3-30-2018

A Unified Account for German "doch"

Felicitas Enders
University of Konstanz

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Abstract

Doch is one of the German discourse particles that has been widely discussed in the literature (a.o. Grosz, 2014; Egg and Zimmermann, 2012; Karagjosova, 2009). There are two main challenges of providing a meaning for it: first, doch can be prosodically realized either unstressed (roughly as you know) or stressed (roughly after all) with the two realizations providing related yet different meanings. While some accounts focus on only one of the two realizations (a.o. Rieser, 2015; Grosz, 2014), other accounts pursue a unified account for both realizations, treating the two as one lexical item (a.o. Rojas-Esponda, 2014; Egg and Zimmermann, 2012). Second, one has to account for its distribution. While the occurrence of doch in declaratives can straightforwardly be explained in most accounts, its discourse initial use and its occurrence in other sentence types is often absent from the discussion of doch. I follow the line of previous accounts that treat the two prosodic realizations as a single lexical item and propose a new unified account in which both the unstressed and the stressed realization of doch conventionally convey the speaker's belief as well as her belief about the addressee's belief at a past time, attributing the difference in meaning contribution of the two realizations to the contribution of stress.

A Unified Account for German "doch"

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1 Introduction

The main challenge of providing the meaning for the German discourse particle *doch* is to account for its two prosodic realizations delivering two related yet different meanings. *Doch* can be realized either unstressed as in (1) ($doch_{us}$) or stressed as in (2) ($doch_s$).

(1)   A: Karl is coming to the party.
      S: Er ist $doch_{us}$ krank.
      'He is sick (as we know).'

(2)   A: Karl is coming to the party.
      S: Er kommt $doch_s$ nicht.
      'He doesn't come (after all).'

The paraphrases *as you know* for $doch_{us}$ and *after all* for $doch_s$ have sometimes been used in an attempt to capture their different meaning contributions. According to Egg and Zimmermann (2012) – giving an account which unifies the two *doch*'s – $doch_{us}$ in (1) roughly conveys that the speaker takes it to be common knowledge that Karl is sick, which is in conflict with the addressee's immediate claim that Karl will come to the party (the interlocutors know that sick people normally do not go to parties). $Doch_s$ in (2), according to Egg and Zimmermann (2012), contradicts A's preceding utterance. These proposals for $doch_{us}$ and $doch_s$ will be challenged in this paper.

Some accounts focus on only one of the prosodic realizations while being agnostic about whether or not, and if so in what way, the analysis can be extended to the prosodic counterpart (Rieser, 2015; Grosz, 2014; Kaufmann and Kaufmann, 2012; Egg, 2010). Others aim at unifying the two (Rojas-Esponda, 2014; Egg and Zimmermann, 2012; Karagjosova, 2009). The latter approach is in line with Féry's (2011) claim that in an intonation language like German only lexical stress but not sentence-level pitch accent can distinguish between lexical items. Since the stress in $doch_s$ is assigned at the sentence-level, the two realizations of *doch* should be treated as one lexical item.

An additional challenge for an analysis of *doch* is to account for its distribution. While examples like (1) and (2) can straightforwardly be explained in most accounts, discourse initial uses of *doch* and its occurrence in other sentence types are often absent from the discussion.

In this paper, I introduce a new unified account for *doch* in declaratives arguing that both, $doch_{us}$ and $doch_s$, conventionally convey the speaker's belief as well as her beliefs about the addressee's belief at a past time. At the end of the paper, I sketch how this account can be extended to imperatives, allowing for a truly unified account for *doch*. I leave the case of other sentence types in which $doch_{us/s}$ can occur, such as interrogatives and exclamatives, for future work.

2 A Unified Account for Unstressed and Stressed *doch*

2.1 *Doch*$_{us}$ in Declaratives

What all previous accounts for $doch_{us}$ have in common is that they aim at capturing the intuition that its prejacent is in some sense "familiar" information. Rojas-Esponda (2014), Bárány (2009) and Lindner (2001) assume $doch_{us}$ to retrieve its prejacent, *p*, from the common ground (CG), Grosz (2014) argues that *p* needs to be established, and Egg and Zimmermann (2012) take *p* to be undebatable. All of these assumptions capture the intuitions for examples like (1), where the speaker

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commits to believing that Karl is sick, and conveys that this was shared knowledge. However, we can find counterexamples for these proposals, the stricter ones arguing that p needs to be part of the CG, and the less strict ones arguing that p needs to be established or undebatable information. I first explore the CG status of the prejacent and then turn to the claim that it needs to be undebatable.

First, there are examples like (3) and (4) where $doch_{us}$ is felicitous although p is clearly not in the CG as Anna and Sue never had a conversation about p during which they both accepted that p (Stalnaker, 2002).

(3) *Anna's and Sue's friend Karl has the habit of calling them to complain whenever he feels sick. Yesterday, Sue got a call from Karl who wanted to let her know that he has a cold. Today, Anna and Sue are at a party.*
  A: Where is Karl?
  S: Er ist doch$_{us}$ krank.
  'He is $\left[doch_{us}\right]$ sick.'

(4) *Sue is shopping with her mum Anna. In the store, Sue sees a t-shirt and shows it to her mum.*
  S: Guck mal, Mama, das ist doch$_{us}$ schön!
  'Look mum, this one is $\left[doch_{us}\right]$ nice!'

In uttering $doch_{us}(p)$ the speaker conveys that even though she used to believe the prejacent to be true, and used to believe that the addressee believed it too, the belief does not need to hold at the time of the utterance nor is this past belief necessarily part of the CG. That is, I propose that $doch_{us}$ conventionally conveys that the speaker believed p at a time before the utterance time, and believed *that the addressee also believed p* at a past time but the speaker does not make any commitment about p at the time of the utterance. In (3), the speaker conveys that – at a time before uttering in this context that Karl was sick – she believed Karl was sick, and that she believed that the addressee also believed that Karl was sick.[1] It certainly needs to be the case that the addressee is able to accommodate how the speaker came to have beliefs about the addressee's beliefs, i.e. the speaker needs to have a "good reason" to believe that the addressee believed p (leaving open that she may still do) and the addressee can accommodate that this is the case. In (3), Karl's call allows her to form the belief that the addressee believed p. Since in the past Karl has also called Anna (and Sue knows this), Sue can rightfully assume that Anna also got the call (at least up to the time when Anna wonders about Karl's whereabouts). That is, the speaker is making use of her and the addressee's knowledge of regularities here. In contrast, in (5), Anna cannot accommodate how Sue can have beliefs about her beliefs since Anna did not know Sue before nor does she know Karl. Consequently, the use of $doch_{us}$ is infelicitous.

(5) *Anna is working at a party, checking the attendance list. At midnight, the host, Sue, asks if everybody showed up. Anna, who doesn't know any of the guests, goes through the list.*
  A: Karl didn't come.
  S: # Er ist doch$_{us}$ krank.
  'He is $\left[doch_{us}\right]$ sick.'

The conventional meaning of $doch_{us}$ proposed here is compatible with cases where p is part of CG, while accounting for the fact that it is not required that p is in the CG.

Let us look at (4) more closely. Here, p is not something Sue and her mum could have had any beliefs about at a past time if we assume that they haven't seen that particular t-shirt before. The speaker rather conveys that from her own taste it follows that she thinks the t-shirt is nice, and that from all the background she has about her mum she thought her mum believed that the t-shirt was nice (leaving open the possibility that this may not be the case anymore). The use of $doch_{us}$ makes this utterance a polite request since what is at issue is whether p still holds at the time of the

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[1] Given that Anna is now wondering where Karl is, it is not clear whether it still holds. This is supported by the fact that the speaker in (3) could follow-up her utterance with the tag *oder?* (roughly 'isn't he?') which indicates a tentative but not an actual commitment to p at the time of the utterance (Malamud and Stephenson, 2015). I return to this below.

utterance. If Sue's mum admits that p still holds, i.e. that she believes that the t-shirt is nice at the time of Sue's utterance, she basically has to buy the t-shirt for her daughter. That shows that p can be entailed by the speaker's beliefs about the addressee but not necessarily by the CG in the way proposed by Repp (2013).

Second, I argue that $doch_{us}$ neither conventionally commits the speaker to its prejacent at the time of the utterance nor is $doch_{us}$ only felicitous when combined with undebatable or already established information. When using $doch_{us}$ in a tag-question as in (6), the speaker is not stating p, and thus committing to p, but she is actually checking *whether p* still holds. More precisely, while she is committing to having believed that p at a time before the utterance time, and having believed that the addressee believed p at a time before the utterance time, the tag asks whether p holds at the time of the utterance. That is to say, when using $doch_{us}$, what is at issue is not the past belief (since the speaker is privileged to her own beliefs) but whether the past belief still holds at the time of the utterance. Up to the discourse antecedent – here Anna's question where Karl is – the speaker has no reason to believe that her past belief p will not hold at the time of the utterance. Due to the discourse antecedent, however, the speaker has reason to believe that it is not the case that the addressee believes p at the time of the utterance. Note, however, that the speaker's stance towards p at the time of the utterance is not conventionally conveyed by $doch_{us}$. Only her past beliefs are. That is, $doch_{us}$ only conventionally conveys the speaker's past beliefs about its prejacent but no current stance towards it. Consequently, $doch_{us}$ is compatible with the speaker asking whether p at the time of the utterance, and signaling that she still tentatively commits to p.[2]

(6) *Karl told Sue and Anna two days ago that he was sick. Now, Anna and Sue are at a party.*

    A: Where is Karl?
    S: Er ist $doch_{us}$ krank, oder?
    'He is $[doch_{us}]$ sick, isn't he?'

An extreme case where the discourse antecedent calls into questions whether the speaker's past belief that p and her belief that the addressee believed p still holds at the time of the utterance is presented by contradictions such as (7). Here the speaker conveys that she used to believe and still believes at the time of the utterance that the flowers are ugly, and that given what Sue can assume from her knowledge about Anna, she believed that Anna would also think that the flowers are ugly (the data regarding $doch_{us}$ allows to show that the conclusions drawn from our knowledge and regularities can be questioned and taken to not hold). The speaker's past belief about the addressee's belief and the current utterance of the addressee are not only potentially – as in all the other cases we have seen here – but absolutely incompatible.

(7) *Anna and Sue are at the flower shop. Anna points at some flowers and says:*

    A: Diese Blumen sind schön.
    'These flowers are beautiful.'
    S: Die sind $doch_{us}$ hässlich.
    'They are $[doch_{us}]$ ugly.'

Concluding these observations, I propose that with $doch_{us}(p)$, the speaker conventionally conveys that she believed p at a time t before the utterance time ($t < t_@$),[3] and that she believed that the

[2] In that respect, $doch_{us}$ differs from *ja* (literally 'yes'), both of which have often been looked at in comparison as it is assumed that there is some overlap in the meaning contribution of the two (Döring, 2016; Grosz, 2014; Bárány, 2009). According to Grosz (2014), both, $doch_{us}$ and *ja* roughly signal that their prejacent is established. Viesel (2015), however, shows that *ja* conveys that its prejacent is not necessarily known to anyone but the speaker. That is, *ja* signals the speaker's (and possibly the hearer's) stance towards its prejacent, namely that she considers it to be known, at the time of the utterance, while $doch_{us}$ does not conventionally commit the speaker to p at the time of the utterance but only to her past beliefs.

[3] Claiming that $doch_{us}(p)$ conveys what the speaker herself used to believe and what she believed the addressee believed, does not require the two believes to come about at the same time. In (1), the speaker forms her belief that p on Monday and it is only on Wednesday that she has reason to believe that the addressee also believes p.

addressee also believed p at a past time t. The consequence is that, by using $doch_{us}$, the speaker implicates that at the time of the utterance it is not the case that she believes that the addressee believes p. If that were the case, the speaker would have made a $doch_{us}$-less stronger claim concerning their current beliefs.[4] The meaning of $doch_{us}$ and the conversational implicature ($\rightsquigarrow$) are formalized in (8).

(8) Where $B_{X,t}$ is the set of beliefs of participant X at a time t:

$$\llbracket \mathbf{doch_{us}}(p) \rrbracket = B_{S,t}(p \in B_{S,t})^5 \,\&\, B_{S,t}(p \in B_{A,t}), \text{ for } t < t_@$$
$$\rightsquigarrow \neg(B_{S,t}(p \in B_{S,t} \,\&\, B_{S,t_@}(p \in B_{A,t_@}))$$

The conversational implicature is that the meaning contribution of $doch_{us}$ does not hold at the time of the utterance and hence, we have negation over the conjunction of the two past beliefs. There are logically three scenarios regarding what can be conversationally implicated by $doch_{us}$:

(9) 1. Negation of the first conjunct: it is not the case that the speaker believes that p at $t_@$, and the speaker believes that the addressee believes that p at $t_@$

2. Negation of the second conjunct: the speaker believes p at $t_@$, and it is not the case that the speaker believes that the addressee believes that p at $t_@$

3. Negation of both conjuncts: it is not the case that the speaker believes that p at $t_@$ and that the speaker believes that the addressee believes that p at $t_@$

Both, the first and the third scenario are ruled out. Given the speaker is maximally cooperative, she still has to believe p at the time of the utterance when using $doch_{us}$. Otherwise, she would utter $\neg p$. That is, when using $doch_{us}(p)$, the speaker conveys that she believed p and that she believed the addressee believed p at a time before the utterance time. Consequently, the use of $doch_{us}$ implicates that the speaker (tentatively) believes p at the time of the utterance. The only reason to utter $doch_{us}(p)$ then is to signal that the speaker believes that the addressee may not believe p at the time of the utterance.

As mentioned in section 1, $doch_{us}(p)$ can also occur discourse-initially as in (10).

(10) *Sue isn't sure whether she has bought the right food for her puppy. She is visiting her friend Anna who, she believes, knows a lot about dogs but she is not sure whether she remembers it correctly.*

S: Du kennst dich $doch_{us}$ mit Hunden aus.
'You know $[doch_{us}]$ a lot about dogs.'
What food is good for my puppy?

Unlike in the other cases where a discourse antecedent – the conversational linguistic or non-linguistic behavior of the addressee – could be reconstructed, these discourse-initial uses do not have

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(1) *Karl told Sue that he was sick on Monday. When she brought him medicine on Wednesday, he told her that all their friends know that he is sick. On Friday, Sue and Anna are at a party.*
A: Where is Karl?
S: Er ist $doch_{us}$ krank.
'He is $[doch_{us}]$ sick.'

[4]The speaker might either have made a plain assertion without any discourse particle or use the discourse particle *ja* instead, which according to Viesel (2015) signals that its prejacent is known to the speaker and possibly the addressee. That is, $doch_{us}$ and *ja* might be scalar competitors in terms of signaling the speaker's stance towards her past beliefs. A *ja*-utterance then would be a stronger claim than a plain assertion since it signals that at the time of the utterance, the speaker takes the prejacent to be known, while a $doch_{us}$-utterance would be a weaker claim than a plain assertion since the speaker implicates that her past beliefs might not hold anymore at the time of the utterance. This scalar competition between *ja*, $doch_{us}$ and a plain assertion, however, remains to be investigated.

[5]Instead we could have written the shorter $B_{S,t}(p)$. While this amounts to the same in the case of declaratives, it will become a crucial difference when generalizing the lexical entry for $doch_{us}$ and $doch_s$ as we will see below.

a discourse antecedent. Hence, the implicature that it is not the case that the speaker believes that the addressee believes p does not arise since for the conversational implicature to arise it has to be at issue whether the stronger claim holds (here whether the belief still holds at $t_@$). Still, the speaker is using a weaker form rather than plainly asserting p. Thereby, the speaker is opening the discussion whether p still holds at $t_@$ and, hence, giving the addressee room to manoeuvre regarding her next discourse move. She can, for example, accept the speaker's discourse move (i.e. accept that it is the case that she used to know a lot about dogs), while also being able to claim that p is not the case anymore, which is less "violent" than rejecting the assertion that p is believed at $t_@$ by the addressee or rejecting the assertion that p is the case at $t_@$, making this a politer discourse move than the plain assertion.

2.2 *Doch*ₛ in Declaratives

According to Egg and Zimmermann (2012), $doch_s(p)$ requires a discourse antecedent $\neg p$ expressed in the preceding context, and expresses a contrast between this antecedent and its prejacent. Consequently, they would predict $doch_s$ to be felicitous in both (11a) and (12) since in both cases there is Anna's preceding utterance stating that $\neg p$. However, the use of $doch_s$ is infelicitous in (11a). I argue that this infelicity is due to the fact that the speaker never had a past belief $\neg p$: $doch_s(p)$ establishes a possible contrast with a past belief $\neg p$ and not with the immediately preceding assertion that $\neg p$. In this way, $doch_s$ differs from $doch_{us}(p)$ only in what was previously believed: stress in $doch_s$ indicates that the past belief is $\neg p$ and not the prejacent itself. In (12), where the context establishes what was believed in the past, the use of $doch_s$ is felicitous. In the scenario where the speaker did not have a past belief $\neg p$, the plain declarative without $doch_s$ is felicitous (see (11b)) (The capital letters indicate stress), while its counterpart containing $doch_s$ is not (see (11a)).

(11)   *Karl told Anna that he wouldn't come to her party. He then changed his mind and told Sue that he would come without telling her about his original plan.*
A: Karl isn't coming to the party.

   a.   S1: # Er kommt doch$_s$.
'He is [$doch_s$] coming.'
   b.   S2: Er KOMMT.
'He IS coming.'

(12)   *Karl told Anna and Sue that he wouldn't come to their party. He then changed his mind but only told Sue about it.*
A: Karl isn't coming to the party.
S: Er kommt doch$_s$.
'He is [$doch_s$] coming.'

Given that $doch_s(p)$ establishes that $\neg p$ was believed by the speaker and believed to be believed by the addressee, to keep up with discourse relevant constraints, $doch_s(p)$ is indeed often preceded by an utterance stating that $\neg p$. Such antecedent, however, is not necessary. In (13), Karl's habit of spending the weekends at his parents' house is the reason why the speaker believes that Karl will not be home ($\neg p$) and believes that the addressee also believes $\neg p$ at a time before her $doch_s$-utterance (showing that as for $doch_{us}$, the speaker's past belief might arise due to her knowledge about regularities). Since the sign in the window is visible to both the speaker and the addressee, the speaker has no reason to believe that the addressee still believes $\neg p$ at the time of the utterance but instead has reason to believe that they both believe p. Hence, uttering $doch_s(p)$ is not only justified when marking a contrast with a discourse antecedent but also when the speaker wants to make at issue the change of her beliefs and her beliefs about the addressee's beliefs from $\neg p$ to p.

(13)   *Anna's and Sue's flatmate Karl normally spends the weekends at his parents' house. If not, he puts up a sign in the window. Anna and Sue are coming home on Friday night, when Sue sees the sign.*
S: Guck mal, Karl ist doch$_s$ zuhause.
'Look, Karl is [$doch_s$] at home.'

There is yet another scenario that can justify uttering $doch_s(p)$. In (14) where $doch_s$ occurs in a rising declarative, the speaker conveys that in the past she believed that Karl would not come to the party ($\neg p$), and that she believed that the addressee believed $\neg p$. Moreover, she implicates that at the time of the utterance she still believes $\neg p$ and that it is not the case that she believes the addressee believes $\neg p$. That is, the speaker has reason to believe that the addressee believes p at the time of the utterance since Anna lists Karl among the people coming to the party which is why she is conveying her past belief and is checking whether it still holds at the time of the utterance.[6]

(14) *Karl told his friends Sue and Anna that he wouldn't come to their party at the weekend. Sue and Anna are now doing the planning and Anna is listing all the people coming to the party.*

A: Mia is coming, Karl is coming . . .
S: Karl kommt doch$_s$?
'Karl is coming?'

In (15b), the observations for $doch_s$ are formalized and the lexical entry for $doch_{us}$ is repeated in (15a).

(15) Where $B_{X,t}$ is the set of beliefs of participant X at a time t:

    a. $[\![\mathbf{doch_{us}}(p)]\!] = B_{S,t}(p \in B_{S,t})$ & $B_{S,t}(p \in B_{A,t})$, for $t < t_@$
       $\leadsto \neg(B_{S,t_@}(p \in B_{S,t})$ & $B_{S,t_@}(p \in B_{A,t_@}))$

    b. $[\![\mathbf{doch_s}(p)]\!] = B_{S,t}(\neg p \in B_{S,t})$ & $B_{S,t}(\neg p \in B_{A,t})$, for $t < t_@$
       $\leadsto \neg(B_{S,t_@}(\neg p \in B_{S,t})$ & $B_{S,t_@}(\neg p \in B_{A,t_@}))$[7]

As for $doch_{us}$, there are three possible scenarios instantiating the conversational implicature:

(16) **Doch$_s$**

    1. Negation of the first conjunct: it is not the case that the speaker believes that $\neg p$ at $t_@$, and the speaker believes that the addressee believes that $\neg p$ at $t_@$

    2. Negation of the second conjunct: the speaker believes $\neg p$ at $t_@$, and it is not the case that the speaker believes that the addressee believes that $\neg p$ at $t_@$

    3. Negation of both conjuncts: it is not the case that the speaker believes that $\neg p$ at $t_@$ and that the speaker believes that the addressee believes that $\neg p$ at $t_@$

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[6]We can find the parallel scenario for $doch_{us}$ in rising declaratives as in (1), which differs from (14) in that the speaker conveys that she still believes p at $t_@$ and wonders whether the addressee does so, too.

(1) *Karl told Sue and Anna two days ago that he was sick. Now, Anna and Sue are at a party.*

A: Where is Karl?
S: Er ist doch$_{us}$ krank?
'He is $[doch_{us}]$ sick?'

[7] As for $doch_{us}$, the speaker's past belief that $\neg p$ and the belief that the addressee also believed $\neg p$ can but do not need to come about at the same past time. In (1), Sue's belief that Karl will not come to the party ($\neg p$) formed on Monday. But her belief that Anna also believes $\neg p$ only forms immediately before her $doch_s$-utterance, that is, when Anna says that Karl will not come to the party. Before that Sue did not have any reason to believe that Anna believed $\neg p$.

(1) *Normally, Karl doesn't miss a single party. But on Monday, he told Sue in confidence that he won't come to the next party as he has to go to prison. He then told Sue that he can come to the party after all since he does not actually has to go to prison but will be on parole. Now, Sue is talking about the upcoming party with her friend Anna who also knows Karl.*

A: Karl is not coming to the party.
S: Er kommt doch$_s$.
'He is $[doch_s]$ coming.'

Unlike for *doch*$_{us}$, however, we have seen that this flexibility is in fact required since we can find examples for scenario 1 (see (12)), scenario 2 (see (14)) as well as scenario 3 (see (13)). The question of what causes this difference between *doch*$_{us}$ and *doch*$_s$ remains unresolved and is left for future research to be answered.

To sum up and comparing (15a) and (15b), both, *doch*$_{us}$ and *doch*$_s$ convey the speaker's past belief and her belief about the addressee's belief at a past time with the only difference being that the prejacent of *doch*$_{us}$ is of the same polarity as the past belief, while the prejacent of *doch*$_s$ is of opposite polarity. This difference follows naturally from assuming that stress signals contrast as it does in other linguistic environments.

3 Outlook: Extending the Account to Imperatives

Extending the proposal for the meaning of discourse particles to clause types other than declaratives is difficult since these other environments often come with secondary interpretive effects such as expressing paralinguistic categories like certain emotions, or triggering indirect speech acts (Zimmermann, 2011). Nevertheless, accounts for *doch* should aspire to account for occurrences across sentence types as it is desirable to assume one lexical item instead of "different" *doch*'s. Accounts for *doch* that look beyond declaratives are, for instance, Kaufmann and Kaufmann (2012) for *doch*$_{us}$ in imperatives and Egg (2010) for *doch*$_{us}$ in questions. In what follows, I focus on imperatives. The main claim is that the lexical entry for *doch* in declaratives as proposed in (15) can be generalized to apply across sentence types, i.e. there really is only one *doch*. The advantage of the present account is that we do not have to make any stipulations for sentence types other than declaratives. Instead we only have to account for the fact that *doch*$_{us/s}$ can operate on different modal bases – sets of propositions that form the base of the evaluation of the *doch*-utterance –, with the kind of modal base depending on the sentence type of the host utterance. *Doch* "knows" what modal base to operate on since it scopes over the particular sentence-type operator (Zimmermann, 2011).

(17) Where $\text{MB}_{X,Y,t}$ is type X of the modal base for participant Y at a time *t*:

  a. $[\![\textbf{doch}_{\textbf{us}} \text{ SENTENCE-TYPE}(p)]\!] = B_{S,t}(p \in \text{MB}_{X,S,t}) \ \& \ B_{S,t}(p \in \text{MB}_{X,A,t})$, for $t < t_@$

  $\rightsquigarrow \neg(B_{S,t}(p \in \text{MB}_{X,S,t}) \ \& \ B_{S,t}(p \in \text{MB}_{X,A,t}))$

  b. $[\![\textbf{doch}_{\textbf{s}} \text{ SENTENCE-TYPE}(p)]\!] = B_{S,t}(\neg p \in \text{MB}_{X,S,t}) \ \& \ B_{S,t}(\neg p \in \text{MB}_{X,A,t})$, for $t < t_@$

  $\rightsquigarrow \neg(B_{S,t}(\neg p \in \text{MB}_{X,S,t}) \ \& \ B_{S,t}(\neg p \in \text{MB}_{X,A,t}))$

This allows *doch*$_{us/s}$ to operate on beliefs, i.e. an epistemic modal base ($\text{MB}_{\text{EPISTEMIC},Y,t}$ which is equivalent to $B_{Y,t}$ in (8) and (15)), in the case of declaratives. Following Condoravdi and Lauer (2012), I take imperatives to signal the speaker's preferences and, hence, *doch*$_{us/s}$ to operate on preferences, i.e. a bouletic modal base ($\text{MB}_{\text{BOULETIC}}$), in the case of imperatives (see (18)).

(18) Where $\text{MB}_{X,Y,t}$ is type X of the modal base for participant Y at a time *t*:

  a. $[\![\textbf{doch}_{\textbf{us}} \text{ IMP}(p)]\!] = B_{S,t}(p \in \text{MB}_{\text{BOULETIC},S,t}) \ \& \ B_{S,t}(p \in \text{MB}_{\text{BOULETIC},A,t})$, for $t < t_@$

  $\rightsquigarrow \neg(B_{S,t}(p \in \text{MB}_{\text{BOULETIC},S,t}) \ \& \ B_{S,t}(p \in \text{MB}_{\text{BOULETIC},A,t}))$

  b. $[\![\textbf{doch}_{\textbf{s}} \text{ IMP}(p)]\!] = B_{S,t}(\neg p \in \text{MB}_{\text{BOULETIC},S,t}) \ \& \ B_{S,t}(\neg p \in \text{MB}_{\text{BOULETIC},A,t})$, for $t < t_@$

  $\rightsquigarrow \neg(B_{S,t}(\neg p \in \text{MB}_{\text{BOULETIC},S,t}) \ \& \ B_{S,t}(\neg p \in \text{MB}_{\text{BOULETIC},A,t}))$

3.1 *Doch*$_{us}$ in imperatives

What is puzzling about *doch*$_{us}$ in imperatives is that it is compatible with some illocutionary forces of imperatives such as advise and pleas, while it is incompatible with others such as permissions and commands. Consider the command in (19).

(19) *None of the students in Sue's class can focus because Anna, a student, is listening to very loud music.*

S: Mach die Musik aus!
'Turn off the music!'
Or do you think that won't help?

If we take commands to be proposals for future action that align with the speaker's prefer-ences regardless of what the addressee's preferences may be, it is expected to be odd to follow-up a command by asking about the addressee's opinion about the proposed action. In contrast, such a follow-up is fine in the case of advise – proposals for future action in which the speaker aligns her preferences with the addressee's preferences – as can be seen in (20). That is, unlike commands, advise seems compatible with checking whether *p* holds at the time of the utterance.

(20)   *Anna is listening to very loud music.*

A: I have such a horrible headache today!
S: Mach doch_{us} die Musik aus!
'I advise you to turn off the music.'
Or do you think that won't help?

*doch*_{us} is not possible in an imperative with a command or permission interpretation because in order to interpret an imperative *!p* as a command or permission, we need to understand that the speaker still prefers that *p* at the time of the utterance, not just that she used to prefer *p* and believed the addressee preferred it too.

In (20), the speaker conveys that up to the discourse antecedent – Anna's complaint – she believed they both took *p*, i.e. turning of the music, to be the preferred action in a situation where somebody has a headache. Since Anna keeps listening to music despite her complaint, Sue has reason to believe that *p* might not hold anymore. Hence, she can use the advise *doch*_{us}(*!p*) to check whether her past believes about the addressee's preferences, and, hence, her own, still hold, i.e. whether *p* is still preferred at the time of the utterance.

The use of *doch*_{us} often has the secondary interpretative effect of giving rise to politeness. We have already seen that in the discourse-initial declarative in (10), where *doch*_{us} was used to give the addressee room to manoeuvre. Something similar can be observed when comparing invitations conveyed by an imperative with and without *doch*_{us} (see (21b) and (21a)). That the latter is politer than the former follows from the meaning of *doch*_{us} argued for here: by using *doch*_{us} the speaker conveys that she believed that *p* was preferred by the addressee and signals that *p* was also part of the speaker's preferences, hence that *p* was to be brought about was not under discussion and that, hence, it was not even necessary for her to suggest to the addressee to do *p*. The speaker implicates, though, that she believes that it is not the case that the addressee believes *p* at the time of the utterance which is justified by the addressee's lacking action to sit down.

(21)   a.   Setz dich!
           'Take a seat!'
       b.   Setz dich doch_{us}!
           'Take [*doch*_{us}] a seat!'

3.2 *Doch*_s in Imperatives

Unlike *doch*_{us}, *doch*_s in imperatives is not restricted to certain illocutionary forces. However, for it to be felicitous in an imperative the speaker needs to have a past preference ¬*p*, corresponding to the past belief ¬*p* in declaratives. In (22), *doch*_s is infelicitous since this is not given. There is a preceding command contradicting Sue's command but Sue did not have a past preference ¬*p*.

(22)   *Sue's and Anna's daughter was playing outside and now wants to come inside.*

A: Don't come inside!
S: # Komm doch_s rein!
'Come [*doch*_s] inside!'

In (23a), Sue had a past preference $\neg p$, and the addressee, her daughter, knows that Sue has reasons to believe that she also had the preference $\neg p$ at a past time since Sue told her to stay outside.[8] Hence, the requirements of a past preference and the addressee being able to accommodate the existence of that past preference are fulfilled, and using $doch_s$ is felicitous. It is possible to have a command interpretation for an imperative $doch_s(!p)$ since it is compatible with p being the speaker's preference at the time of the utterance and with conveying that the speaker's and addressee's preferences are not aligned anymore at $t_@$.

As in the case of declaratives, in (23b) the speaker using $doch_s$ conveys that she had a past preference. However, since the addressee is not able to accommodate this fact, the $doch_s$-utterance is infelicitous.

(23)   a. *Sue's daughter has been playing outside and now wants to come inside. Sue told her to stay outside but then it starts to rain.*
           S: Ok, komm $doch_s$ rein!
           'Ok, come $[doch_s]$ in!'
        b. *Sue's daughter has been playing outside and now wants to come inside. Sue hoped she would play outside for a little longer but now it is raining.*
           S: # Ok, komm $doch_s$ rein!
           'Ok, come $[doch_s]$ in!'

As for $doch_s$ in declaratives, a preceding utterance stating that $\neg p$ is not a necessary requirement for $doch_s$ to be felicitous in imperatives. In (24), Sue's pouring Anna another glass of wine gives rise to the inference that Sue wants Anna to stay. This non-linguistic behavior serves as the discourse antecedent, i.e. as the past preference $\neg p$ (*that Sue does not want Anna to go home*), which is also available to Anna.[9]

(24)   *Anna and Sue have been drinking wine at Sue's place. Sue pours Anna another glass of wine but then looks at her watch and realizes how late it is already.*
        S: Geh $doch_s$ nach Hause!
        'Go $[doch_s]$ home!'

4 Summary

I have introduced a unified account for the two prosodic realizations of German *doch* by considering the contribution of stress – similar to what is argued for contrastive stress. Both $doch_{us}$ and $doch_s$ conventionally convey the speaker's own beliefs as well as her beliefs on the addressee's beliefs at a past time. I have also sketched how this account can be extended to imperatives, which needs to be examined in greater detail in the future. I also leave for the future the investigation of how this proposal can be extended to other clause types such as questions and exclamatives in which both, $doch_{us}$ and $doch_s$ can occur as well.

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[8] Although the daughter might not *prefer* $\neg p$ is also her preference since Sue – as the mother – in a way is an authority. By virtue of that status, her preference becomes the daughter's preference (Condoravdi and Lauer, 2012).

[9] If the two contrasting preferences immediately follow each other, it seems to be required that there is some kind of event that justifies the speaker's change of mind and makes it recognizable for the addressee. In (24), this is fulfilled by Sue looking at her watch.

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Department of Linguistics
University of Konstanz
78464 Konstanz, Germany
felicitas.enders@uni-konstanz.de