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

DISCOURSE PARTICLES

- **Discourse particles:** expressions that help speakers with organizing and "navigating" a discourse

- Formal semantics literature: focus on those particles that occur in **declarative clauses**, e.g., *ja*

- Commonly treated as indicating something about the **status of the information** conveyed by the declarative (McCready, 2012).

- E.g., *ja(φ)* indicates that $[\![\varphi]\!]$ is common knowledge or is verifiable on the spot (Kratzer, 2004).

This perspective doesn't straightforwardly extend to particles that appear in **interrogative clauses**, since questions don't primarily convey information.

DENN DISTRIBUTION

- German *denn* is an example of such a particle: it appears primarily in interrogatives, …

- …both in **polar interrogatives**:

  (1) Kann Tim denn schwimmen?
       Does Tim DENN know how to swim?

- …and in *wh*-**interrogatives**:

  (2) Warum lachst du denn?
       Why are you DENN laughing?

- *Denn* can also appear in certain **conditional antecedents** (Brauße, 1994; Csipak and Zobel, 2016):

  (3) a. Kritik ist willkommen, wenn sie denn konstruktiv ist.
      Criticism is welcome if it DENN is constructive.

      b. Sie hätte gewonnen, wenn sie das denn gewollt hätte.
      She would have won if she DENN had wanted to.

- **Today:** I try to account for these uses of *denn* in a **unified way**.

Outline:	§1 question *denn*	§2 conditional *denn*

Question *denn*

DATA: INFELICITOUS USES OF *DENN*

- The contribution of *denn* is often assumed to be so bleached out that the particle is licensed in virtually ***any* information-seeking question**.

- But this is not in fact what we find. There are contexts where using *denn* is **infelicitous**...

PARTY scenario

(4) [Peter is very fond of Sophie but not so fond of parties: he only goes to a party if she goes as well. Peter's feelings aren't returned by Sophie, though. So, she won't go to a party just because Peter is there. All of this is commonly known. *A* and *B* are talking at a party, wondering which of their friends are there.]

A: Sophie is over there!

B: Ist Peter (**dann** / **#denn**) auch hier?

B: Is Peter (then / #DENN) also here?

- On the other hand: if the **roles were reversed** (i.e., if Sophie was very fond of Peter), *denn* would be **acceptable** in (4)!

(5)   B: #Is Peter DENN also here?

1 *denn* is **sensitive to the proposition that gets highlighted** by the question (here: the proposition *p* that **Peter is at the party**).

2 By using *denn*, *B* conveys that she **needs *p* confirmed** before she can make sense of/integrate the fact that Sophie is there.

3 However, Sophie's going to parties **doesn't depend** on Peter's going there.

▶ Hence, it isn't obvious why *B* would need *p* confirmed to make sense of Sophie's being at the party.

▶ For this reason the *denn*-question in PARTY is **infelicitous**.

Highlighting:

The notion of **highlighting** is used to capture the **semantic objects that a sentence makes salient** (see Roelofsen and Farkas 2015).

(6) a. Ann watched Psycho. $\rightsquigarrow \lambda w.W(p)(a)(w)$ 0-place property
     b. Did Ann watch Psycho? $\rightsquigarrow \lambda w.W(p)(a)(w)$ 0-place property
     c. What did Ann watch? $\rightsquigarrow \lambda x.\lambda w.W(x)(a)(w)$ 1-place property
     d. Who watched what? $\rightsquigarrow \lambda y.\lambda x.\lambda w.W(x)(y)(w)$ 2-place property

A sentence highlights an **n-place property**, where $n \geq 0$ is the number of *wh*-elements in the sentence.

Discourse events:

Essentially, the notion of a **discourse event** gives us a **wider notion of a discourse move**.

A **discourse event** can be:

- an **utterance**, i.e., an assertion, question or imperative, or

- any **other event** that makes some piece of contextual evidence salient (e.g., a discourse participant pointing at an object, thereby making it salient; or a bus driving by, thereby becoming salient).

Proceeding in discourse:

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.

POSITIVE PROPOSAL: AUXILIARY NOTIONS

For instance:

- if E was an **imperative**, A has to accept E and carry out the instructions;
- if E was an **assertion** or the presentation of **contextual evidence**, A has to accept both E and the new information;
- if E was a **question**, A has to accept E and answer it;
- if A announces or otherwise indicates that she wants to **perform some action**, then she must actually perform this action.

Here, *accepting* information goes **beyond a mere belief update:** it also includes **integrating** the new information with existing beliefs, ideally even being able to **explain** the new information.

We are now ready to specify a **felicity condition** for *denn*:

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 allows f to be one of several things.
- ► For example, a **precondition based on world knowledge**:

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

Another example: a **presupposition** of the previous assertion:

(8)   *A: I can't see Peter's car anywhere.*
      B: Hat Peter denn ein Auto?
      B: Does Peter DENN *have a car?*

Or: information missing to even **interpret** the previous utterance:

(9)   [*A* and *B* know two Annas.]

      A: Earlier today, Anna called!
      B: Welche Anna meinst du denn?
      B: Which Anna do you DENN *mean?*

PART 1-A

Denn in Polar Questions

For polar questions, the highlighted property f is a proposition.

So, for polar questions:

<table>
<tr><td>learning an instantiation of f</td><td>=</td><td>learning the proposition highlighted by the question</td></tr>
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For example, the proposition that the door is open:

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

Observation:

denn is not acceptable in **disjoined** questions ($\neq$ disjunctive questions).

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

- ▶ This is **predicted** because *denn* marks learning f as **necessary**.
- ▶ By **disjoining** two questions with highlighted propositions f_1 and f_2, *B* signals that **answering either** of them is **sufficient**.
- ▶ So, neither learning f_1 nor learning f_2 can be **necessary**.

What is predicted to be acceptable on the other hand:

denn in **conjoined polar questions**:

(12)   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?*

Denn in *wh*-Questions

In the case of a single *wh*-question, the highlighted property *f* is a **1-place property**.

(13)   [*A* and *B* know two Annas.]

   A: Earlier today, Anna called!
   B: Welche Anna meinst du denn?
   B: Which Anna do you DENN mean?

▸ Here, $f = \lambda x.\lambda w.\text{called-anna}(x)(w) \wedge \text{intended-referent}(x)(w)$.

B conveys that to be able to **interpret** *A*'s assertion, he needs to learn which of the *Anna*s *A* intended as a referent.

We find a certain **asymmetry** between *wh-* and polar questions:

(14)   [*A* and *B* know two Annas, one from Berlin, one from Bonn.]
A: Earlier today, Anna called!

    a.   B: Meinst du (#denn) Anna aus Berlin?
         B: Do you (#DENN) mean Anna from Berlin?

    b.   B: Welche Anna meinst du denn?
         B: Which Anna do you DENN mean?

This is **correctly predicted** because…

For **polar questions** there is just one instantiation of f:

learning **an instantiation** of f	=	learning **that** A meant Anna from Berlin

Learning *this specific* instantiation is *not* necessary.

But *wh-***questions**: there are **several instantiations of** f.

learning **an instantiation** of f	=	learning that A meant Anna from Berlin **or** learning that A meant Anna from Bonn **or...**

Learning *one of these* is indeed necessary.

PART 2

Conditional *denn*

denn can also appear in certain **conditional antecedents**, preferably following the consequent (Csipak and Zobel, 2016):

(15)   a.   Kritik ist willkommen, wenn sie denn konstruktiv ist.
            Criticism is welcome if it DENN is constructive.
       b.   Er hätte gewinnen können, wenn er es denn gewollt hätte.
            He could have won if he DENN had wanted to.

❶ If *denn* appears in a conditional antecedent, the **highlighted property** f is the **proposition expressed by the antecedent**.

❷ I further assume that the consequent acts as the **previous discourse event**.

We then **predict**:

denn is acceptable just in case the speaker considers the antecedent proposition a **necessary precondition** for the consequent.

(16) Kritik ist willkommen, wenn sie denn konstruktiv ist.
      Criticism is welcome if it DENN is constructive.

Further prediction:

Since *denn* marks the antecedent as **necessary**, it turns its containing conditional into a **biconditional**.

This is borne out:

(17) 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.

(18) Wir gehen morgen Squash spielen, wenn (?denn) Court 1 frei ist oder wenn (#denn) Court 2 frei ist.
We'll play squash tomorrow if (?DENN) court 1 is free or if (#DENN) court 2 is free.

WRAPPING UP

- I have proposed a **unified account** of *denn* in:
  1. polar questions,
  2. *wh*-questions and
  3. conditional antecedents,

- On this account, *denn* **connects** the **highlighted content** of its host clause to the **preceding discourse** and expresses a **precondition-like relationship**.

- **Open issues:**
  - nonstandard questions: rhetorical questions, biased questions
  - other kinds of disjunctive questions
  - *denn* in counterfactual antecedents
  - relation to other particles (*überhaupt*)
  - …

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