions that do not only contribute to representational content, but also to information about the inferential processing of representational contents. Such expressions would have an important function in helping the audience save processing effort and hence optimize the addressee's search for relevance. Blakemore showed how analyzing expressions such as *but, so, after all, well* as encoding *processing procedures* in this sense can shed interesting new light on these and other expressions which are traditionally approached in terms of Grice's notion of *conventional implicatures* or Potts' (2005, 2007) notion of *at issue entailments*. Subsequent research has shown how Blakemore's procedural semantics can be extended to analyze the semantics of pronouns (Wilson, Sperber 1993; Wharton 2003b), attitudinal particles (Wharton 2003a, 2009), parentheticals (Ifantidou-Trouki 1993; Ifantidou 2001; Blakemore 2005) and other linguistic items in cognitive terms. Another strand of recent research addresses the question of how the procedural instructions that these indicators encode are mentally realized and is converging towards the hypothesis that procedural indicators raise the activation status of inferential heuristic (sub-)procedures that the comprehension procedure makes use of in its search for a relevant interpretation of utterances (Unger 2011; Wilson 2011). This raising of the activation levels of mental inferential procedures is often referred to as *triggering*.

Unger (2011: 118–119) illustrates this idea with the following example:

(49) a. The apple trees are full of fruit.
      b. It's been a good summer.

In processing the sequence of (49a) and (49b), the audience will have to decide whether the communicator intended the relation between these utterances to be (50a) or (50b):

(50) a. *The apple trees are full of fruit* is a reason for the communicator having concluded that *it has been a good summer*. *The apple trees are full of fruit* is a premise (among others) from which one can conclude *it has been a good summer*.
      b. The information *It has been a good summer* describes a reason for its being the case that *the apple trees are full of fruit*. *The apple trees are full of fruit* is evidence for the statement *it has been a good summer*.

Interpreting (49b) following the relevance-theoretic comprehension heuristic includes computing cognitive effects. In doing so, the comprehension heuristic makes use of other, smaller scale inferential procedures dedicated to various ways in which cognitive effects might be established. Among such smaller scale (sub-)procedures are the following:

(51) a. *Procedure A*: Assume that the explicature of the utterance conveys a premise. Find other assumptions, see whether they can be used as premises, and compute conclusions.
      b. *Procedure B*: Assume that the utterance conveys a conclusion. Find other assumptions that can be used as premises in an argument supporting the explicature of the utterance as a conclusion.

Sub-procedures such as *Procedure A* and *Procedure B* work in parallel, and one of them will deliver cognitive effects matching the audience's expectations. Linguistic items such as the connective *so* in English can be understood as raising the activation level of *Procedure B*. As a result, for an audience following the relevance-theoretic comprehension heuristic, *Procedure B* is more highly activated than *Procedure A*, and *Procedure B*'s output is more easily accessible than the outputs of other sub-procedures (such as that of *Procedure A*). Hence, this audience will be much more likely to use the outputs of *Procedure B* in the comprehension procedure than an audience that was not exposed to the procedure triggering effect of *so*. Moreover, the overall comprehension process has become more focused in the sense that the comprehension heuristic works as if the simplifying assumption that only *Procedure B* should be followed were built into the utterance interpretation process, resulting in a gain of efficiency of the comprehension process.

Linguistic items such as the English connective *so* raise the activation level of certain inferential procedures. This means, in other words, that words such as *so* establish a link between a linguistic item and a mental state of a language user, a state where certain inferential procedures are more highly activated. Other words such as *apple*, *red*, etc. that contribute to the truth conditions of the proposition conveyed in an utterance establish a link between a linguistic item and a mental concept. As Wilson (2011: 10–11) points out, although both mental concepts and mental procedures are not part of semantic competence, the link established between linguistic items and concepts, or between linguistic items and mental states of language users in which certain procedures are activated, amounts to semantic interpretation.

5.2 Mutual manifestness and pragmatic processing

As discussed in previous sections, the German particles *ja* and *doch* (and arguably, the whole class of modal particles) have, in their modal uses, the function of indicating common ground. Common ground is usually defined in terms of mutual knowledge or belief. Stalnaker (2002: 701) defines the common ground between communicator and audience as speaker presupposition: "To presuppose something is to take it for granted, or at least to act as if one takes it for granted, as background information – as *common ground* among the participants in the conversation." This common ground is based on what the communicators mutually believe:

> The common beliefs of the parties to a conversation are the beliefs they share, and that they recognize that they share: a proposition φ is common belief of a group of believers if and only if all in the group believe that φ, all believe that all believe it, all believe that all believe that all believe it, etc. (Stalnaker 2002: 704)

The common ground can deviate from common (or mutual) belief somewhat in the sense that the speaker may presuppose not only what they actually take to be common belief, but also what they *assume*, *presume*, or *pretend* to be common belief.

Notice that this definition of common ground on the basis of mutual belief contains an infinite regress. Sperber and Wilson (1995) point out that because of this

regress it is not possible to build a psychologically adequate theory of comprehension on the basis of this mutual belief-based notion of common ground. Such a notion of common ground requires the communicators to entertain a recursive, infinite belief representation, and for checking whether mutual belief exists, the communicators would have to go through an infinite series of checks. Instead, Sperber and Wilson (1995) argue that a psychologically adequate notion of common ground can be built around the notion of *manifestness* rather than that of belief or knowledge. A piece of information is *manifest* to an individual at a given time to the extent that the individual is capable of representing it mentally and accepting it as true or probably true. Thus, manifestness is a dispositional notion: it captures how likely it is that an individual will actually represent a certain piece of information. Manifestness is a matter of degree. A piece of information can be strongly manifest to the point that a mental representation of it is definitely entertained by the individual. In this case the individual can be said to believe or know this piece of information. Consider, for instance, a helicopter landing a hundred meters in front of your office window. The movement and noise is so unmistakable and unusual that you are bound to look out of the window and watch the scene. It is highly probable that you will mentally represent the information *There is a helicopter landing outside.*

However, a piece of information can also be weakly manifest in the sense that the individual is capable in principle of thinking about it. Imagine you are working in your office at twilight and are positioned so that you could look outside and see what is going on, but you are absorbed in your work. A bat is flying close by your window. In principle, you are capable of noticing this scene and representing in your mind the information *There is a bat flying by the window.* However, the bat flying by the window at twilight is not easy to notice, and you are paying more attention to other information at the time, so that the information about the bat flying past your window is not very salient. You are unlikely to even notice it, let alone represent the information *There is a bat flying by the window.* Still, it is manifest to you (albeit weakly so) that there is a bat flying by the window.

The set of pieces of information that are manifest to an individual at any given time constitute the *cognitive environment* of the individual. Our cognitive environment consists of all the information that we are in principle capable of representing to ourselves as facts (i.e. as true or probably true representations). Several people can share their cognitive environment. For instance, when two people are together in an office, the layout of the furniture and the presence of books and office material is manifest to each. Hence, their cognitive environments overlap. Moreover, the fact of their co-presence in the room is manifest to each of them. Hence it is manifest to each individual that they share a cognitive environment. When two persons share a cognitive environment in such a way that it is manifest to them that they share a certain cognitive environment, then the shared cognitive environment is a *mutual cognitive environment* in the terms of Sperber and Wilson (1995). The mutual cognitive environment consists of those pieces of information that are *mutually manifest* to those who share this environment. In other words, a piece of information is *mutually manifest* to two individuals A and B to the degree that

(a) the assumption is manifest to A, (b) the assumption is manifest to B, and (c) it is manifest to both A and B that they share a cognitive environment in which the assumption is manifest to both parties. Since manifestness is a dispositional notion, the notion of mutual manifestness does not lead to the kind of infinite regress that the notions of mutual belief or mutual knowledge lead to: mutual manifestness does not have to be represented, so there is no infinite representation to believe or know, let alone to check whether it holds.[2] The common ground in communication can be understood as the mutual cognitive environment between communicator and audience.

Recall the claim that the German particles *ja* and *doch* mark a certain piece of information as belonging to the common ground. Since manifestness is a matter of degree, "marking" some communicated information as mutually manifest should be interpreted as indicating that this information is mutually manifest *to a higher degree* than it would have been without the use of the particles. Moreover, since manifestness (and mutual manifestness) is a dispositional notion affecting the *likelihood* of a certain piece of information being represented (i.e. entertained) by an individual, using linguistic means to raise the degree of manifestness of a certain item in the cognitive environment amounts to raising the probability that the audience will actually entertain it. Hence, a linguistic indicator raising the degree of (mutual) manifestness can be relevant as a reminder, to make sure that the audience will actually use a certain piece of information from the common ground in processing this or a future utterance. Recall example (42) above, where weakly mutually manifest assumptions are brought to the audience's attention.

Relevance theoretic analyses of *ja* have been proposed by König (1997) and Blass (2000). At first sight, these two analyses seem quite different. König (1997) suggests that *ja*, in both modal and non-modal uses, indicates that the utterance is relevant in virtue of strengthening an assumption. In other words, the claim is that *ja* indicates the cognitive effect of contextual strengthening. Blass (2000), on the other hand, argues that *ja* in its modal use triggers a procedure to embed the proposition expressed under a propositional attitude description *It is mutually manifest that…* However, on closer inspection the analyses turn out not to be so very different. Recall that manifest information is information that the individual is capable of representing and accepting as true or probably true. The more *salient* the information is in the cognitive environment, the more likely an individual is to actually represent it; and the stronger evidence is available for its truth, the easier it is for an individual to evaluate the information as true or probably true. Hence, manifestness depends on two different properties of (pieces of) information: its cognitive *salience*, and its epistemic *evidential strength*. Against this background it is easy to see that a linguistic indicator pointing to the evidential strength of a piece of information is by definition an indicator that points to it being highly manifest. Seen in this light, both König's

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2   Of course, the communicators *may* in some cases mentally represent a proposition as mutually manifest. But this representation is not made on the basis of an infinite series of checks, but on the basis of the recognition of simple clues such as physical co-presence.

and Blass' analyses argue that *ja* is an indicator of a high degree of manifestness of the information conveyed in the utterance.

The main difference between König's and Blass' accounts is that König suggests that analyzing *ja* as an indicator of a high degree of manifestness in the sense of there being strong epistemic confirmation for the information communicated can shed light on both modal and non-modal uses of *ja*, whereas Blass (2000) does not attempt a unitary semantic analysis and restricts her account to modal uses of *ja*. As a consequence of this restriction, her analysis brings the mutuality of the information marked with *ja* more into focus. But again, the differences appear larger at first sight than after close inspection. Recall what it means for a linguistic item to 'indicate mutual manifestness': it means to increase the manifestness of assumptions about whom the piece of information in question is manifest to. Consider (52):

(52) a. (Susanne and Johannes are in the same office and a bat flies by the office window in the twilight. Both are seated so that they can notice the bat in principle, and both are busy with work. Susanne says to Johannes:)

Da   ist *ja*   eine Fledermaus am Fenster verbeigeflogen.
There is MP a   bat   by window flown
'A bat flew *MP* past the window.'

b. A bat flew past the window.
c. It is manifest to Johannes that a bat flew past the window.
d. It is manifest to Susanne that a bat flew past the window.

In this example, (52b) is mutually manifest to Susanne and Johannes even before Susanne's utterance. This means that besides (52b), the assumptions (52c)–(52d) are manifest as well. Susanne's utterance increases the manifestness of these assumptions. The utterance would achieve this effect without the particle *ja*. By using *ja* in her utterance, Susanne indicates that assumptions (52c)–(52d) should become even more strongly manifest to Johannes.

In other words, the function of indicating mutual manifestness can be reduced to the function of indicating manifestness, the difference being the target of what kind of pieces of information are to be made more manifest: in the case of indicating the manifestness of a piece of information I, it is the assumption I that is being made more manifest [assumption (52b) in the example above]. In the case of indicating the *mutual* manifestness of a piece of information I, it is assumptions about who shares the cognitive environment in which I is manifest that are being made more manifest [assumptions (52c)–(52d) in the example above].

This suggests that one could integrate the proposals by König (1997) and Blass (2000) in the following way: *ja* triggers a procedure to raise the degree of manifestness of some assumption communicated by the utterance in the sense of indicating that there is strong evidence for its truth (i.e. raising the epistemic strength factor of manifestness). Further pragmatic processing must identify whether it is the basic import of the utterance (i.e. its explicatures and implicatures) that are being made more manifest or whether assumptions about who shares the cognitive environment in which these explicatures or implicatures are manifest that are being targeted for

raising their manifestness to the audience. This line of analysis may indeed lead to a descriptively adequate account of modal and non-modal uses of *ja*.[3] However, it would fail to explain in systematic ways why unstressed *ja* in the syntactic middle field shows such a strong connection to indicating mutual manifestness, whereas *ja* outside of the middle field does not.

In fact, accounting in systematic ways for this correlation between word-order variation and prosody of particles and the particles' effect on the manifestness or *mutual* manifestness of the information conveyed in the utterance turns out to be the fundamental issue facing unified accounts of modal particles in German. This issue does not only arise for *ja*; as discussed above, it arises similarly for *doch*. In the next section I want to propose a way to approach this issue in a relevance-theoretic procedural account of *ja* and *doch*.

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3   Waltereit (2001) argues that such an account would fail to distinguish sufficiently between several particles that according to König (1997) likewise indicate contextual strengthening. It is true that König does not address this issue. However, the theory does provide sufficient tools to work out such a finer grained analysis. Apart from the idea that linguistic items may trigger more than one procedure [a line of analysis explored more fully by Blass (1990) with respect to the German modal particle *auch* in relation to its counterparts *also* in English and *má* in Sissala, as well as by Blass (2000) with respect to the German modal particles *ja*, *doch* and *wohl*], recall the observation that the notion of manifestness involves two factors: the cognitive salience and the epistemic strength of information. It is conceivable that linguistic indicators of manifestness may target these factors individually or collectively. In this paper I will not pursue this possibility further as it does not appear to be necessary to develop an explanatory account of *ja* and *doch*, which is the main focus of this paper.

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