

The locus of uncertainty and commitment in speech acts: comparing *daroo* and *wohl*

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1 Introduction

Discourse particles, of which Japanese and German have particularly productive inventories, have received much attention in the formal pragmatic research of recent years for at least two reasons. First, they enter the syntactic and semantic derivation of the sentence like other natural language expressions but are difficult to capture in formal theories of language meaning and structure (*cf.* for instance Kratzer’s (1999) remarks on *ja*). Second, as they contribute to linguistic meaning independently of truth conditions and due to their status as discourse signals that inform about the speaker’s communicative stance, they provide motivation as well as a testing ground for theories of discourse meaning in particular and non-descriptive meaning in general.

Extant formal research on Japanese and German discourse particles builds on a large body of descriptive work that exists for both languages. However, it has largely been pursued independently for each language and much more comparative research is needed in order to reach a fully cross-linguistic, formal account of discourse particles as a class of natural language expressions. In this paper, I contribute to the project of approaching such an account with an analysis of Japanese *daroo* and German *wohl* that accounts not only for their surprisingly similar meanings, but also for puzzling differences in utterance type restrictions they exhibit. I accomplish this by assuming a small difference in the way that *daroo* and *wohl* modify the (Gricean) quality threshold and thereby determine the locus and agent of uncertainty within a speech act. I first briefly discuss extant research, then introduce the observations to be accounted for, and finally move on to presenting the analysis proper.

2 Previous comparative research

The remarkably similar meanings of Japanese *daroo* and German *wohl* have already been pointed out by Hara (2006), who claims that both particles introduce uncertainty and enter the derivation of utterance meaning after question alternatives are formed based on a test devised by Zimmermann (2004, 2008) for *wohl*. Zimmermann gives the paraphrase in (2-a), as opposed to that in (2-b), for *wohl*-questions (*i.e.* interrogative utterance with final rising intonation) such as the one shown in (1), where the prejacent proposition φ is “Hein is at sea”.

- (1) Ist Hein *wohl* auf See?
“Is Hein *wohl* at sea?”
- (2) a. Tell me (granted a degree of uncertainty) whether φ or not.
b. Tell me whether you assume φ , or whether you don’t assume φ .

That (2-a) better represents intuitions regarding the meaning of (1) shows that *wohl* differs from probability adverbs expressing uncertainty such as *wahrscheinlich* ‘probably’ in that it is not part of the propositional content that question alternatives are based on — if this were the case, (2-b) would

be expected to better represent (1). Hara compares this to *daroo* with similar results, but cannot use fully equivalent utterances as Zimmermann (2004) tests questions, *i.e.* rising interrogatives, but *daroo*-interrogatives are incompatible with final rising intonation (note that this is precisely the contrast I am interested in). Instead, Hara compares *wohl*-questions with falling *daroo*-interrogatives she takes to be “selfaddressing questions” and claims that they convey “the speaker is not asking himself/herself about the probability but about the content of the proposition” and that thus *daroo*, just like *wohl*, is not part of the propositional content of the utterance. While I take falling interrogatives to be expressions of doubt rather than self-addressed questions, I model *wohl* and *daroo* as speech-act modifiers that introduce uncertainty by lowering the quality threshold and enter the derivation after assertive or interrogative force and are thus not part of the prejacent proposition.

Regarding the incompatibility of *daroo*-interrogatives with final rising intonation I seek to explain, Hara and Davis (2013) propose that *daroo* is deictic in that intonation resolves the agent of belief it refers to and thus the locus of uncertainty to either speaker or addressee (a footnote in Hara (2006) already hints at this). On my view, such deictic meaning is not introduced by *daroo*, but all utterances are deictic in that intonation resolves the agent of commitment or forgone commitment (see 4.1), and both *daroo* and *wohl* modify the strength of this commitment (or forgone commitment in the case of interrogatives), but in slightly different ways. This parsimoniously explains the differences in utterance type restrictions discussed in 3.2.

3 Observations on *daroo* and *wohl*

Both *daroo* and *wohl* convey uncertainty with regard to the propositional content on a non-propositional (or non-descriptive) level of meaning. Their contribution is mostly parallel: both *daroo*- and *wohl*-assertions (falling declaratives), for instance, convey that the speaker is uncertain or in doubt with regard to the prejacent’s truth. Some differences can be explained by difference particle inventories of German and Japanese, as I discuss below, before moving on to the more puzzling contrast in utterance type restrictions motivating the analysis that *daroo* and *wohl* encode different loci of uncertainty.

3.1 Differences in use

In this section, I discuss two differences in the uses of *daroo* and *wohl*. First, *daroo* is apparently evidence sensitive as it can not be used to express results of evidence-based inference in isolation, requiring addition of the particle *no* for this. Second, *wohl* can not be used in common-ground forming or convincing utterances that convey an exasperated nuance in isolation, but can only co-occur with the particle *doch* in such utterances. I maintain that, while *daroo* and *wohl* have essentially the same function — they convey uncertainty by lowering the quality threshold — differences in use like those discussed here are due to differences in the particle inventories of German and Japanese.

Hara (2006) shows with (3) (translated from Izvorski 1997) that *daroo*-assertions do not tolerate contextual evidence supporting the inference that the prejacent holds (such as empty wine bottles in John’s room in the example at hand). There is no such restriction the parallel example (4) with *wohl*.

(3) Kinou John-wa wain-o takusan nonda daroo.

(4) Gestern hat John wohl viel Wein getrunken.

“John has {*wohl*} had a lot of wine yesterday {*daroo*}.”

The evidence restriction on *daroo* is lifted when the particle *no* is added, *cf.* Takubo (2009) citing observations due to Morimoto (1994). In Rieser (2017a) I argue that, assuming that *no* marks contextual

evidence, *cf.* also Davis (2011), *daroo*'s apparent evidence-sensitivity can be explained as a preference for marking contextual evidence when a specialized marker such as *no* is available. Conversely, as there is no such expression in German, *wohl* is not sensitive to evidence.

Next, *daroo*-assertions have a common-ground forming or convincing use conveying exasperation as in (5), in which *wohl* can only occur with another discourse particle *doch*, as shown in (6).

- (5) Chigau daroo!
 (6) Das ist #(doch) wohl falsch!
 “That’s {*doch wohl*} wrong {*daroo*}!”

Again, this contrast can be explained by different particle inventories. German *doch* requires the speaker to be publicly committed to the prejacent proposition, and seeks to establish it as a mutual commitment, *cf.* Rieser (2017b). Thus, *doch*-assertions are common-ground forming, and can convey an exasperated nuance. While *wohl* is also compatible with this use, the specialized marker *doch* is mandatory in such cases (in which *wohl* conveys uncertainty over whether the prejacent actually becomes a shared commitment, *cf.* Rieser (2017d) for parallel discussion on *daroo*). As there is no such expression in Japanese, *daroo* has a convincing use in isolation (the discourse marker *jan* can be used in similar ways as *doch* but is not necessarily common-ground forming, *cf.* Rieser 2017c).

3.2 Utterance type restrictions

The empirical focus of this paper is the contrast in utterance type restrictions between *daroo* and *wohl* which cannot be explained by different particle inventories. In a nutshell, *daroo* is incompatible with questions (rising interrogatives), *wohl* with final declaratives. With final falling intonation (in assertions and falling interrogatives), on the other hand, both particles make the same contribution.

As for declaratives, assertions (*i.e.* falling declaratives) with *daroo* and *wohl* both convey positive speaker bias: (7) and (9) convey the speaker tends to believe that “nobody is there”. In contrast, rising declaratives are possible with *daroo*, but marginal with *wohl*: (8) conveys the speaker believes nobody is there and seeks to confirm that the addressee believes this, too, while (10) can marginally be interpreted as an echo-question with a metalinguistic flavor.

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|---|--|
| (7) Daremo inai daroo. “Nobody’s there <i>daroo</i> .” | (9) Es ist wohl keiner da. “Nobody’s <i>wohl</i> there.” |
| (8) Daremo inai daroo? “Nobody’s there <i>daroo</i> ?” | (10) ??Es ist wohl keiner da? “Nobody’s <i>wohl</i> there?” |

It should be noted that utterances like (8) have been analyzed as polar questions (for instance by Sudo 2013). I follow Hara and Davis (2013) taking them to be rising declaratives: they disallow *wh*-elements and have bias patterns markedly different from polar questions (Sudo also observes this).

As for interrogatives, rising interrogatives (questions) are fine with *wohl*, but degraded with *daroo*: (13) conveys the speaker grants some degree of uncertainty for the answer, while (11) is not readily interpretable. Falling interrogatives go with both particles and convey no speaker bias: (12) and (14) convey the speaker wonders whether nobody is there, and is either neutral, or negatively biased.

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| (11) #Daremo inai daroo ka? “Is nobody there <i>daroo</i> ?” | (13) Ist wohl keiner da? “Is <i>wohl</i> nobody there?” |
| (12) Daremo inai daroo ka. “Is nobody there <i>daroo</i> .” | (14) Ob wohl keiner da ist. “If nobody’s <i>wohl</i> there.” |

The table below summarizes the differences in utterance type restrictions between *daroo* and *wohl*.

| utterance type | <i>wohl</i> | <i>daroo</i> | conveyed meaning |
|---------------------------------|-------------|--------------|--------------------|
| Falling declarative (assertion) | ✓ | ✓ | assumption |
| Rising interrogative (question) | ✓ | # | hearer uncertainty |
| Rising declarative | ?? | ✓ | confirmation |
| Falling interrogative | ✓ | ✓ | wondering |

4 The locus of uncertainty, shifted

The observed contrast needs to be accounted for while at the same time maintaining the analyses of *daroo* and *wohl* close enough to also account for their similar meanings. I propose that both *wohl* and *daroo* are speech act modifiers that lower the quality threshold of the utterance, however, in slightly different ways. While *daroo* always lowers the quality threshold for speaker commitment, *wohl* targets the belief of an agent resolved to the addressee in final rising utterances.

Rising *daroo*-declaratives thus convey that the speaker, with some uncertainty, commits to an assumption that the addressee believes the prejacent while rising *wohl*-interrogatives (*wohl*-questions) request addressee commitment to the prejacent granting some uncertainty. The marginal status of *daroo*-questions and rising *wohl*-declaratives is explained by their highly marked meanings.

4.1 The quality threshold

Both *daroo* and *wohl* lower the quality threshold for commitment or forgone commitment, which I defined based on the two specific Gricean maxims of quality, cf. Grice 1975. Starting with assertions, when the first maxim “do not say anything you believe to be false” and the second maxim “do not say anything for which you have adequate evidence” are satisfied, an observer can infer that the speaker believes the prejacent to be true, as when an agent has adequate evidence for φ and does not believe $\neg\varphi$, it can be assumed that this agent believes φ . I write such commitment as $B_S\varphi$ (speaker S believes φ to be true). When the quality threshold is lowered, the “adequate” evidence required for assertion, and thus commitment arising from it, is weaker. I write this as $B_S^{>50\%}\varphi$ (speaker S believes φ is more likely than the alternative $\neg\varphi$).

While assertions commit S to φ , falling interrogatives convey that the speaker does not commit to the prejacent proposition, which I write as $\neg B_S\varphi$. Crucially, this allows for the speaker to be biased towards the prejacent — it does not follow that the speaker believes φ to be false. When, however, the quality threshold is lowered, the falling interrogative forgoes weaker commitment or speaker bias $B_S^{>50\%}\varphi$ rather than $B_S\varphi$. This has an interesting effect: not believing “ φ is more likely than $\neg\varphi$ ” is equivalent to believing “ φ is equally or less likely than $\neg\varphi$ ” — that is, falling interrogatives with a lowered quality threshold give rise to $B_S^{\leq 50\%}\varphi$ (equivalent to $\neg B_S^{>50\%}\varphi$). This excludes speaker bias towards the prejacent, explaining that falling *daroo*- and *wohl*-declaratives convey speaker bias towards the prejacent ($B_S^{>50\%}\varphi$), but falling *daroo*- and *wohl*-interrogatives do not ($B_S^{\leq 50\%}\varphi$).

4.2 Intonation and agent shifting

This accounts for the similarity of *daroo* and *wohl* in falling utterances, but leaves the contrast in questions and rising declaratives to be explained. I follow Gunlogson (2003) who proposes that the agent of commitment is resolved to the speaker by falling, to the addressee by rising intonation in English declaratives (Davis 2011 extends this to Japanese), and suggest that *daroo* and *wohl* convey uncertainty on different levels, as outlined below.

As mentioned, Hara and Davis (2013) claim that *daroo* is deictic in the sense that the agent of belief it refers to is resolved by sentence-final intonation. On my view, utterances make reference to deictic beliefs with or without *daroo*, as declaratives give rise to intonationally underspecified commitment written as $\mathcal{B}_S\mathcal{B}_x\varphi$. Final falling intonation resolves x to the speaker S , final rising intonation to the addressee A . Consequently, interrogatives are deictic as well, giving rise to forgone commitment written as $\neg\mathcal{B}_S\mathcal{B}_x\varphi$. When x is resolved to S in assertions and falling interrogatives, this gives rise to commitment and forgone commitment as discussed in 4.1 assuming that $B_S B_S \varphi$ is equivalent to $B_S \varphi$, and $\neg B_S B_S \varphi$ to $\neg B_S \varphi$. When, on the other hand, final rising intonation resolves x to A in declaratives, they resulting commitment is $\mathcal{B}_S\mathcal{B}_A\varphi$ — that is, they commit the addressee to the prejacent from the speaker’s perspective. Questions (*i.e.* rising interrogatives) forgo the commitment that rising declaratives make, giving rise to $\neg\mathcal{B}_S\mathcal{B}_A\varphi$. In this way, questions convey that the speaker is unsure whether the addressee believes the prejacent to be true, thereby requesting commitment (to either φ or an alternative) from the addressee. Thus, the assumption of intonationally underspecified commitment $\mathcal{B}_S\mathcal{B}_x\varphi$ from declaratives, resolution of x to S or A by intonation, and forgone commitment from interrogatives together account for the conveyed meanings of four utterance types (assertions, rising declaratives, falling interrogatives, and questions) compositionally.

4.3 Accounting for the *daroo/wohl* contrast

With the definitions from 4.2 on how commitment and forgone commitment arise from final rising and falling utterances in place, I propose that both *daroo* and *wohl* lower the quality threshold as outlined in 4.1, with a crucial difference in the locus of uncertainty they encode.

Concretely, *daroo* and *wohl* lower the quality threshold on different levels of commitment — while *daroo* modifies the quality of second-order belief or speaker commitment, that is \mathcal{B}_S in $\mathcal{B}_S\mathcal{B}_x\varphi$, *wohl* modifies the quality of first-order belief or intonationally underspecified commitment, that is \mathcal{B}_x in $\mathcal{B}_S\mathcal{B}_x\varphi$. As a consequence, the agent of uncertainty is fixed to the speaker in the case of *daroo*, but resolved by sentence-final intonation in the case of *wohl*. (15) to (18) show the intonationally underspecified commitments and forgone commitments that declarative and interrogative utterances with *daroo* and *wohl* give rise to according to this analysis (notation as introduced above).

$$(15) \quad \text{DEC}(\textit{daroo } \varphi): \mathcal{B}_S^{>50\%}\mathcal{B}_x\varphi$$

$$(17) \quad \text{DEC}(\textit{wohl } \varphi): \mathcal{B}_S\mathcal{B}_x^{>50\%}\varphi$$

$$(16) \quad \text{INT}(\textit{daroo } \varphi): \mathcal{B}_S^{\leq 50\%}\mathcal{B}_x\varphi$$

$$(18) \quad \text{INT}(\textit{wohl } \varphi): \neg\mathcal{B}_S\mathcal{B}_x^{>50\%}\varphi$$

(15) and (17) show commitment from declaratives with *daroo* and *wohl*, respectively. In the case of assertions, *i.e.* with final falling intonation, x is resolved to the speaker S , which results in weakened speaker commitment $B_S^{>50\%}\varphi$, assuming that both $B_S^{>50\%} B_S \varphi$ and $B_S B_S^{>50\%} \varphi$ are equivalent to $B_S^{>50\%} \varphi$. The contrast between *daroo* and *wohl* in final rising utterances is predicted as follows.

Declaratives with final rising intonation and *daroo* convey $\mathcal{B}_S^{>50\%}\mathcal{B}_A\varphi$, which essentially means that they tentatively commit the addressee to φ . This explains the confirmation reading, on which the speaker seeks to confirm an assumption regarding addressee belief. With *wohl*, on the other hand, rising declaratives would convey full speaker commitment to positive bias on part of the addressee ($\mathcal{B}_S\mathcal{B}_A^{>50\%}\varphi$). This explains that their only possible reading is to confirm a previous *wohl*-assertion of the addressee, thus functioning as echo-questions. Note that a similar effect arises crosslinguistically with probability adverbs that operate on the prejacent level, as in “There’s probably nobody there?”. This is because modification of φ by adverbs lowering subjective probability has a similar effect as lowering of the first-order quality threshold when the first-order agent x is resolved to the addressee A by final rising intonation (assuming that $\mathcal{B}_A\varphi^{>50\%}$ is roughly equivalent to $\mathcal{B}_A^{>50\%}\varphi$).

Rising interrogatives or questions with *wohl* convey $\neg\mathcal{B}_S\mathcal{B}_A^{>50\%}\varphi$ according to my analysis. Thus, they request potentially weaker commitment, or, as Zimmermann (2008) puts it, grant some degree

of uncertainty to the addressee. This is because in the case of *daroo*, the locus of uncertainty is first-order belief, and therefore shifted to the addressee when final rising intonation resolves x to A . The *wohl*-question thus indicates that the speaker is not sure whether the addressee *tends to believe* φ . With *daroo*, on the other hand, the rising interrogative would convey that the speaker is not biased regarding addressee belief over the prejacent ($\mathcal{B}_S^{\leq 50\%} \mathcal{B}_A \varphi$). This has the effect of conveying that the speaker is actually negatively biased regarding $\mathcal{B}_A \varphi$, as in the neutral case a plain question is the preferred alternative. If, on the other hand, the speaker is biased towards the addressee believing $\neg \varphi$, a biased negative polar question would be the salient alternative. In short, I defend that *daroo*-questions are degraded due to the highly marked meaning they convey.

5 Conclusion and outlook

I have proposed an analysis of *daroo* and *wohl* as utterance modifiers to explain a puzzling contrast in utterance-type restrictions, maintaining that *daroo* and *wohl* basically make the same contribution in lowering the quality threshold, differing only in the locus of uncertainty conveyed. Potential implications include the difference between $\mathcal{B}_S^{>50\%} \mathcal{B}_S \varphi$ and $\mathcal{B}_S \mathcal{B}_S^{>50\%} \varphi$ in the case of common-ground oriented assertions that attempt to establish the prejacent as a shared belief $\mathcal{B}_{S,A} \varphi$, where lowering the quality threshold on the second- and first-order level has different effects, and the interaction of lowering the quality threshold with adverbs of probability that operate on the propositional level. These questions remain for further research.

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