The Precondition Particle: A Unified Analysis of German *denn*

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This paper is concerned with German *denn*, a discourse particle that can appear in polar interrogatives like (1) and *wh*-interrogatives like (2) (König, 1977; Thurmair, 1989), as well as in certain conditional antecedents like (3) (Brauße, 1994; Csipak and Zobel, 2016).

(1) Ist dir denn nicht kalt?   (2) Wo bist du denn?   (3) Er hätte gewinnen können, wenn er es
     Are you DENN *not cold?*   *Where are you* DENN*?*   denn gewollt hätte.
                                                        He could've won, if he DENN *had wanted to.*

Data. It has been observed that *denn* is discourse anaphoric: it cannot appear in totally out-of-the-blue contexts (König, 1977). For example, if A wakes B in the middle of the night, it is infelicitous for A to follow this up by asking (4). By contrast, it is felicitous for B to react to being woken up by asking (4).

(4) B/#A: Wie spät ist es denn? (*What is the time* DENN*?*)

Beyond this, however, the contribution of *denn* is often assumed to be so bleached out that *denn* is licensed in any information-seeking question. Our main data point is (5), which proves this assumption wrong: there *are* in fact non-discourse-initial information-seeking questions that don't license *denn*.

(5) [Peter is very fond of Maria: whenever she goes to a party, he goes as well. Peter's feelings aren't
     reciprocated by Maria, though. So, she won't necessarily go to a party just because Peter is there.
     All of this is commonly known. A and B are talking at a party.]
     A: Da hinten ist Maria!   (*A: Maria is over there!*)
     B: Ist (#denn) Peter auch hier?   (*B: Is Peter (#DENN) also here?*)

Proposal. We will explain the infelicity of (5) by assuming that, pace Csipak and Zobel (2014), *denn* is sensitive to the proposition that gets *highlighted* by the question. In (5), this is the proposition that Peter is at the party. We will say that what *denn* in (5-a) conveys is that the highlighted proposition is a *necessary precondition* for the information asserted by A.[1] Since it is commonly known, though, that Peter's presence is *not* a precondition for Maria's presence, the *denn*-question in (5-a) is infelicitous.

In what follows, we first introduce some auxiliary notions, then propose a felicity condition for *denn*.

– **Highlighting:** The notion of *highlighting* is used to capture the semantic objects that a sentence makes salient (Roelofsen and Farkas, 2015). For instance, both the polar question in (6-a) and the declarative in (6-b) are taken to highlight the proposition that Ann watched Psycho, i.e., $\lambda w.W(p)(a)(w)$; the *wh*-question in (6-c) is taken to highlight the 1-place property $\lambda x.\lambda w.W(x)(a)(w)$. To generalize over these different cases, we view propositions as 0-place properties. A sentence then highlights an n-place property, where $n \geq 0$ is the number of *wh*-elements in the sentence.

     (6) a. Did Ann watch Psycho?   b. Ann watched Psycho.   c. What did Ann watch?

– **Discourse events.** A *discourse event* is an utterance, i.e. an assertion, question or imperative, or any other event through which some piece of contextual evidence becomes salient (e.g., a discourse participant points at an object, thus making the object salient; or a bus drives by, thus becoming salient).

– **Proceeding in discourse.** Intuitively, for A to *proceed in discourse* is for A to act in line with (a) what the previous discourse event E has indicated would be a preferred action or (b) with the plans that A is publicly entertaining. E.g., if E was an imperative, A has to carry out the given instructions; if E was an assertion or the presentation of contextual evidence, A has to accept the new information; if E was a question, A has to answer it. Finally, if A announces or otherwise indicates that she wants to perform some action, then, to proceed in the above sense, she has to actually perform this action.

Proposed felicity condition for *denn* in polar questions, *wh*-questions and conditional antecedents.

> It is felicitous for a speaker c_S to use *denn* in a sentence with highlighted property f iff c_S considers learning an instantiation of f a necessary precondition for herself to proceed in the discourse.

This condition allows f to be one of several things: a precondition that is based on world knowledge, as in (7) below; a presupposition of the previous assertion; a piece of information that is missing in order to even interpret the previous utterance, as in (9) below; and so on.

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[1] That *denn* establishes a "necessary precondition" relationship has also been suggested by Csipak and Zobel (2016), but only for conditional *denn*, not for *denn* in questions, and without exploring the predictions that this approach makes.

Predictions for polar questions (PQs). For PQs, the highlighted property f is a 0-place property, i.e., a proposition. Learning an instantiation of this proposition thus amounts to learning the proposition itself. E.g., in (7), f is the proposition that the door is open. B is conveying that she first has to learn that the door is open before she can follow A's instruction to go ahead.

(7) *A: You go ahead! I'm coming in a minute.*
    B: Ist die Tür denn offen? (*B: Is the door DENN open?*)

A further prediction is that *denn* is acceptable in conjoined but not in disjoined questions. This is because *denn* marks learning f as **necessary** for the speaker to proceed. By using a disjoined question like (8-a), however, a speaker offers two **alternative** preconditions (here, a lottery win and a large inheritance)— and if there are several alternative preconditions, none of them can be necessary. On the other hand, a conjoined question like (8-b) is acceptable since there can of course be several necessary preconditions.

(8) *A: Did you hear? Sarah is going on a world trip next week!*

   a. B: #Hat sie denn im Lotto gewonnen **oder** hat sie denn reich geerbt?
      *B: #Has she DENN won the lottery **or** has she DENN come into a big inheritance?*
   b. B: Hat sie denn schon eine Route geplant **und** hat sie die Flüge denn schon gebucht?
      *B: Has she DENN planned the route yet **and** has she DENN booked the flights yet?*

Predictions for *wh*-questions (*wh*-Qs). In the case of a single *wh*-Q, the highlighted property f is a 1-place property; in the case of a multiple *wh*-Q, it is an n-place property with $n \geq 2$. E.g., in (9), $f = \lambda x.\lambda w.\mathrm{anna}(x)(w) \wedge \mathrm{intended\text{-}ref}(x)(w)$. Here, B conveys that in order to be able to interpret (and thus ultimately to accept) A's assertion, she needs to learn which of the *Anna*s A intended as a referent.

(9) [A and B know two Annas, one from Hamburg and one from Munich.]
    A: Earlier today, Anna called!
    B: Welche Anna meinst du denn? (*B: Which Anna do you DENN mean?*)

Here we find an asymmetry between *wh*-Qs and PQs: while it is acceptable for B to ask *which* Anna A was talking about, as in (9), it is not acceptable to inquire about a *specific* Anna using a *denn*-marked PQ, as in (10). This is because learning *some* instantiation of the property highlighted by (9) is indeed necessary for B to interpret A's utterance, but it is *not* necessary for B to learn the proposition highlighted by (10) (that A was referring to Anna from Hamburg), since there are several possible referents.

(10) B: Meinst du (#denn) Anna aus Hamburg? (*Do you (#DENN) mean Anna from Hamburg?*)

Predictions for conditionals. If *denn* appears in a conditional antecedent, f is the proposition expressed by the antecedent. Since *denn*-marked antecedents can only follow but not precede their consequents (Csipak and Zobel, 2016), I assume the consequent acts as the previous discourse event. We thus predict that *denn* is felicitous iff the speaker considers f a necessary precondition for (accepting) the consequent. That is, we predict *denn* to turn its containing conditional into a *biconditional*. This is indeed borne out:

(11) Kritik ist willkommen, wenn sie (#denn) konstruktiv ist—und auch wenn sie nicht konstruktiv ist.
    Criticism is welcome if it (#DENN) is constructive—and also if it isn't constructive.

Causal conjunction *denn*. Finally, discourse particle *denn* is homonymous with a conjunction that expresses, roughly, a causal or precondition-like relationship between two sentences (Pasch *et al.*, 2003):

(12) Die Straße ist nass, denn es hat geregnet. (*The street is wet because it rained.*)

Since on the account presented here *denn* marks its "prejacent" as a precondition, we have already made some headway towards a uniform account. The full paper will discuss the possibility of such an account.

Selected references. Csipak & Zobel (2014). A condition on the distribution of discourse particles across types of questions. In *NELS 44* ◆ Csipak & Zobel (2016). Discourse particle *denn* in the antecedent of conditionals. In *CSSP 11* ◆ König (1977). *Modalpartikeln in Fragesätzen* ◆ Roelofsen & Farkas (2015). Polarity particle responses as a window onto the interpretation of questions and assertions. *Language*, **91**(2), 359–414 ◆ Thurmair, M. (1989). *Modalpartikeln und ihre Kombinationen*.