Connecting to Illocutionary Force

A theoretical and experimental study of the German discourse particle *denn*

Josef Bayer, Markus Bader, Jana Häussler & Simon Hopp

Introduction Many languages have particles which are predominantly found in the root clause due to the fact that they modify its illocutionary force. German abounds with this kind of discourse particles. Discourse particles are sensitive to clause types. German *denn* (related to English *then*) occurs in questions but not in declaratives or imperatives; it introduces a contextualization that requires a particular common ground between speaker and hearer: "given the actual circumstances known to both speaker and hearer". As a result, questions with *denn* are felt to express an enforced attitude of being concerned about the answer.

(1) a. Wo wohnst du?
where live you
"Where do you live"

b. Wo wohnst du **denn**?
where live you DENN
"Where do you live? (I am wondering)"

The particle contributes systematically to force although it is not part of the split C-domain, a fact which is not confined to *denn*. An interrogative force head probes and values an unvalued interrogative feature on the particle. *Denn* can, unsurprisingly, appear in questions which are embedded under verbs of asking. However, it can also show up in the scope of a propositional attitude verb.

(2) Wie denkst du, dass es **denn** weitergehen soll mit euch?
how think you that it DENN go-on should with you
"How do you think that the two of you should carry on? (I'm wondering)"
http://mein-kummerkasten.de/142829/fremdgehen.html.

The question is how *denn* is licensed in the embedded non-interrogative clause. We hypothesize that it is locally licensed by the wh-element that passes through SpecCP of the embedded clause before it moves to the matrix clause. Short wh-movement in the matrix clause fails to license a distant *denn*. According to our intuitions, (3) is ungrammatical.

(3) *Wer denkt, dass es **denn** irgendwie weitergehen wird?
who thinks that it DENN somehow go-on will
"Who thinks that things will somehow go on?"

If these intuitions can be empirically substantiated, the occurrence of *denn* in embedded non-interrogative clauses would constitute a new diagnostic for successive cyclic wh-movement. Unfortunately, examples as in (2) rarely occur in corpora. Subject-wh clauses like (3) involving the propositional attitude verbs *denken* (to think), *glauben* (to believe) and *meinen* (to mean) could so far not be found but it would be premature to discard them on the basis of no further evidence. Therefore it is desirable to explore the status of these examples by means of systematic grammaticality judgments. We will present two studies of grammaticality judgments which used the *Magnitude Estimation* (ME) method.

Experiment I Examples with short and long wh-movement were presented with the particle *denn* either in the root clause or in the embedded clause. 128 sentences were created in a two-factorial design with WH-MOVEMENT (long vs. short) and PARTICLE POSITION (close vs. distant) as schematized in the 4 conditions of TABLE 1.

TABLE 1

	A. Short Movement	B. Long Movement
Close *denn*	(i) [wh ... t … **denn** [$_{CP}$ …]]	(i) [wh ... **denn** … [$_{CP}$ … t …]]
Distant *denn*	(ii) [wh ... t … [$_{CP}$ … **denn** …]]	(ii) [wh ... [$_{CP}$ … **denn** … t …]]

In addition to the four conditions involving the particle *denn*, the experiment contained an equal number of closely matched control sentences in which *denn* was replaced by the temporal adverb *damals* ("in those days"); *damals* is neutral both with respect to the sentence type and with respect to the root- versus non-root character of the clause. The results of EXPERIMENT I show a significant decline of ME-scores in condition (A,ii) while no comparable decline was found in condition (B,ii).

Experiment II Many speakers of German are less than comfortable with long wh-movement from *dass*-clauses. Therefore, a second experiment was run modifying the factor WH-MOVEMENT to „short movement" versus "partial movement". Partial movement is illustrated in (4), which is coined according to (2).

(4) Was denkst du, wie es **denn** weitergehen soll mit euch?
what think you how it DENN go-on should with you
[interpretation as in (2)]

Under partial movement, the wh-phrase – here *wie* – moves only locally but its scope is extended to the matrix clause by means of the unmarked wh-pronoun *was*, *was* being either a base-generated scope marker or a moved pronoun that is coindexed with the lower CP, depending on theoretical considerations which we need not be concerned with here. 128 sentences were created in a two-factorial design with WH-MOVEMENT (partial vs. short) and PARTICLE POSITION (close vs. distant). The condition WH-MOVEMENT (short) stayed the same as in EXPERIMENT I.

TABLE 2

	A. Short Movement	B. Partial Movement
Close *denn*	(i) [wh ... t … **denn** [$_{CP}$ …]]	(i) [*was* ... **denn** … [$_{CP}$ wh … t …]]
Distant *denn*	(ii) [wh ... t … [$_{CP}$ … **denn** …]]	(ii) [*was* ... [$_{CP}$ wh … **denn** … t …]]

In (B,ii), *denn* occurs still in a non-interrogative CP because at LF the scope of the locally moved wh is associated with the matrix wh-element *was*. As before, the data were controlled with examples involving the neutral adverb *damals*. The results of EXPERIMENT II show globally enhanced acceptability scores, which can be attributed to the circumvention of overt long wh-movement. Nevertheless, condition (B,ii) does not differ greatly from the local condition (B,i), whereas the decline of scores in condition (A,ii) of EXPERIMENT I could be replicated. Thus, the result from EXPERIMENT I is confirmed by EXPERIMENT II. Both experiments suggest that the difference between (2)/(4) and (3) rests on solid grounds. In terms of frequency, *denn* occurs with overwhelming majority in root-clauses. In spite of this, speakers of German have reliable intuitions about the licit occurrence of this discourse particle in embedded non-interrogative clauses. We interpret this as confirmation of a theory according to which a root-oriented particle can be licensed in the course of the derivation by a transient occurrence of wh in its local CP-domain. Under this perspective, the distribution of *denn* constitutes a novel diagnostic for successive cyclic wh-movement.

Supporting evidence One expectation is that *denn* should be able to occur in clauses which are properly included in the extraction path. Intuitions which have so far not been tested experimentally confirm this expectation.

(5) Wie denkst du, dass seine Mutter **denn** meint, dass es ~~wie~~ weitergehen soll mit euch?
how think you that his mother DENN thinks that it go-on should with you
"How do you think that is mother thinks that the two of you should carry on? (I am wondering)"

Further evidence for a long-distance dependency is provided by examples in which a discourse particle forms a constituent with a wh-phrase and moves along with it. Particles are known to appear in rigid hierarchical order (cf. Thurmair, 1989; Cinque, 1999; Coniglio, 2009). For instance, *schon* (lit. "already"), an indicator of a rhetorical question, must not scope over *denn* while *denn* may scope over *schon*. At first sight, this principle appears to be violated in (6).

(6) Wann **schon** glaubst du, dass er **denn** ~~wann schon~~ mal gearbeitet hat?
when SCHON believe you that he DENN ever worked has
"When do you think he has ever worked (I am wondering)? – He never did."

The non-offending (linear) order in (6) is taken care of if *schon* is pied-piped into the root clause, and *wann schon* leaves a copy below *denn* in the dependent clause. A theoretical explanation will be provided which integrates the long-distance licensing of *denn* (and similar particles), as demonstrated by the experiments, with cases of pied-piping and "reconstruction" as seen in (6).