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Expectation management by epistemic particles

My central claim is that an exhaustive semantic account of epistemic particles is possible by capturing how they relate their prejacents to expectations and premises. I make this claim based on German *doch* and *ja* and Japanese *yo* and *ne*, all of which have been argued to mark the epistemic status of their prejacent, but there is no consensus as to what their basic meanings are and how their contributions come about.

Epistemic particles in German and Japanese

Generalizations on the contribution of German and Japanese epistemic particles are often strikingly similar. For instance, German *doch* and *yo* are often characterized as pushing the addressee to accept or consider the prejacent, *ja* and *ne* as confirming a bias that the prejacent is part of the common ground. While these parallels seem intuitively quite plausible, they are not an ideal basis for formalizing basic particle meanings, as the empirical picture, illustrated by some examples below, is far more complex.

Publication In (1), from Zimmermann (2011), a parent announces "It's a girl!" to someone not having witnessed the birth. In such utterances, making public what cannot be known to the addressee, *ja* and *doch* are infelicitous, as is Japanese *ne*, but not *yo* (2).

(1)   Es ist {#ja/#doch} ein Mädchen!   (2)   Onnanoko da   {yo/#ne}!
        it is   a   girl   girl   COP

Confirmation In (4), from Oshima (2014), and the German version (3), the speaker confirms the addressee's identity with a relatively high degree of confidence. Here, *doch* and *ne* align vs. *ja* and *yo*, which is rather rare and thus challenging for most analyses.

(3) Sie sind {#ja/doch} Herr Schmidt.   (4)   Arai-san desu {#yo/ne}.
    you are   Mr. Schmidt   Arai-Mr. COP

Exasperation (5) and (6) show a use typical for both *yo* and *doch*, on which the speaker is exasperatedly trying to convince the addressee of the prejacent "That's wrong!", for instance in reaction to insistance the it is not, or according behavior.

(5)   Das ist {#ja/doch} falsch!   (6)   Chigau {yo/#ne}!
        that is   wrong   wrong

Exclamation All of *ja*, *doch* and *yo*, but not *ne*, appear in exclamations like (7) and (8), where the speaker sees someone they did not expect and exclaims "Isn't that John!". Exclamations are potentially soliloquous, an issue for analyses relying on addressee belief.

(7)   Das ist {ja/doch} der Hans!   (8)   Taroo ka   {yo/#ne}!
        that is   the Hans   Taroo INT

Expectations, premises, and epistemic particles

I take all propositions that are relevant to the conversational background to be either premises or expectations. The set of premises is epistemically settled and generates expectations, which are not epistemically settled. I suggest that the derivation of expectations from premises is mainly mediated by what has been labeled weak epistemic necessity, as in (pseudo-)epistemic *ought*. Glossing over most details, (9) gives some minimal definitions for formulating the particles' contributions.

(9)   a. Π is the context-specific set of settled premises π.
        b. Ξ is the set of expectations ξ, including those derived from Π by WEN.

    c. $\rightsquigarrow$ relates premises and expectations so that $\pi \rightsquigarrow \xi$ iff $\pi \in \Pi^w \rightarrow \xi \in \Xi^w$.

    d.   Particle updates can add premises or expectations, *i.e.* target Π or Ξ.

In soliloquy, Π and Ξ reflect the agent's belief formation, revision, and inference processes, where premises generate expectations by WEN, but potentially also by bouletic or teleological prioritizing. In discourse, things get more complex, and Π is close in spirit to the common ground, whereas Ξ contains propositions similar to QUDs, set up for acceptance into Π. Expectations can thus also be introduced without supporting premises, and disagreement over what is, or should be, a premise is expected.

Particle meanings Resolving resulting is a typical use of *doch* and *yo*, confirming premises and expectations of *ja* and *ne*. I propose that the observed patterns can be explained by premise marking *vs.* expectation marking, and confirmation *vs.* update, where *doch* and *ja* are premise markers, *yo* and *ne* expectations markers, *doch* and *yo* updating and *ja* and *ne* confirming, as outlined in the presuppositions and update effects below.

(10)   a. $doch(p)$ presupposes: $\exists \xi \notin \Pi : p \rightsquigarrow \xi \wedge p \in \Pi$, updates Π with ξ

    b. $ja(p)$ presupposes: $\exists \xi \in \Pi : p \rightsquigarrow \xi \wedge p \in \Pi$

    c. $yo(p)$ presupposes: $\neg \exists \pi \in \Pi : \pi \rightsquigarrow p$, updates Ξ with p

    d. $ne(p)$ presupposes: $\exists \pi \in \Pi : \pi \rightsquigarrow p$

Publication: settles an open issue, *i.e.* presupposes $p \notin \Pi$ for the premises shared between interlocutors, and that p not be expected. This is only compatible with *yo*.

Confirmation requires balance of epistemic bias and room for error. *Yo* is not biased enough, marking p as unexpected, and *ja* is too biased, prematurely considering the salient expectation settled. *Doch* only tries to settle it, and *ne* marks p as an expected, both hitting middle ground. Premises are not shared as the utterance is discourse-initial.

Exasperation, in contrast is all about negotiation of shared premises. *Doch* tries to settle for p, similar to the confirmation, but there is disagreement over the content of Π, and hence over generated expectations. *Yo* targets the latter directly, setting up p for acceptance. *Ne* and *ja* are infelicitous as they presuppose too much consensus.

Exclamation is interesting as the particles interact with different utterance types. The interrogative with *yo* indicates that p is not settled, but *yo* sets it up for such, while *ne* infelicitously marks p as expected. *Doch* and *ja* differ subtly in that *doch* attempts to push for acceptance of a expectation into Π, potentially to resolve inconsistencies therein.

Outlook The proposed concept is not only compatible with belief-based approaches to epistemic particles but also QUD-based approaches like Rojas-Esponda (2014), modal approaches like Kaufmann and Kaufmann (2012), dynamic approaches like Davis (2011), and inference-centered approaches like Takubo and Kinsui (1997), among others, having the potential of joining some of their insights into a unified framework. Expectations are also a key factor in concessive and causal (discourse) relations, which epistemic particles typically interact with, and play a central role in phenomena like bias from outer negation, pointing towards deep connections between seemingly disparate phenomena.

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